Inventory of Estimated Budgetary Support and Tax Expenditures for Fossil Fuels 2013



OECD

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BETTER POLICIES FOR BETTER LIVES

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Foreword

The aftermath of the worst economic crisis of our lifetimes is a challenging environment for government policy. This is particularly the case in more advanced economies, where a combination of persistent unemployment and high levels of public debt poses difficult challenges for policymakers. Remedies are needed that will promote sustained growth over the longer term. At the same time, governments are searching for ways to improve the fiscal and environmental situation in the short term. One promising avenue is the removal of inefficient and environmentally harmful subsidies.

Reforming or eliminating support for the consumption or production of fossil fuels can contribute to improving economic and fiscal outcomes, while also helping to tackle pressing environmental problems like climate change. In September 2009, G20 Leaders agreed to rationalise and phase out, over the medium term, inefficient fossil-fuel subsidies. A similar commitment was made by Leaders of the Asia-Pacific Economic Cooperation (APEC) forum in November 2009. The OECD, together with other inter-governmental organisations, has contributed to several reports on energy subsidies in response to G20 Leaders' mandates and requests.

The key to any reform is a better understanding of the policies that support fossil-fuel production and use, and the financial transfers they generate. Getting a handle on the tax instruments that encourage oil and gas production or on provisions of tax codes that relieve particular end-use sectors from excise taxes is a complex exercise. The release by the OECD of its first inventory of measures supporting fossil fuels in a selection of 24 countries helped to improve information and transparency in this area. This second *Inventory of estimated budgetary support and tax expenditures for fossil fuels* is the first attempt to provide data and analysis in a consistent manner for all OECD countries.

Over 550 individual producer or consumer support mechanisms for fossil fuels are identified in the present inventory throughout all 34 OECD economies. The aggregated value of these individual budgetary measures and tax expenditures amounted to between USD 55 billion and USD 90 billion annually during 2005-11. Not all these mechanisms are unambiguously inefficient, and some caution is required in interpreting the support amounts. Nevertheless, it is clear that there is ample scope for both saving scarce budgetary resources and improving the environment through fossil-fuel subsidy reform, not only in developing and emerging-market economies, but also in advanced countries.

I hope that the *Inventory* will inspire governments to further increase transparency in this area, and that it will help spur a productive debate about the policies that influence the production and use of fossil fuels. Further work to expand the geographical coverage and deepen the *Inventory* to cover other types of measures like loan guarantees is already underway. Both developed and developing countries need to make progress in reforming inefficient support to fossil fuels. The OECD stands ready to help them in these efforts.



Angel Gurría
Secretary-General

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Abbreviations

..	Not available
b/d	Barrels per day
bcm	Billion cubic metres
billion	10^9
boe	Barrels of oil equivalent
CCS	Carbon capture and storage
CCTs	Clean-coal technologies
G-20	The Group of Twenty nations
GJ	Gigajoule (1 joule x 10^9)
GSSE	General Services Support Estimate
GW	Gigawatt (1 Watt x 10^9)
HS	HS – Harmonised System
IEA	International Energy Agency
kg	Kilogramme (1 000 kg = 1 tonne)
kg CO_2-eq	Kilogramme of carbon-dioxide equivalent
Kt	Kilotonnes (1 tonne x 10^3)
kW	Kilowatt (1 Watt x 10^3)
kWh	Kilowatt-hour
LNG	Liquified natural gas
LPG	Liquified propane gas
mb/d	Million barrels per day
MBtu	Million British thermal units
Mcm	Million cubic metres
million	10^6
MJ	Megajoule (1 joule x 10^6)
Ml/year	Million litres per year
Mt	Million tonnes (1 tonne x 10^6)
Mtce	Million tonnes of coal equivalent
Mtoe	Million tonnes of oil equivalent
MW	Megawatt (1 Watt x 10^6)
MWh	Megawatt-hour
n.a.	Not applicable
NGL	Natural-gas liquids
p	Provisional
ppm	Parts per million (by volume)
tce	Tonne of coal equivalent
toe	Tonne of oil equivalent
trillion	10^{12}
VAT	Value-added tax
W	Watt (1 joule per second)

Currency abbreviations

AUD	Australian dollar
ATS	Austrian schilling
CAD	Canadian dollar
CHF	Swiss franc
CLP	Chilean peso
CZK	Czech koruna
DEM	Deutsche Mark
DKK	Danish krone
EEK	Estonian kroon
EUR	Euro
FIM	Finnish markka
GBP	British pound
GRD	Greek drachma
HUF	Hungarian forint
ISK	Icelandic króna
JPY	Japanese yen
KRW	Korean won
ILS	Israeli new shekel
MXN	Mexican peso
NLG	Dutch guilder
NOK	Norwegian krone
NZD	New Zealand dollar
PLN	Polish zloty
PTE	Portuguese escudo
SEK	Swedish krona
SIT	Slovenian tolar
SKK	Slovak koruna
USD	United States dollar

Executive Summary

The need for an inventory

OECD member countries are still slowly recovering from the worst economic crisis in decades. With increasing understanding of the risks of climate change, countries are struggling at home and internationally to find cost-effective measures to reduce their greenhouse-gas emissions. Policy makers are faced with having to deal with a multitude of challenges at once: nourishing growth while encouraging it to become more "green"; preventing high unemployment rates from becoming entrenched; reducing government deficits; and managing global imbalances. Implementing growth-friendly fiscal structures and public-spending patterns is critical to reducing imbalances and stimulating growth.

The importance of reforming policies supporting fossil fuels was explicitly recognised in the OECD's June 2009 Declaration on Green Growth, in which 34 countries vowed to "encourage domestic policy reform, with the aim of avoiding or removing environmentally harmful policies that might thwart green growth, such as subsidies: to fossil fuel consumption or production that increase greenhouse gas emissions…" [*www.oecd.org/greengrowth*]. Three months later, G-20 leaders committed to "rationalize and phase out over the medium term inefficient fossil fuel subsidies that encourage wasteful consumption", and called upon the rest of the world to do the same. In November 2009, a similar commitment was made by leaders of the Asia-Pacific Economic Cooperation (APEC) forum.

Despite the many benefits of reforming fossil-fuel subsidies, efforts to implement such reforms have long been hampered by a crucial lack of information regarding the amount and type of support measures in place. This lack of information was most profound for fossil-fuel support in industrialised countries, including the membership of the OECD. The International Energy Agency (IEA) has been producing data on fossil-fuel consumer subsidies in emerging and developing countries for several years using an estimation approach known as the "price-gap" method, which measures the extent to which a policy keeps domestic fuel prices below an international reference price. However, the price-gap approach does not generally capture support to producers and most tax concessions to both producers and consumers, which account for much of the support provided by developed countries, since such measures do not push final prices below the level of international reference prices. Such support and tax concessions nonetheless reflect policies that may induce greater production or use of fossil fuels than would otherwise be the case.

To help fill this critical data gap, in 2010 the OECD started collecting data on budgetary support and tax expenditures that relate to fossil fuels. The *Inventory of Estimated Budgetary Support and Tax Expenditures for Fossil Fuels* contains the results of that effort, setting out over 500 measures in all 34 OECD countries.

How fossil fuels are supported in OECD countries

Governments support energy production in a number of ways, including by: intervening in markets in a way that affects costs or prices; transferring funds to recipients directly; assuming part of their risk; selectively reducing the taxes they would otherwise have to pay; and undercharging for the use of government-supplied goods or assets. Support to energy consumption is also provided through several common channels: price controls intended to regulate the cost of energy to consumers; direct financial transfers; schemes designed to provide consumers with rebates on purchases of energy products; and tax relief.

The OECD inventory takes stock of the broad set of measures identified by governments that effectively "support" fossil-fuel use or production, as defined using the PSE-CSE framework, which has already been used extensively to measure support, most notably in agriculture.[1] The scope of "support" is deliberately broad, and is broader than some conceptions of "subsidy". It covers a wide range of measures that provide a benefit or preference for a particular activity or a particular product, either in absolute terms or relative to other activities or products.

The data in the inventory were sourced from official government documents and web sites, complemented by information provided directly by government agencies themselves. The valuations are generally those estimated by the respective governments, though the OECD has allocated support among the different fuels based on production and consumption volumes where such information is not available from government sources.

Policy features that support fossil fuels have been put in place for various policy reasons. While a number of the measures may be inefficient or wasteful, others may not be. The inventory does not analyse the impact of specific measures or pass judgement on which ones might be usefully kept in place and which ones a country might wish to consider for possible reform or removal. Its purpose is to provide information about policies that provide some level of support, as a starting point for further analysis about the objectives of particular measures, their impacts (economically, environmentally and socially), and possible reforms and alternatives.

The inventory provides important information about incentives created within each national economy. Caution is required, however, in interpreting the support amounts. This is particularly the case as the majority of support mechanisms identified in the inventory are tax expenditures. Tax expenditures are *relative* preferences within a country's tax system that are measured with reference to a benchmark tax treatment set by that country. Since the benchmark or "normal" tax treatment varies considerably from country to country, the value of this type of support is not comparable across countries. Thus, for example, a country that applies high rates of taxation to fossil-fuel end products within the context of an excise-tax system with lower rates for some products than others may have higher measured support to fossil fuels than a country with lower but uniform excise-tax rates, even if the tax system of the former country has higher taxes than the latter country on each type of fuel.

1 The PSE-CSE framework distinguishes among those measures that benefit producers (PSE: Producer Support Estimates), consumers (CSE: Consumer Support Estimate), and those that benefit producers or consumers collectively, or that do not support current production, such as industry-specific R&D (GSSE: General Services Support Estimate). For more information, see the OECD's PSE Manual, available online at: *www.oecd.org/agriculture/PSE*.

Some countries are more transparent than others when it comes to budgetary support and tax expenditures, which has implications in terms of the coverage of support mechanisms in the inventory, with the largest number of mechanisms listed for those countries that are most transparent. Part of the value of this inventory is that it provides a standardised template for reporting measures. This common platform will encourage countries to become more open in quantifying and reporting on policy measures that affect fossil-fuel production or use.

More generally, the OECD inventory marks the beginning of an ongoing process that will be broadened and deepened over time. Numerous other forms of support — notably those provided through risk transfers, concessional loans, injections of funds (as equity) into state-owned enterprises, and market price support — are not quantified yet. The data requirements for estimating the transfers associated with such measures are greater than for budgetary transfers and tax expenditures, and the calculations to estimate the support elements more complex.

Chapter 1.

Introduction

This chapter describes the coverage, method and data sources used to compile the country information contained in the Inventory. It also examines the way in which this information should be interpreted, with particular attention devoted to the concept of tax expenditures given its relative importance for the report. A distinction is made among tax expenditures based on whether they relate to the consumption of fossil fuels, to the use of fossil fuels as inputs to production, or to the production of fossil fuels. Measurement issues are also examined, in particular the role of tax benchmarks and the importance of the broader tax system to understand the meaning of tax-expenditure estimates. Lastly, this chapter provides an overview of OECD-wide support to the production and use of fossil fuels in the form of a few summary charts and statistics.

This inventory provides quantitative estimates of direct budgetary support and tax expenditures supporting the production or consumption of fossil fuels in OECD member countries. This information has been compiled as part of the OECD's programme of work to develop a better understanding of environmentally harmful subsidies (EHS). It is also intended to inform the on-going efforts of the Group of Twenty (G20) nations to reform fossil-fuel subsidies.

The G20 exercise is concerned with "inefficient fossil fuel subsidies that encourage wasteful consumption", which G20 countries have declared their intent to "[r]ationalise and phase out over the medium term" (G20, 2009). A similar commitment was made by leaders of the Asia-Pacific Economic Cooperation (APEC) forum in November 2009. And through the OECD's 2009 Declaration on Green Growth, 34 countries declared that they would "encourage domestic policy reform, with the aim of avoiding or removing environmentally harmful policies that might thwart green growth, such as subsidies: to fossil fuel consumption or production that increase greenhouse gas emissions …" (OECD, 2009a).

This inventory proceeds from the fundamental perspective that the identification of "subsidies" to any sector or industry requires first taking an inventory of the full set of measures that may qualify as support to that sector. For one, because of interactive effects among policies, it is difficult to determine *a priori* whether a particular support policy is inefficient, encourages wasteful consumption, or is environmentally harmful. Only with a full picture of the operating policies can various analytical tools be brought to bear on questions about the effects of those policies on human welfare and the environment.

This inventory marks a first attempt to comprehensively list the various direct budgetary transfers and reported tax expenditures that effectively support fossil-fuel production or use in OECD countries. It may be seen as a complement to the information on fossil-fuel consumption price subsidies that has been compiled by the International Energy Agency (IEA). The coverage of this inventory departs, however, significantly from that of the IEA estimates and from the lists of subsidies reported by some governments. The IEA uses the so-called "price-gap" approach, which compares domestic fuel prices to an international reference price, in order to provide one type of estimate of the extent to which different countries support the consumption of fossil fuels. This results in most OECD countries not being covered since they tend to have domestic prices that are at (or due to taxes, often above) market reference price parity. The price-gap approach may also not fully capture those measures that support the production of fossil fuels (to the extent that such support is not reflected in domestic prices).

The scope of what is considered "support" is here deliberately broad, and is broader than some conceptions of "subsidy". Essentially, it includes both direct budgetary expenditures and tax expenditures that in some way provide a benefit or preference for fossil-fuel production or consumption relative to alternatives. This broader definition thus encompasses policies that may induce changes in the relative prices of fossil fuels. However, while the present inventory covers measures that provide support (either absolute or relative) to fossil fuels, it does not attempt to assess the impact on prices or quantities of the measures considered, nor does it pass any judgment as to whether a given measure is justified or not.

In interpreting the figures, it is important to underscore that tax expenditures are measures of support only relative to the benchmark tax structure of the country in question. Since the figures measure *relative* support within the context of that country's tax system, they are not comparable across countries. A country that applies high rates of taxation to fossil-fuel end products within the context of a highly differentiated excise-tax system may thus have higher measured support to fossil fuels than a country with lower but uniform excise-tax rates, even if the tax system of the former country has higher taxes than the latter country on each type of

fuel.[1] Further, the comprehensiveness of tax expenditure reporting varies significantly between countries.

It is recognised that the policy features that support fossil fuels have been put in place for various policy reasons. A consequence of this broad conception of support is that while a number of these measures may be inefficient or wasteful, others may not be. The report does not provide any analysis of the impacts of specific support measures, and so does not pass any judgement on which measures might be usefully kept in place and which ones a country might wish to consider for possible reform or removal. Its purpose is to provide information about policies that give some level of support, as a starting point for further analysis about the objectives of particular measures, their impacts (economically, environmentally and socially), and possible reforms and alternatives.

Structure of the report

The inventory is organised by country. The Secretariat has identified budgetary support and tax expenditures relating to fossil fuels in all 34 OECD member countries. Its intention is eventually to extend the exercise to cover selected non-OECD countries.

Each country chapter is structured into three sections. The first section provides an overview of the salient features of the energy economy of the country: the shares of different energy sources in total primary energy supply (TPES); fossil resources; domestic production and international trade; the ownership structure of the industry; pricing and taxation policies in the energy sector; and support policies.

The second section of each country chapter provides documentation of the measures, identified by the OECD Secretariat to date, that support fossil-fuel production or consumption activities involving that country. Measures that do not affect current production or consumption of fossil fuels are also included in the inventory. These are separately itemised in the general services support estimate (GSSE) category and refer mainly to expenditures relating to past production activities (e.g. to compensate victims of mine land subsidence following the underground extraction of coal or hydrocarbons), to research and development not directly relating to production, and to activities such as the funding of strategic stockpiles, the benefits of which are not easily attributable to producers or consumers uniquely.

The entries for individual measures, identified by name and a unique OECD database code, describe the years for which data are available on the cost of the measure. Thereafter follows a succinct description of the measure, highlighting its formal incidence — i.e. which aspect of production or consumption is targeted and how it operates. Each entry concludes with a reference to the data source or sources.

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1 For example, even though gasoline and diesel fuels may both be taxed in Country *X* (and it could be argued that neither is subsidised in an absolute sense), a lower level of taxation on diesel compared with gasoline would be included in the inventory if the lower rate is treated as a tax expenditure by Country *X*. This is considered support, since the tax structure changes market prices in a non-neutral way that is more favourable to the lower-taxed product. Note that Country *Y*, which taxes diesel and gasoline at the same rate, would not be considered to provide support even though its common tax rate is lower than the lower of the two rates in Country *X*. (This would also be the case even if Country *Y* did not tax these fuels at all). The fact that measured support is higher in Country *X* than Country *Y* therefore does not mean that the tax system of Country *X* is more favourable to fossil fuels than that of Country *Y*. It merely indicates that there is a preference within Country *X*'s tax system of the measured size relative to the benchmark treatment for that country. While not directly comparable, such preferences or non-neutralities are nonetheless important since they can impact production and consumption decisions.

The third section of each country chapter presents the data itself. These are reported according to the organising framework described in Figure 1.1. This framework, which is similar to the one used by the OECD for organising data on support to agriculture, divides incidence into consumption and production, and production into several sub-categories depending on whether the measure relates to output returns (i.e. the unit revenues received from sales); enterprise income (the overall income of producers); the costs of intermediate inputs, such as fuel or electricity; and the costs of value-adding production factors – labour, land (which includes access to sub-surface natural resources), capital, and new knowledge. The other dimension of the figure, transfer mechanism, refers to how the transfer is created.

Coverage, method and data sources

This first attempt at estimating support to fossil-fuel production and consumption provided by a broad range of countries of necessity concentrates on budgetary transfers and tax expenditures relating to fossil fuels. Data on these transfers are relatively straightforward to obtain from official government documents. These measures correspond, respectively, to the first and second rows in Figure 1.1, and also touch on elements in the third row. Numerous other forms of support – notably support provided through risk transfers, concessional credit, injections of funds (as equity) into state-owned enterprises, and market price support – were not quantified, however. The data requirements for estimating the transfers associated with such measures are greater, and the calculations required to estimate the support elements more complex, than for budgetary transfers and tax expenditures. Nonetheless, the OECD Secretariat intends to include these transfers in the future.

Regarding market price support – which refers to the monetary value of gross transfers from consumers and taxpayers to energy producers arising from policy measures creating a gap between domestic producer prices and reference prices of that specific energy commodity, measured at the mine-mouth or well head – an indication of its possible magnitude can be obtained by examining import tariffs on fossil fuels. Tables 1.1 and 2.1 show most-favoured nation (MFN) tariffs applied by OECD countries on the main fossil fuels. MFN tariffs are the highest tariffs applied on imports from other member states of the World Trade Organization (WTO). Weighted-average import tariffs will tend to be lower than those indicated by the MFN tariffs, as most OECD countries are party to one or more bilateral or regional free-trade agreements, which usually set tariffs on industrial products such as fuels to zero. Petroleum products in general attract the highest tariffs, followed by natural gas and coal. Even based on applied MFN tariffs, however, it appears that import tariffs do not protect domestic producers to any important extent. In the few countries that apply a common import tariff on all goods (e.g. Chile and Korea), a small degree of protection of domestic producers (where applicable) may exist. The effect on consumers is to raise the domestic price by the level of the tariff, and to slightly dampen demand.

Also not covered by this exercise are measures relating to energy-consuming capital, such as support to the manufacturing of motor vehicles designed to run on petroleum fuels, nor to electricity producers, except in a few particular cases where electricity is derived exclusively from fossil fuels. However, support provided through provisions of the income-tax system of many countries that implicitly encourage employers to provide employees with fuel credit cards for buying motor fuels used in company-owned automobiles *would be* covered in the inventory, were those data available.

Consumption of fossil fuels is here understood in a broader sense than just final consumption since it refers to the stage at which fuels are burnt, whether this occurs in motor vehicles, stationary engines, heating equipment or power plants. Production in turn encompasses the following stages: extraction; transportation (e.g. through pipelines); and processing and refining. Measures encouraging the use of fossil fuels in power generation are,

however, included under consumption since it is the combustion of fuels that is here directly supported.

Country coverage comprises all 34 OECD member countries. In addition, support provided by sub-national governments (states, provinces, *Länder*) is also included for the following federal countries: Australia, Canada, Germany, and the United States. Time and resource constraints meant, however, that the chapter for the United States was only able to include measures for ten states, the selection of which was based on their relevance in terms of fossil resources. The inclusion in the inventory of measures provided by only selected sub-national jurisdictions in some federal countries calls for additional caution in interpreting the estimates and further precludes country comparisons. This exercise documents that support provided by sub-national governments is, however, not trivial.

Generally, the data provided in this inventory have been obtained from government sources. Support measures were identified mainly through searches of official government documents and web sites. In a few cases, unpublished data were furnished by OECD governments. The data presented are as complete as possible, but they are by no means comprehensive. There is more information presented in the inventory for those countries which have been relatively more transparent in terms of their support to fossil fuel consumption and production in their budget books. This does not necessarily mean that these countries have higher levels of support than other countries, but may reflect that they have been more transparent about the support that is provided.

A limiting factor in respect of tax expenditures relating to fossil fuels is the extent to which OECD countries produce such estimates already. In a recent survey of OECD countries, 16 of the 24 responding countries (Australia, Austria, Belgium, Canada, France, Germany, Greece, Mexico, the Netherlands, Norway, Portugal, Spain, Switzerland, Turkey, the United Kingdom, and the United States) stated that they publish full tax-expenditure reports on a regular basis (OECD, 2010). Most of these reports cover both corporate and personal income taxes. Fewer cover VAT, and fewer still attempt to estimate tax expenditures in respect of excise taxes (which, although significant, may in part be because of conceptual difficulties in defining an appropriate benchmark system for a tax that is applied to a specific commodity).[2]

However, few countries include detailed figures in their published tax-expenditure estimates related to the production or consumption of fossil fuels, and in some cases the figures that are published may relate to energy consumption or a range of natural-resource production rather than specifically to fossil fuels. Where data do exist[3], they reveal that the tax expenditures are varied, with some providing minor relief to selected consumers or industries, and others providing significant relief to broad groups of taxpayers.

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2 Governments typically take decisions on tax expenditures simultaneously with decisions on broad programme spending in annual budgets. Except from compliance and policy discussions, there has typically been little oversight thereafter. Recently, however, the judicial branches of some countries have begun to look at the equity perspectives of tax expenditures, in light of constitutional provisions requiring equal treatment under the law.

3 In some cases, countries have multiple procedures and definitions of what constitute tax expenditures. In the United States, for example, the Joint Committee on Taxation (a legislative body) publishes a list of tax expenditures that is different from that published by the Department of the Treasury (an executive body). For this report, estimates were generally derived from the Department of the Treasury, as their numbers are generally more detailed than those produced by the Joint Committee.

Table 1.1. Matrix of support measures, with examples

		Statutory or formal incidence (to whom and what a transfer is first given)								
		Production							Direct consumption	
					Costs of production factors					
		Output returns	Enterprise income	Cost of intermediate inputs	Labour	Land and natural resources	Capital	Knowledge	Unit cost of consumption	Household or enterprise income
Transfer mechanism (how a transfer is created)	**Direct transfer of funds**	Output bounty or defficiency payment	Operating grant	Input-price subsidy	Wage subsidy	Capital grant linked to acquisition of land	Capital grant linked to capital	Government R&D	Unit subsidy	Government-subsidized life-line electricity rate
	Tax revenue foregone	Production tax credit	Reduced rate of income tax	Reduction in excise tax on input	Reduction in social charges (payroll taxes)	Property-tax reduction or exemption	Investment tax credit	Tax credit for private R&D	VAT or excise-tax concession on fuel	Tax deduction related to energy purchases that exceed given share of income
	Other government revenue foregone			Under-pricing of a government good or service		Under-pricing of access to government land or natural resources; Reduction in resource royalty or extraction tax		Government transfer of intellectual property right	Under-pricing of access to a natural resource harvested by final consumer	
	Transfer of risk to government	Government buffer stock	Third-party liability limit for producers	Provision of security (e.g. military protection of supply lines)	Assumption of occupational health and accident liabilities	Credit guarantee linked to acquisition of land	Credit guarantee linked to capital		Price-triggered subsidy	Means-tested cold-weather grant
	Induced transfers	Import tariff or export subsidy	Monopoly concession	Monopsony concession; export restriction	Wage control	Land-use control	Credit control (sector-specific)	Deviations from standard IPR rules	Regulated price; cross subsidy	Mandated life-line electricity rate

Table 1.2. MFN tariffs applied by OECD countries on imported hydrocarbon fuels, as of 1 January 2012

Country	Crude oil and liquid petroleum products							Gaseous hydrocarbons		
	Crude oil	Motor gasoline	Aviation spirit	Kerosene	Jet fuel, kerosene-based	Diesel	Heavy fuel oil	LNG	LPG	Gaseous natural gas
HS code:	2709	2710.11 ex	2710.11 ex	2710.19 ex	2710.19 ex	2710.19 ex	2710.19 ex	2711.11	2711.12	2711.21
Australia[1]	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Canada	0%	0%	0%	0%	0%	0%	0%	0%	**0-12.5%**	0%
Chile	**6%**	**6%**	**6%**	**6%**	**6%**	**6%**	**6%**	**6%**	**6%**	**6%**
Iceland	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Israel[2]	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
European Union	0%	4.7%	4.7%	4.7%	4.7%	0-3.5%	3.5%	0%	**0-8%**	0%
Japan	0%	**JPY 0.995/L**	**JPY 0.995/L**	**0-3%**	**JPY 0.375/L**	**JPY 0.819/L**	**JPY 0-0.819/L**	0%	0%	**4.1%**
Korea	**3%**	**5%**	**5%**	**5%**	**5%**	**5%**	**5%**	**3%**	**3%**	**3%**
Mexico	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
New Zealand	0%	0%	0%	0%	0%	0%	0%	0%	NZD 0.104/L	NZD 3.17/GJ
Norway	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Switzerland	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turkey	0%	**4.7%**	**4.7%**	**4.7%**	**4.7%**	**0-3.5%**	**3.5%**	0%	**0-8%**	0%
United States	**USD 0.052 5-0.105/bbl**	**USD 0.525 / bbl**	**USD 0.0525-0.105/bbl**	**USD 0.105-0.525/bbl**	**USD 0.525/ bbl**	**USD 0.0525-0.525/bbl**	**USD 0.0525-0.105/bbl**	0%	0%	0%

1. Australia applies excise duties at the point of import, and lists these duties in its tariff schedule. Since these (AUD 0.38143 per litre for motor gasoline, kerosene, diesel and heavy fuel oil, and AUD 0.03556 per litre for aviation spirit and jet fuel) are the same as the normal excise duty applied to domestically produced fuels, the tariffs here are listed as zero.

2. The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Source: European Union: Business Link (*www.businesslink.gov.uk/bdotg/action/tariff*); all other countries: European Commission, Market Access Database (*madb.europa.eu/mkaccdb2/indexPubli.htm*).

Table 1.3. Tariffs applied by OECD countries on imported solid fossil fuels, as of 1 January 2012

Country	Hard coal				Lignite		Peat	Coke and semi-coke
	Anthracite	Bituminous coal	Other	Briquettes of hard coal	Non-agglomerated	Agglomerated		or coal, lignite or peat
HS code:	2701.11	2701.12	2701.19	2701.20	2702.10	2702.20	2703	2704
Australia	0%	0%	0%	0%	0%	0%	0%	0%
Canada	0%	0%	0%	0%	0%	0%	**6.5%**	0%
Chile	**6%**	**6%**	**6%**	**6%**	**6%**	**6%**	**6%**	**6%**
Iceland	0%	0%	0%	0%	0%	0%	0%	0%
Israel[1]	0%	0%	0%	0%	0%	0%	**6%**	0%
European Union	0%	0%	0%	0%	0%	0%	0%	0%
Japan	0%	0%	0%	**3.9%**	0%	0%	0%	**3.2%**
Korea	0%	0%	0%	**1%**	**1%**	**1%**	**1%**	**3%**
Mexico	0%	0%	0%	0%	0%	0%	0%	0%
New Zealand	0%	0%	0%	0%	0%	0%	0%	0%
Norway	0%	0%	0%	0%	0%	0%	0%	0%
Switzerland	**CHF 0.80/ tonne**	**CHF 0.80/ tonne**	**CHF 0.80/ tonne**	**CHF 0.80/ tonne**	**CHF 0.80/ tonne**	**CHF 0.80/ tonne**	**CHF 0.80/ tonne**	**CHF 0.80/ tonne**
Turkey	0%	0%	0%	0%	0%	0%	0%	0%
United States	0%	0%	0%	0%	0%	0%	0%	0%

1. The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Source: European Union: Business Link (*www.businesslink.gov.uk/bdotg/action/tariff*); all other countries: European Commission, Market Access Database (*madb.europa.eu/mkaccdb2/indexPubli.htm*). The identification of support measures was conducted mainly through searches of official government documents and web sites. In a few cases, unpublished data were requested from, and furnished by, OECD governments.

The level of disclosure and accuracy of sub-national tax expenditures relating to fossil fuels can vary widely as well. Moreover, in their corporate income-tax systems, a number of sub-national governments provide the same tax expenditures as federal governments, creating additional tax relief, even absent specific statutory tax breaks.

The main transformation of data carried out by the Secretariat was to allocate support to particular fuels where government data do not provide such a breakdown, and to allocate support for descriptive purposes in terms of its formal incidence (e.g. support to output returns, labour, land). Following standard practice (see, for example, OECD, 2009b), transfers associated with policies benefitting more than one fuel or sector were allocated according to the relative value of production or consumption, or proportional to the energy-equivalent volume of production or consumption. It is recognised that the actual allocation of support across fuel types may in practice vary based on factors other than the volume or value of production or consumption, but this approach is adapted in the absence of more specific information. For these reasons, while the base data come from government sources, the particular breakdowns may not reflect the views of the responsible governments. In a few cases, mainly pertaining to excise-tax exemptions, the Secretariat also estimated the value of these tax expenditures, based on the published rate of exemption and national or IEA data on the volume of fuel that was exempted.

Interpretation of the data

The data on direct budgetary expenditures constitute a relatively small part of the inventory of transfers compiled for this report. They are concentrated for the most part in three areas: (i) support for energy purchases by low-income households; (ii) government expenditure on research, development and demonstration projects, both through government laboratories and through grants to non-governmental bodies; and (iii) transfers to help redeploy resources in declining fossil-fuel industries, namely coal.[4] Data on direct budgetary support are relatively easy to collect and interpret: the data are usually provided in government budget documents, and there is little need to refer to a hypothetical benchmark – unlike the case for tax expenditures.

Types of tax expenditures relating to fossil fuels

Tax expenditures, by contrast, are always estimated with reference to a benchmark tax level or system. The following section, therefore, explains the main types of tax expenditures examined for this report, and some of the caveats that must be born in mind when interpreting the data.

Tax expenditures with respect to fossil fuels can be categorised into three broad groups: (i) those relating to final consumption of fossil fuels; (ii) those relating to the use of fossil fuels as inputs to production; and (iii) those relating to the production of fossil fuels, including extraction, refining and transport.

Tax expenditures relating to final consumption of fossil fuels

This group of tax expenditures is targeted at final consumption, typically by households, and is generally provided through lower rates, exemptions, or rebates with respect to the two main types of consumption taxes:

4 In the coal industry, direct payments are still used by a few countries to help keep high-cost producers from going out of business, but the long-run trend in these types of transfers is downwards. Indeed, since the late 1980s, subsidised coal production has halted entirely in Belgium, France, Ireland, Japan, and Portugal.

- Value added taxes (VAT) (which are intended to be broad-based taxes on final consumption, representing a percentage of the value of the good or service sold); and
- Excise taxes (which are levied on specific goods, and for which the value of the tax normally is unrelated to the value of the underlying good).

These are generally the most visible form of tax expenditures relating to fossil fuels, as they have a direct effect on prices and therefore consumption, though they are not always easy to measure.

Some tax expenditures are levied broadly in the economy through general exemptions or rate reduction in countries' VAT rates. Other tax expenditures are more targeted. In this area, three main categories of tax expenditures stand out: (i) those related to specific groups of consumers, (ii) those related to specific tax bases, and (iii) those related to how the fuels are used. In the first group, qualifying individuals or categories of consumers are taxed less heavily on their fossil-fuel use than users subject to the standard rate of tax. Often, government entities are exempt from fuel taxes (Box 1.1). Sometimes reduced VAT rates are intended to achieve social goals, such as with the exemption of low-income earners from taxes. Such tax exemptions encourage higher rates of consumption of the exempted fuels than would occur in the absence of the exemptions. Governments similarly attempt to achieve social goals through differential tax rates (such as lower tax rates or exemptions on smaller quantities).

Box 1.1. Expenditures relating to governmental activities

When tax expenditures relating to fossil fuels are discussed, most people think first of the beneficiaries as fossil-fuel producers or private consumers of such fuel. Rarely do they think of governments. Yet, in many instances, governments (and their affiliated bodies) are significant beneficiaries of fossil-fuel-related tax expenditures.

In France, for example, the government taxes natural gas consumption at a rate of EUR 1.19 per megawatt hour (MWh). The tax structure features a number of exemptions that can be categorised in the other types of tax expenditures mentioned above (such as for households and transportation). In addition, until recently, sub-national governments and other public authorities were exempted from the tax. In 2008, this one tax expenditure was estimated at EUR 37 million. There was also a tax expenditure for fuel used by the military, estimated at EUR 30 million (French Budget, 2010). Both these tax exemptions were eliminated starting in 2009 and 2010, respectively. Many OECD countries provide tax exemptions or reductions for other levels of governments or quasi-governmental bodies, including fuel used in hospitals, schools, and public transport. While such measures may not have a net revenue impact if the government that suffers the lost revenue is the same government that benefits from the concession, just as in the private sector a selective exemption for fossil fuels in the public sector can nonetheless bias decisions by government managers responsible for a spending budget (managed independently of the government's tax revenues) toward greater use of fossil fuels than would otherwise be the case.

In the second group, specific fossil fuels sometimes are subject to reduced rates or are exempted from tax altogether, even though they are intended for the same end purpose as other fuels that are taxed. A common example in the transportation fuel area is a lower tax rate (or exemption) on diesel relative to gasoline (petrol). The broader context, however, must be taken into account. In some countries where the excise tax on diesel is substantially lower than on gasoline (petrol), goods vehicles have to pay distance-based road-user charges. Many countries also levy lower excise taxes on fuels deemed to be "cleaner" than gasoline or diesel, such as CNG, LPG and biofuels, in order to encourage consumers to switch to those fuels. Finally, in the third group are tax expenditures occurring as a result of differences in rates based on how the fossil fuels are used (for example, diesel use on highways versus diesel used in primary industries). Aviation fuels are a special case (Box 1.2).

An important point to bear in mind when interpreting any tax expenditures relating to VAT and excise taxes on fuel is that, in most OECD countries, the majority of the fuel – especially fuel used in motorised vehicles – that is consumed is taxed to some degree. That which is not is generally sold at a price that is at least at world-market parity. (The current exception among OECD countries is Mexico.) The overall net effect of this taxation, even after the exemptions, reductions and rebates, is still to provide some degree of disincentive to consume compared with a situation in which no taxes were applied, and hence no tax expenditures would be measured. The deviations from the standard tax rate nonetheless still distort relative prices *within* an economy, and may favour the consumption of certain fuels in preference to others. This type of non-neutrality reported by governments thus constitutes "support" for purposes of this inventory.

Box 1.2. The taxation of fuel used in international aviation

Fuels purchased for use in international aviation are sold free of tax due to an international agreement dating from December 1944: the Convention on International Civil Aviation (also known as the "Chicago Convention"). While fuel taxes may be applied to domestic aviation, Article 24(a) of the Chicago Convention states that "(f)uel …, on board an aircraft of a contracting state … shall be exempt from customs duty … inspection fees or similar national duties or charges." This provision was extended by the Council of the International Civil Aviation Organization (ICAO) in a 1999 Resolution, which states: "fuel … taken on board for consumption" by an aircraft from a contracting state in the territory of another contracting State departing for the territory of any other State shall be exempt from all customs or other duties … Moreover, the Resolution broadly interprets the scope of the Article 24 prohibition to include "import, export, excise, sales, consumption and internal duties and taxes of all kinds levied upon … fuel." Most, if not all, bilateral air-services agreements include similar clauses to the ICAO Resolution's expanded view of the Chicago Convention prohibition against taxes on international fuel.

This broad tax exemption was brought about to prevent distortions of aviation markets among countries, such as due to the double taxation of fuel, and to avoid inefficient tax-avoidance behaviour, such as airlines shifting routes to reduce tax payments.

Other arrangements generally exempt fuel used in international transport by rail and water as well.

Several OECD countries now apply taxes on fuel used for domestic flights. For example, the United States levies a USD 0.011 per litre (USD 0.043 per gallon) charge on domestic jet fuel, and in the Canadian province of Alberta aviation fuel is subject to both a provincial CAD 0.015 per litre tax and a federal levy of CAD 0.04 per litre. In Japan, fuels used for domestic aviation are taxed at JPY 26 (EUR 0.25) per litre, and in Norway they are taxed at NOK 0.70 (EUR 0.09) per litre.

The relative nature of tax expenditures relating to taxes on consumption can best be illustrated with an example. Assume a country decides to raise additional revenues through a new excise tax on heating oil. Assume also that in an effort to avoid making low-income households worse off, the government exempts them from the new tax. The new tax raises USD 950 million net per year and the government reports a tax expenditure (foregone tax revenue) due to the tax exemption of USD 50 million.

While this new policy results in a net increase in taxes on heating oil of USD 950 million, the country's own reported tax expenditure for low-income households is included in the inventory as support of USD 50 million since it represents more favourable tax treatment for this particular group of taxpayers relative to the treatment that applies to others. Clearly the tax exemption has an important policy purpose – protecting low-income families from cost increases. The inclusion of such measures in the inventory is merely a recognition that support is provided for use of fossil fuels by low-income families when considered relative to the tax treatment that applies to others. This facilitates discussion about the impacts and goals of the policy. For example, it might be asked whether the goals of raising new revenue while protecting low-income families could be achieved without providing a weaker disincentive to use fossil fuels for low-income families relative to the general population by other approaches

such as direct income support rather than a tax exemption. Whether or not the tax is intended to reduce fossil-fuel use, it would clearly tend to have this impact, so the issue of differential incentives for different groups is relevant from an environmental point of view. It is, however, noted that some readers may not generally interpret "support" for fossil fuels in this manner. For example, they may interpret support to be the net impact that policies have on the sector, or organisations and individuals consuming fossil fuels (e.g. in this case, a net increase in taxes of USD 950 million). This net approach to evaluating support is not, however, the approach used for this study.

Tax expenditures relating to fossil fuels as inputs to production

A significant portion of fossil fuels (e.g. heating in manufacturing plants, inputs to other uses) is consumed by manufacturers and service providers. Some tax expenditures are thus targeted at fossil fuel products that form an input to production. With some types of taxation, such as with VAT, governments attempt to tax only final consumption. In so doing, firms are effectively and necessarily exempted from the VAT that they pay on inputs, through an input refunding system. Such measures are specifically designed not to discriminate among different production methods. As such, exempting energy, including fossil fuels, from VAT when it is only an input to production, can be consistent with the broader tax-policy aims of VATs.

Box 1.3. Manufacturer privilege

In most OECD countries, and across the European Union, industries engaged in the upgrading or transformation of energy from one form to another (e.g. oil refineries, coal-briquette plants, and fossil-fuel-fired power plants) are exempted from excise taxes on energy. This is due to what is sometimes called the "manufacturer privilege" – a provision of the tax code which deems that fossil fuel used in the production of final energy products (such as gasoline or coal briquettes or electricity) cannot be taxed. Yet those same fuels, when used by other industries as part of their production processes, *are* often taxed. From an environmental perspective, it is the combustion of the fuel, regardless of the stage of production, which causes damage.[1] If the subsequent consumption of the energy products resulting from this type of energy transformation process is subject to taxation (e.g. in the case of an electricity tax at the point of distribution), it might be logical to exempt from tax the fuel inputs (e.g. natural gas) that are transformed into energy outputs (e.g. electricity) in order to avoid double taxation. On the other hand, coverage of all fuel consumed as energy would require either taxation of the energy consumed in the transformation process (i.e. the amount by which energy inputs to the transformation process exceeds outputs) or a grossing-up of the tax on the energy outputs (e.g. the electricity) to account for the energy use in the production process.

1. This is generally true for pollutants such as carbon dioxide. Other pollutants, such as nitrogen oxides (NOX), are highly dependent on the method of combustion.

Excise taxes, however, intentionally raise the price of the taxed item – e.g. because its use is deemed harmful to society, or because governments can raise revenues easily and relatively efficiently on its consumption. Given this intent, there is much less rationale for exempting businesses who use these goods as inputs to production, as the goal is not to tax final consumption but the specific (potentially environmentally or socially harmful) product or activity. In this case, a tax exemption may actually limit the effectiveness of the tax. Tax expenditures in this area can include exemptions from excise taxes on fuels for certain types of businesses or households and reductions in rates of energy taxes that are related to the energy intensity of firms' production (e.g. to attenuate the impact that the standard tax rate might have imposed on firms' competitiveness).[5] Industries engaged in the transformation of

5 It is recognised that if, by contrast, tax rates were applied uniformly, international competitiveness concerns could create pressure to set a lower uniform tax rate, which could result in a lower level of internalisation of external costs.

fossil fuels into more-refined products or electricity are also often exempted from excise taxes on the fuels used as inputs (Box 1.3). Commonly, fuel used by producers in primary sectors (agriculture, fishing, forestry and mining) is exempted when used in vehicles not operated on publicly financed roads, on the basis that at least part of the tax serves as a means for recovering the cost of building and maintaining those roads or to internalise costs associated with road use (e.g. accidents and noise). The intent of the tax may affect whether or not the country in question considers a particular exemption to be a tax expenditure or not.

Tax expenditures relating to the production of fossil fuels

Industries engaged in the extraction of hydrocarbons and mineral resources are unique from other businesses in that the key input to their production – the natural resource in the ground – is commonly publicly owned, there is often significant uncertainty about its exact extent and quality, and its value often depends significantly on the cost of production in the particular location. The production of such resources has the potential to generate super-normal profits.[6] Therefore, in addition to levying the regular corporate income tax on profits earned in resource extraction, governments typically levy additional charges that may be seen as representing the "sale price" for the publicly-owned resource. These charges may take various forms such as royalties, additional income taxes, and state participation.

At the same time, many fossil-fuel-producing countries have corporate tax expenditures that are targeted at the extraction or production of fossil fuels (and their transformation into usable inputs to intermediate and final consumption). These are often premised on concerns relating to risk and uncertainty, energy security, capital-intensity, high costs, and long project timelines. The tax expenditures reduce the costs of extraction, putting downward pressure on the final price to consumers.

Tax expenditures in this area are commonly provided through the corporate income tax (CIT) system and may be targeted to fossil fuels or to resource extraction more generally. Such tax expenditures are provided through, among other features of the tax code, accelerated depreciation allowances for capital, investment tax credits, additional deductions for exploration and production, and preferential capital gains treatment for particular fields. Tax expenditures on production can also take less visible forms such as the special treatment of income from state-owned enterprises, tax relief for income earned on industry sinking funds (e.g. for site remediation), tax-exempt bonds, the use of foreign tax credits for what may be considered royalty payments, and exemptions from restrictions on passive losses[7] (Box 1.4).

6 Unlike manufacturing, many of the costs of production in natural-resource extraction depend on the location and geological characteristics of the resource being extracted. Given that market prices are determined by the marginal producer (usually the highest-cost producer supplying the market at any given time), the normal operation of the market can give rise to profits that are much larger (i.e. "super-normal") than those which would have been the minimum to justify investment in a particular well or mine. However, much of the investment in a well or mine is immobile: it cannot be used to produce another product or transferred to another location if prices fall below production costs. In addition, any economic rent going to those producers with lower costs may eventually be capitalised in the resource mineral rights, provided the relevant market is competitive enough. In that case, it is the owners of the resource (as opposed to the firm extracting the resource) that may end up receiving most of the long-run producer surplus.

7 A passive loss is a loss incurred through a rental property, limited partnership, or other enterprise in which a corporation or individual does not have a working interest. A working interest in an oil and gas property is one by a party that is expected to contribute to the cost of developing and operating the property. Parties merely holding rights to royalties and production payments are not considered to have working interests.

Box 1.4. Supporting the extraction of fossil fuels in the United States and Canada

In the United States, one of the largest tax expenditures is the *excess of percentage over cost depletion* option. Outside of the natural-resource sector, taxpayers are normally limited to deducting only their actual expenses from their income. For the minerals sector, producers (with the exception of integrated oil and gas firms) are allowed to deduct a fixed percentage of gross income from the mineral property to account for depletion in reserves (oil, coal, gold, etc.) instead of the value of the actual depletion. This fixed percentage is highly favourable and can even exist well after the expenses to acquire and develop a property have been recovered. It is estimated that this tax expenditure would provide a USD 1 190 million subsidy to fossil-fuel production in FY2011 (US Office of Management and Budget, 2012). As part of the budgets for FY2012 and FY2013, the executive branch proposed to eliminate this benefit for coal mines, as well as for oil and gas wells (in addition to other tax expenditures).

About half of Canada's oil production comes from so-called oil sands, where oil and sand are naturally combined, requiring additional processing steps to produce marketable oil. This requires extra capital and additional water and energy use. Such oil-sands development receives a tax benefit through the use of an accelerated capital cost allowance. This provisions allows firms to deduct expenditures on capital assets at a faster rate than other businesses and faster than what economic rates of depreciation would suggest, providing a financial advantage. The cost of this measure in nominal cash-flow terms was estimated at the time of the 2007 federal budget to be on the order of CAD 300 million annually (0.02% of GDP) for the 2007-11 period. The 2007 federal budget announced the phase-out of this measure over the 2011-15 period.

The effect of these tax benefits is to lower the cost of production and (since many are related to capital) provide an incentive for more investment, and potentially greater production, than would otherwise be the case, which would generally be at the cost of reduced economic output elsewhere because of the diversion of investment. This can affect both firm profitability and the price of fuels to be sold (depending, among other things, on the degree to which the price is set internationally). For firms with marginally profitable production, such schemes may not only have incremental effects on production, but can have a bearing on whether or not the firm continues producing at all. In other situations, such as where supply is constrained (by factors such as regulatory restrictions or limitations on labour or materials), tax benefits may simply increase firm profitability or contribute to inflation of input costs.

Tax-expenditure features may also be found in royalty systems, resource-rent taxes, and other specialised fiscal instruments that apply to resource extraction. Such features must, however, be considered in the context of the particular fiscal system of which they form a part.

Measurement and interpretation of tax expenditures

Unlike direct expenditures, where outlays can usually be readily measured, tax expenditures are estimates of revenue that is foregone due to a particular feature of the tax system that reduces or postpones tax relative to some benchmark tax system. There are a number of important caveats concerning both the interpretation and comparability of tax expenditure estimates, however. These affect both: (i) what constitutes a tax expenditure, and (ii) how its size should be gauged. A number of these caveats are discussed below.

The data on tax expenditures that are provided in this inventory reflect estimates generated by national and sub-national governments themselves, and as such reflect the benchmark against which the governments chose to make these comparisons.

Defining a benchmark

A key challenge in determining or assessing tax expenditures is to identify the standard or benchmark tax regime against which the nature and extent of any concession is judged. A number of different approaches to deciding on the benchmark regime are possible, and these vary among countries.

- Many countries base their tax-expenditure estimates on a conceptual view about what constitutes "normal" taxation of income and consumption. Typically, the benchmark is defined to include structural features of the tax system, while special features intended to address objectives other than the basic function of the tax (e.g. raising revenues, or internalising externalities) may be considered to be deviations from the benchmark. The line between what is structural and what is special, however, is often not a clear one.
- Some countries take a reference-law approach and identify only concessions which appear as such on the face of the law as tax expenditures. Under this approach, a tax credit would likely be identified as a tax expenditure, while differential tax rates on two products within a broader category might not be.
- A few countries restrict their tax-expenditure estimates to those tax reliefs (e.g. refundable income-tax credits) that are clearly analogous to public expenditure.

Even in a relatively straightforward case, such as reduced VAT rates, the different approaches could lead to different results. Some countries take their standard rate of VAT as the baseline for measuring the revenue forgone from taxation of some goods and services at lower rates, while others regard such lower rates as an intrinsic part of their VAT and would therefore report no tax expenditure. Where countries have many different rates, it may not be clear which rate should be considered the benchmark.

Another approach is not to look at the current or normal tax regime but rather an "optimal" tax regime, something more often done as an analytic exercise than in practice. This is of particular relevance when investigating tax expenditures related to fossil fuels, given the presence of externalities – the cost imposed on others in society by a private action. When externalities are introduced, the issue of a baseline level against which to measure tax expenditures can change significantly. Harmful air emissions is one of the important reasons why countries implement environmentally related taxes, though other externalities, like traffic congestion[8] and noise pollution, also sometimes motivate taxes (supplementing their motivation as a means to raise revenue for public purposes). Through excise taxes, countries can place a price on environmental damage, thereby encouraging a more socially optimal level of emissions, which would be lower than without taxation. Under this approach, such taxes are levied in addition to taxes needed for general revenue raising.

In practice, the pursuit of optimal taxation (that is, the level of taxation that accounts for all externalities, efficiency effects, the revenue raising needs of government, and the interaction of these effects on the overall economy) is complicated. Quite apart from essentially normative issues such as determining revenue needs, countries would need extensive analytical work to determine optimal tax rates, which would vary significantly over time, and across users, locations and fuels. A further complicating factor is that the externalities may vary in scale among uses of fossil fuels, as many of them may be unrelated to the emission of greenhouse gases (e.g. local air pollution such as emissions of particulate matter or NO_X). For these reasons, in practice externalities are not commonly considered in

8 Excise taxes on fuel are, at best, an indirect way to reduce congestion, which is a phenomenon that has more to do with the time of day when a vehicle is being driven, and where it is being driven, than with the act of consuming fuel in a vehicle *per se.*

establishing tax-expenditure baselines. Nevertheless, it is an important concept to consider as work continues on consideration of how tax systems can influence market decisions regarding the production and consumption of fossil fuels.

Importance of tax system context

Whatever baseline is chosen against which to measure tax expenditures, it is important to consider the overall taxation system. Since most countries do not have theoretically pure tax systems, there are sometimes tax features that may seem to support fossil fuels, but which are in fact a mechanism to compensate or correct for other features of the system. Similarly, a feature of the tax system that may be considered a tax expenditure in one country may not be a tax expenditure in another country, given differing overarching systems in which fossil fuels are taxed.

On the production side, for example, the taxation of natural-resource extraction is, as noted, a complex area that goes beyond normal corporate taxation. Countries use varying approaches, such as royalty systems, resource-rent taxes, and cash-flow taxes to tax the super-normal profits that can be associated with resource extraction and ensure a fair return to the public when publicly-owned resources are sold. All of these issues must be taken into account when assessing any particular feature of a tax system.

- For example, immediate expensing of capital expenses for an oil company may be a tax expenditure under a standard corporate income tax, but would likely not be considered a tax expenditure under a cash-flow based tax regime, where immediate expensing of capital and non-deductibility of financing charges (such as interest payments) would be considered neutral.
- Again, lower royalty rates on less productive or more costly fields may arguably be "tax expenditures" in that they represent a concession relative to standard rates. On the other hand, they may be rough ways of taking into account higher costs and lower margins in systems that otherwise would over-tax (and therefore potentially render uneconomic) economically marginal projects (which generate little or no economic rent). In a fiscal system designed for rent capture, varying royalty rates may be the norm.
- As with tax expenditures, resource royalty concessions are not indicative of the overall level of royalties in a country. For example, a country could increase resource royalty rates across the board, while simultaneously introducing a special credit to reflect cost increases in a particular subsector. Assuming the credit were reported as a royalty concession (equivalent to a tax expenditure), it would be included in the inventory of support even though the two changes together resulted in an increase in the overall level of royalties. This treatment is consistent with the purpose of the inventory in highlighting cases where more favourable treatment is provided for one sector or group relative to the norm under a specifically identifiable concession. It is intended to facilitate discussion about the purpose and impact of such concessions. As with relief from excise duties and carbon taxes, the support provided by particular royalty concessions needs to be considered in the broader context of the fiscal system of which it forms a part.

As with relief from excise duties and carbon taxes, this is an area in which detailed knowledge of the tax regime is needed to establish whether there are indeed tax expenditures and, if so, how they should be quantified.

The hypothecation or ear-marking of taxes to fund specific public expenditures – making the tax a kind of user charge – is an issue that involves similar complexity. Other complications can arise where countries have allowed some reductions in a tax on fossil-fuel inputs to a production process and the scale of these rebates reflects the degree of exposure of

an industry to international competition or the deployment of other policy instruments to reduce emissions (as has occurred with some carbon taxes and emission-trading systems).

Measuring tax expenditures

Even when the baseline is clear, countries use different ways to measure the extent of the tax expenditure.

- The *revenue foregone* method, the most straightforward, looks at the rate of the tax concession multiplied by the base or uptake. For example, a reduced rate of EUR 0.25 per litre of diesel for taxis from a normal tax rate of EUR 0.45 per litre would yield annual tax expenditures of EUR 180 million if taxi drivers used 900 million litres of fuel a year.
- The *revenue gain* method estimates the increase in government revenues expected to be realised if the tax expenditure were eliminated, thereby incorporating anticipated behavioural changes. Using the same example, the tax expenditure under this method would be the difference in tax rates – EUR 0.20 as before – multiplied by the expected use of fuel by taxi drivers. Under this method, the use will be below 900 million litres, since raising the tax rate will likely encourage some people to no longer take taxis, assuming at least some of the cost is passed through to the users. Therefore, the quantity may only be 800 million litres, leading to a lower tax-expenditure estimate. In the context of climate-change discussions, the extent of the behavioural change is in fact of considerable interest, since the impact of reforming tax expenditures relating to fossil fuels on greenhouse-gas emissions is a key motivation of the exercise. However, such behavioural changes can also be incorporated at a later stage in the analysis, but require the use of models.
- The *expenditure equivalent* method estimates the level of funding that would be needed to meet the same outcome using a spending programme. In the previous example, it would estimate what level of direct subsidy would be needed to maintain the level of taxi drivers' income if the tax expenditure were eliminated. Since most direct government payments are taxed (whereas some benefits provided through preferential tax rates are not), the expenditure equivalent will tend to be larger than the tax expenditure measured by either the revenue foregone or the revenue gain method.

Measures that defer payment of tax without changing the ultimate nominal tax liability are another source of valuation differences across tax-expenditure accounts. A common example is accelerated depreciation allowances for capital investments. By allowing the cost of capital assets to be deducted more quickly than they would under the benchmark system, these provisions result in higher deductions and lower taxes in the early years in the life of a particular investment, but lower deductions and higher taxes in the later years of the investment. There are two main approaches to estimating the tax expenditure associated with such measures. The *nominal cash flow approach* measures the extent to which taxes in a particular year are higher or lower as a result of the accelerated allowance than they would have been in its absence. This measure is normally negative in the early years of an investment (indicating a positive tax expenditure) and higher in the later years. In contrast, the *present value approach* measures the discounted value of the time series of annual cash-flow tax expenditures, normally estimated from the time at which the asset is purchased. The two approaches both provide useful information, but they are quite distinct and not directly comparable.

Whichever valuation approach is used, countries typically calculate the value of each tax expenditure on the assumption that all other provisions remain unchanged. Due to interactions and behavioural responses, the revenue impact of eliminating multiple measures is not

necessarily equal to the sum of the individual values. Great caution is therefore required in adding together estimates of multiple measures.

International comparability

Tax-expenditure accounting was not designed with international comparability in mind. The estimates reported in this inventory provide useful information about the relative treatment of different products *within* a national tax system and the economic incentives created for actors in that system. In the absence of a common benchmark, however, tax-expenditure estimates are not readily comparable across countries. Even where countries have adopted broadly the same methodological approach, the way in which they have implemented it in response to practical issues, such as how far a relief should be regarded as a structural part of the tax regime, may well differ (e.g. depreciation allowances used in calculating taxable profits).

A fundamental limitation on comparability is differences among countries in the definition of the benchmark tax system. For this reason, a simple cross-country comparison of tax expenditures can lead to a misleading picture of the relative treatment of fossil fuels.

- For example, assume that Country *X* and Country *Y* both consider their tax rate on petrol to be the benchmark rate for transportation fuel. Country *X* taxes petrol at EUR 1.0/L and diesel at EUR 0.6/L, resulting in a EUR 0.4/L tax expenditure for diesel. In contrast, *Y* taxes both petrol and diesel at EUR 0.4/L. *X* therefore reports a significant tax expenditure relating to diesel, while *Y* reports no tax expenditure, even though *Y*'s tax rate on diesel is significantly lower than *X*'s.

In light of these factors, tax-expenditure estimates must be used carefully. The fact that a particular country reports higher tax expenditures relating to fossil fuels than another does not necessarily mean that the first country effectively provides a higher level of support. The higher tax expenditures may simply be due to factors such as:

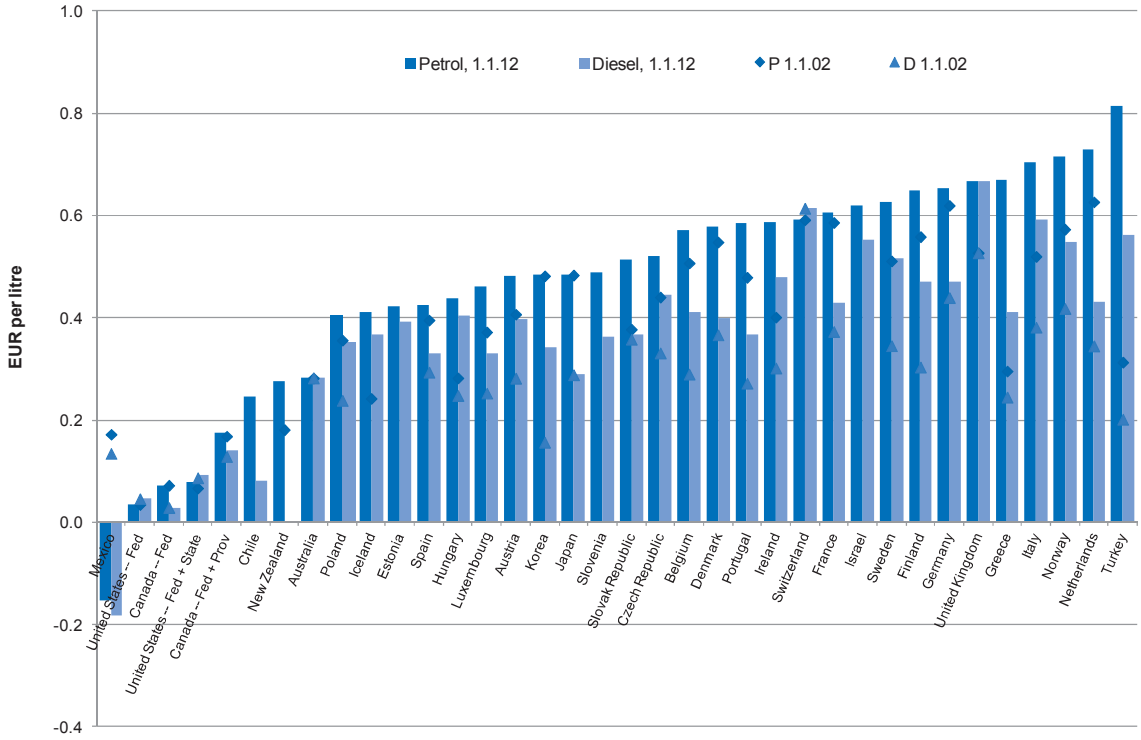
- Higher benchmark tax rates against which tax expenditures are measured;
- A stricter definition of the benchmark tax system that results in more features being singled out as tax expenditures; or
- A more complete set of tax-expenditure accounts.

Higher reported tax expenditures for some countries thus may reflect higher levels of taxation or greater transparency in reporting rather than a higher level of "support".

The bottom line is that national tax expenditure estimates can only be considered in the broader context of the particular tax system of the country in question. With this in mind, the OECD has work underway that aims to place national tax expenditures related to fossil-fuel consumption in context by illustrating the structure of fuel taxation in each OECD country. This work will facilitate dialogue about energy use in each country, the objectives of fuel taxation, and how the structure and rates of taxes on different fuels and users of fuel may be influencing consumption decisions.

Meanwhile, given differences among countries in levels of reporting with respect to tax expenditures, the OECD encourages all countries to be open and transparent in the reporting of tax-system features that may encourage the production or consumption of fossil fuels. Greater transparency will facilitate ongoing analysis and dialogue about how government policies, including those with respect to taxation, affect the production and use of fossil fuels.

Figure 1.1. Tax rates on petrol (P) and diesel (D) in OECD countries (excluding VAT), as of 1 January 2002 (excluding VAT) and as of 1 January 2012



Notes: Average 2011 exchange rates are applied for all years.

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Source: OECD/EEA database on instruments for environmental policy, accessible at *www.oecd.org/env/policies/database*.

Overview and summary results

Overall, the inventory contains more than 550 measures, of which two thirds are tax expenditures and 59% are measures related to consumption. Producer measures account for a further 29%, with the remaining 12% consisting of general-services measures that either support producers as a whole (e.g. industry-wide R&D support) or that do not necessarily encourage current production or consumption of fossil fuels (e.g. budgetary outlays to rehabilitate old mining sites). Most measures seem to directly target the end-use of fossil fuels (48%) or their extraction (34%).[9] Fewer intervene at the transportation, refining, and processing stages along the supply chain. It should be stressed, however, that these percentages remain indicative only since the final beneficiaries of a given measure may differ from its initial recipients. As indicated earlier in this chapter, a distinction should be drawn

9 The percentage of measures intervening at the extraction stage (34%) exceeds the percentage of measures benefitting producers (29%) as some of the extraction measures belong to the GSSE category, e.g. R&D grants to develop new oil-recovery techniques or to improve geophysical data collection. Examples of measures that belong to the GSSE category but that do not intervene at the extraction stage would be R&D transfers in relation to coal liquefaction and oil refining.

between a measure's formal incidence and its real, economic incidence, with the latter depending in part on the value of the relevant supply and demand elasticities.

Bearing in mind the caveats that apply to tax-expenditure estimates (see previous section), it is estimated that the individual support measures inventoried here had an aggregate value on the order of USD 55-90 billion a year over the 2005-11 period. Caution is required, however, in interpreting the support amounts and in aggregating them. In particular, estimates for individual measures do not take into account interactions that may be involved if multiple measures were to be removed at the same time. The inventory nevertheless provides important and valuable information about the incentives created within each national economy. Figure 1.2 shows that, between 2005 and 2011, these incentives tended to benefit crude oil and other petroleum products (70% in 2011) more than coal (12%) and natural gas (18%) in absolute terms. This reflects to some extent the large share of oil in countries' total primary energy supply, along with the fact that petroleum products are now consumed in OECD countries mainly in transport, a usage which is more heavily taxed on average.

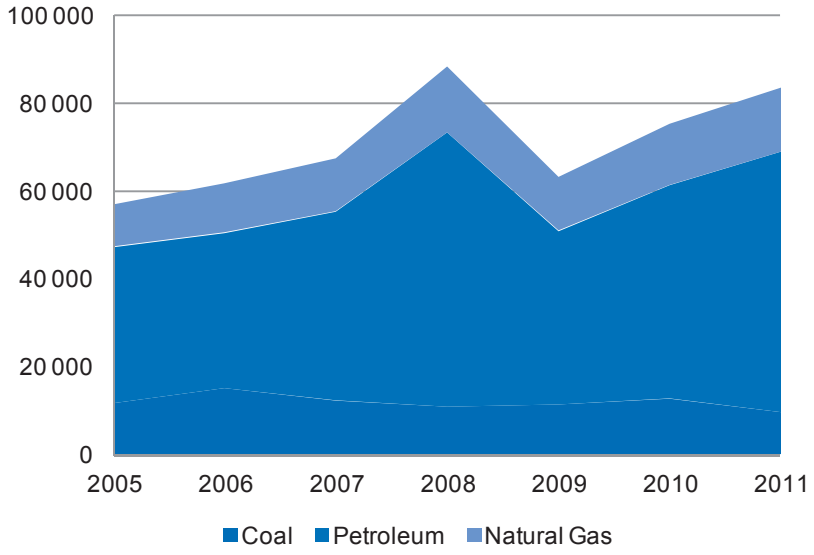
In terms of recipients, Figure 1.3 shows that, in absolute terms, measures relating to the consumption of fossil fuels accounted for more than two thirds of total support across the whole period (reaching a maximum of 80% in 2011); producer measures accounted for slightly more than a fifth on average. This difference in part reflects the fact that several major OECD countries included in the inventory do not produce fossil fuels on a significant scale but are important consumers (e.g. France, Italy, and Sweden). Producer support remains, however, significant in those countries that produce fossil fuels in sizable quantities.

While indicative, OECD-wide percentages do not provide a sense of the variety of situations that prevail at the country level, which in turn reflect the existing differences in countries' resource endowments, tax rates, etc. Figure 1.4 shows for each OECD member country[10] the shares of fossil-fuel support by type of fuel (coal, crude oil and petroleum products, and natural gas) and by indicator (PSE, CSE, GSSE). Unsurprisingly, the estimates for several OECD countries pertain exclusively to consumption, something that has much to do with geological factors and the decline in coal production observed throughout Europe. In the case of countries possessing abundant fossil resources, the share of producer support tends to be evidently higher, though the importance of idiosyncrasies calls for further caution and warrants a closer look at each country's characteristics, something which is done in the chapters that follow.

10 With the exception of Iceland, for which the OECD Secretariat was only able to identify one measure. Estimates were not available for this particular measure.

Figure 1.2. Support to fossil fuels in OECD countries by year and type of fuel

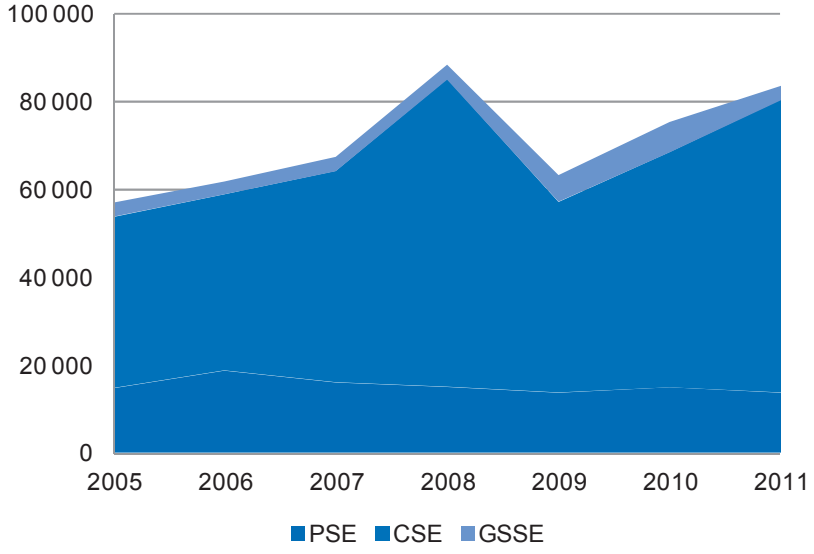
(Millions of current USD)



Note: The above charts are based on an arithmetic sum of the individual support measures identified for all 34 OECD member countries. It includes the value of tax relief measured under each jurisdiction's benchmark tax treatment. The estimates do not take into account interactions that may occur if multiple measures were to be removed at the same time.

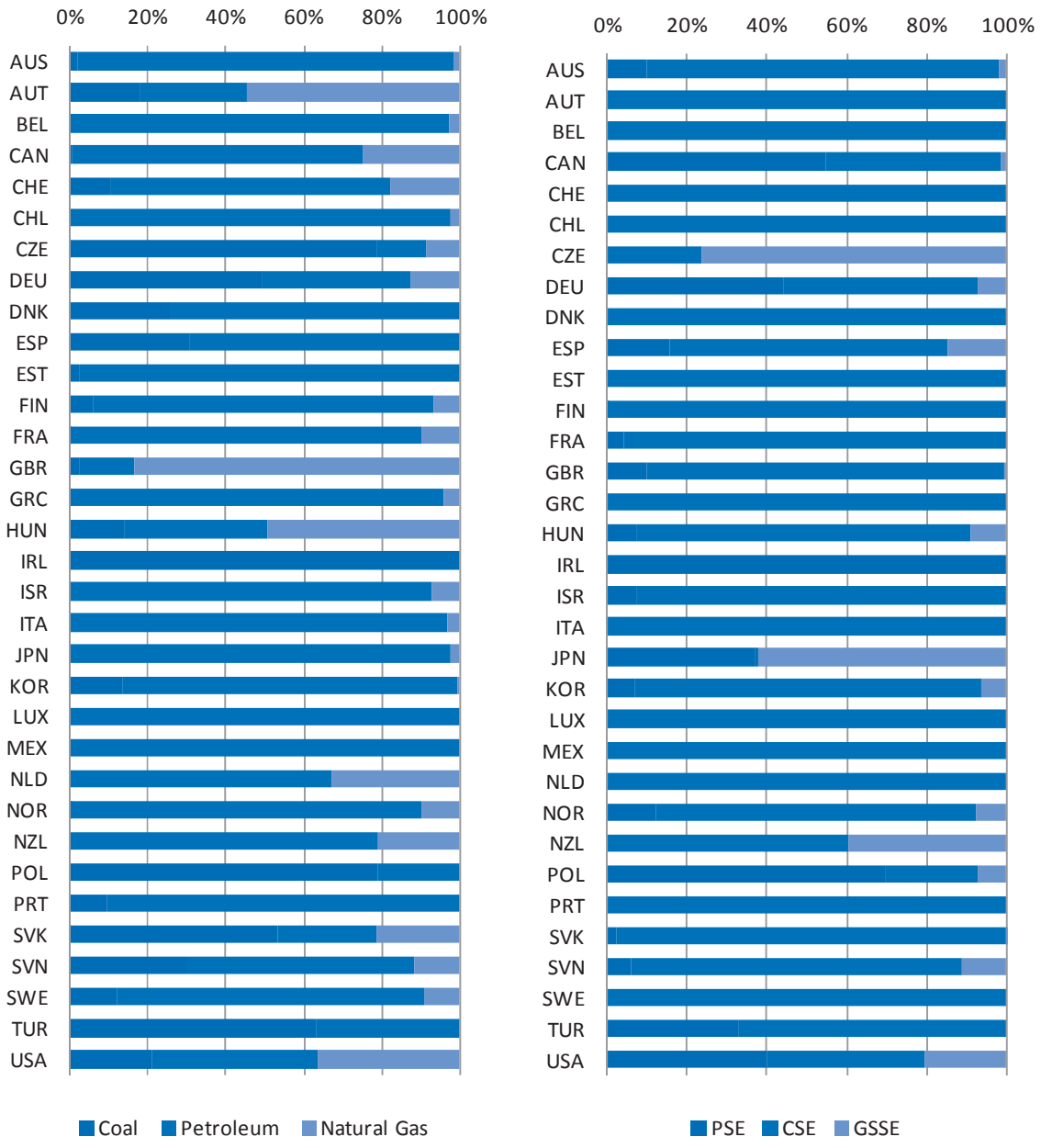
Figure 1.3. Support to fossil fuels in OECD countries by year and indicator

(Millions of current USD)



Note: The above charts are based on an arithmetic sum of the individual support measures identified for all 34 OECD member countries. It includes the value of tax relief measured under each jurisdiction's benchmark tax treatment. The estimates do not take into account interactions that may occur if multiple measures were to be removed at the same time.

Figure 1.4. Shares of fossil-fuel support by fuel and by indicator, 2009-11



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Chapter 2.

AUSTRALIA

This chapter identifies, documents, and provides estimates of the various budgetary transfers and tax expenditures that relate to the production or use of fossil fuels in Australia. An overview of the country's energy economy is first given to place the measures listed into context. A data-documentation section then describes those measures in a systematic way. Whenever possible, the description details a measure's formal beneficiary, its eligibility criteria and functioning, and the fuels whose production or use stand to benefit from the measure. The chapter ends with a set of tables that provide, subject to availability, quantitative information and estimates for the various measures listed.

Energy resources and market structure

Coal mining dominates Australia's energy production, with more than three-quarters of coal output going to export. Australia holds the fifth-largest coal reserve base in the world. It also produces and exports significant volumes of natural gas, the proven reserves of which have grown significantly in recent years with the discovery of large volumes of unconventional gas. The country is less well-endowed with oil resources; just under half of the country's oil is currently imported. Coal is the leading primary fuel in Australia's energy mix, accounting for 42% of total energy use; it is used mainly for power generation. Oil, with 32%, and natural gas, with 21%, meet most of the rest of the country's energy needs, while biomass, hydro-electric power and other sources of renewable energy make only a minor contribution. Well over half of the country's total energy production is exported.

Australia was a pioneer of energy market liberalisation in the 1990s. Early reforms involved the deregulation of its downstream oil sector and the coal-mining industry, the lifting of export controls on coal, the introduction of regulated third-party access to natural-gas and electricity networks, and the privatisation of some utilities owned by federal and state governments. Structural and regulatory reforms in the electricity and gas sectors have continued in recent years with the aim of creating efficient wholesale and retail markets.

Over 90% of Australian coal production is anthracite and bituminous (black) coal. The industry is located almost entirely in the states of New South Wales (NSW) and Queensland, with close to three-quarters of production coming from open-cast mines. The industry is wholly in private hands. Four major coal mining companies—Rio Tinto, BHP Billiton, Xstrata, and Anglo American—together account for well over half of total Australian black-coal production. Lignite (brown coal) is produced exclusively in the state of Victoria, almost all of it by three mines in the Latrobe Valley.

The oil industry is also entirely privately owned. The upstream sector is made up of small, medium and large companies, many of which are foreign-based. Refining is in the hands of four vertically integrated refiner-marketers: BP, Caltex, Mobil, and Shell. There are also independent fuel retailers, including supermarkets, some of which have established alliances with the refiners.

The natural-gas sector has undergone considerable change as a result of market expansion and reform. Many of the vertically integrated public gas utilities have been structurally disaggregated and the separated entities privatised. Energex, in Queensland, is the only major gas-distribution company still in state ownership. Retail competition is being progressively introduced in most jurisdictions.

The electricity sector has been unbundled into separate generating, transmission, distribution and marketing companies. There is a mixture of state-owned and private companies in power generation, transmission and distribution, while all marketers are privately owned. In South Australia (SA), state-owned assets are privately managed under long-term leases. The Snowy Mountains Hydro Electric Scheme, co-owned by the NSW and Victoria states, is the only company in which the Federal government holds a stake. Electricity transmission in Australia is open access. The Australian Energy Market Commission (AEMC) is responsible for determining rules and giving policy advice covering the national electricity market (NEM). The Australian Energy Regulator (AER) is responsible for rule enforcement for the NEM as well as economic regulation of transmission and distribution networks. Prices for most transmission assets in the NEM are set by AER, subject to a revenue cap, but it is also possible for new assets to be unregulated and earn market rates.

Prices, taxes and support mechanisms

With the exception of electricity and natural gas, energy prices are completely deregulated in Australia. Despite the introduction of contestability in retail markets, the electricity and gas for households and for small businesses that have not chosen to switch to a new supplier continue to be regulated on a cost-of-service basis. Victoria is the only state to have abolished retail price controls, in 2008. The other states plan to eliminate retail price regulation only when competition is well-established.

Upstream taxes in Australia consist mostly of the federal Petroleum Resource Rent Tax, which now applies to both offshore and onshore petroleum production, and of the new Mineral Resource Rent Tax that applies to coal and iron-ore projects. Downstream taxes comprise mainly the general Goods and Services Tax (GST) and excise taxes on motor fuels. GST—a type of VAT charged at each stage of production and distribution, currently at a rate of 10%—is applicable to sales of nearly all final energy products. All motor fuels are subject to a flat per-litre federal excise tax, though there are some exemptions. Liquefied petroleum gas (LPG), as well as liquefied and compressed natural gas, receives a complete exemption from the excise tax. In addition, domestic producers of biofuels (both ethanol and biodiesel) receive excise-tax rebates, which are also available to imported biodiesel.

From 1 July 2012, a carbon price will be applied to certain emission sources in Australia. The price will be fixed for the first three years starting at AUD 23 per tonne in 2012-13 and rising by 2.5% in real terms in each subsequent year. Beginning in July 2015, the carbon price will transition to a flexible price under an emissions trading scheme, with the price determined by the market. Industries subject to the carbon price include the stationary energy sector, sections of the transport sector, industrial processes, new large landfill waste facilities and fugitive emissions. A range of measures will provide assistance to households and industries (including AUD 1.6 billion for the steel and coal industries) and support research and development.

There are no longer any significant support measures in the upstream sector in Australia, following the removal in 2008 of a partial exemption from an excise tax normally levied on crude oil for condensate—a low-density mixture of hydrocarbon liquids contained in gaseous form in the raw natural gas produced from some gas fields. In the downstream sector, the principal support measure at the federal level other than differential taxation is the Fuel Tax Credits for Heavy Diesel Vehicles programme, which provides businesses operating heavy trucks a partial or full rebate on the fuel excise tax depending on the type of vehicle they drive and the sector in which they operate. Eligibility for the tax credit is conditional on satisfying certain environmental criteria. The federal government also runs a grant scheme for consumers who convert their gasoline cars to LPG, though the government announced that it would cap the number of grants to be issued for three years.

Some states and territories also provide support for the production and consumption of fossil fuels. The Northern Territory (NT), NSW, SA, and Western Australia (WA) all provide programmes that encourage hydrocarbon exploration. The federal government and the states of NSW and Queensland have also funded transport infrastructure related to coal and R&D projects in relation to clean-coal technologies. Meanwhile, NSW and Queensland have financed the rehabilitation of derelict mining sites, including coal mines.

On the consumption side, most Australian states and territories provide some form of rebates to low-income households to assist them with the costs of energy. In the road-transport sector, the period between 1997 and 2011 saw all states and territories providing support in one form or another for certain uses of gasoline and diesel fuel. Prior to 1997, states used to set their own excise taxes on fuel, often in the form of business license fees.

Exemptions and reductions thus varied among jurisdictions. However, in 1997, Australia's High Court found state-level excise taxes to be unconstitutional. To compensate states for the resulting loss in revenues, the federal government increased its nationwide fuel excise tax and returned the corresponding additional revenues to the states. These arrangements ceased in 2000 as part of agreed national tax reforms. However, some states and territories continued to provide fuel subsidies for several years on until all remaining state-level schemes were eventually phased out in 2011.

Data documentation

General notes

The fiscal year in Australia runs from 1 July to 30 June. Following OECD convention, data are allocated to the starting calendar year so that data covering the period July 2005 to June 2006 are allocated to 2005.

Since Australia is a federal country, the data collection exercise was also conducted for the following states and territories: the Australian Capital Territory (ACT), New South Wales (NSW), Northern Territory (NT), Queensland (QLD), South Australia (SA), Tasmania (TAS), Victoria (VIC), and Western Australia (WA).

Federal government

Producer Support Estimate

The offshore extraction of oil and natural gas in Australia is subject to a particular tax regime that combines a resource tax and the regular corporate income tax. The Petroleum Resource Rent Tax (PRRT) was introduced with the Petroleum Resource Rent Tax Assessment Act of 1987. It is project-based and applies to taxable profits at the rate of 40%.[1] PRRT rules allow for the full deduction of exploration, development, and decommissioning expenditures. Financing costs are, however, not deductible for PRRT purposes. Unclaimed deductions can be carried forward and compounded every year at varying rates. Some of these deductions can also be transferred to other projects within the same company or group.

The general corporate income-tax rate in Australia is 30% and deductions are allowed for PRRT payments, business expenses, and exploration costs related to mining (including coal) and oil and gas extraction. Some expenses related to mine rehabilitation and the removal of offshore platforms are also deductible for income-tax purposes.

The immediate write-off of both capital and exploration-and-development expenditures is normally considered under the systems in many countries to amount to a preferential tax treatment. The reason is that in calculating taxable profits in most income-tax systems, capital expenses are allocated over the period to which they contribute to earnings. Allowing the immediate writing-off these types of expenditure therefore provides companies with something akin to a zero-interest loan from the government since it delays the collection of taxes. A present-value calculation would indeed show a positive transfer from the government to the companies benefiting from such provisions.

1 Some offshore areas like the North West Shelf were until recently still subject to the old royalty and crude-oil excise regime, or to production-sharing contracts. However, legislation newly enacted by the Australian government now provides for the extension of the PRRT regime to all onshore and offshore oil and gas projects by 1 July 2012.

However, when combined with an impossibility for companies to deduct interest costs and other financing charges, the immediate write-off of both capital and exploration-and-development expenditures may not be considered a preferential tax treatment. This is due to the fact that this particular combination of tax provisions may approximate what is known as a "cash-flow" tax system. Cash-flow tax systems can be theoretically equivalent to the more common imputed-income tax systems where the objective is to levy a neutral business tax (Boadway and Bruce, 1984). For that reason, provisions such as the expensing of exploration and development costs may not be preferential tax provisions in the particular case of the Australian PRRT.

The Australian government recently enacted legislation to change its resource taxation regime effective on 1 July 2012. Changes include the creation of a new Mineral Resource Rent Tax (MRRT) that will apply a 30% rate on taxable profits from all new and existing iron-ore and coal projects, and extension of the PRRT regime to all onshore and offshore oil and gas projects.

Cleaner Fuels Grants Scheme (data for 2005-2009)

This programme was initially designed to support the manufacturing and importing of biodiesel only but was then extended to ultralow-sulphur diesel and premium unleaded petrol starting in FY 2005/06. A breakdown by fuel is available from the Australian Taxation Office so that only payments related to premium unleaded petrol and ultralow-sulphur diesel are being reported here. Support for premium unleaded petrol stopped on 31 December 2007.

Sources: Australian Taxation Office (various years).

Tag: AUS_dt_03

Accelerated Depreciation for Mining Buildings (data for 1994-2008)

The programme is reported as having started in 1982 and was phased out in 2001. It was, however, still giving rise to a significant positive tax expenditure in 2009 as assets acquired years ago kept on depreciating faster relative to their effective life. The concession allows companies to depreciate buildings used in the mining and quarrying sector over ten years or the life of the project, whichever is shorter.

Because this measure applies to both mining and quarrying, for this and similar measures, we deduct from the annual amounts reported in official tax-expenditure documents the estimated share associated with mining output that is not concerned with fossil fuels. This is done using data on the gross value of minerals produced from ABARES on the assumption that the tax expenditure is evenly distributed across sub-sectors according to gross output. The resulting amounts are then allocated to the various types of fossil fuels (i.e. crude oil, natural gas, and coal) using production data from ABARES and the IEA.

Sources: Australian Treasury (various years), ABARES, IEA.

Tag: AUS_te_02

Capital Expenditure Deduction for Mining, Quarrying and Petroleum Operations (data for 1994-2011)

The programme dates back to 1921 and was phased out in 2001. It was very similar to the concession for the accelerated depreciation of mining buildings (see above), the only difference being that it applied to certain other types of capital expenditure.

Since this measure applies to the mining sector as a whole, we deduct from the annual amounts reported in official tax-expenditure documents the estimated share associated with mining output that is not concerned with fossil fuels. This is done using data on the gross value of minerals produced from ABARES. The resulting amounts are then allocated to the various types of fossil fuels (i.e. crude oil, natural gas, and coal) using production data from ABARES and the IEA.

Sources: Australian Treasury (various years), ABARES, IEA.

Tag: AUS_te_03

Infrastructure Bonds Scheme – Transport (data for 1996-2008)

This programme started in 1992 under the aegis of the Development Allowance Authority. It was aimed at encouraging investment in infrastructure projects through the issuance of Develop Australia Bonds (i.e. Infrastructure Bonds) that provided lenders with tax-deductible interest payments. Although part of the concession targeted water and transport infrastructure, the rest was earmarked for gas and electricity projects, such as co-generation plants or natural-gas pipelines. The programme was terminated in 1997 and replaced with the Infrastructure Borrowings Tax Offset Scheme. However, deductions were still being claimed as of 2008.

Data from the Development Allowance Authority annual reports were used to roughly estimate the shares of reported tax expenditures that are attributable to gas infrastructure and power plants. We treat those two components of the scheme as separate programmes since one relates to the supply of fossil fuels while the other relates to the use of fossil fuels in power generation.

The gas infrastructure part is said to represent around 16% of all projects. Since it is excludable and benefits few natural-gas producers, the programme is included in the PSE and is allocated to natural gas only.

Sources: Development Allowance Authority (various years), Australian Treasury (various years), Parliament of Australia (1997).

Tag: AUS_te_07

Infrastructure Borrowings Tax Offset Scheme – Transport (data for 1997-2007)

The Infrastructure Borrowings Tax Offset Scheme (IBTOS) is very similar to the Infrastructure Bonds Scheme it was meant to replace back in 1997. One major difference is that IBTOS features a lower cap on annual expenditures (AUD 75 million). New infrastructure projects stopped being accepted as of May 2004, however. The estimation method follows that of the Infrastructure Bonds Scheme (see above), meaning that we break IBTOS into two separate programmes using rough project-type shares from the Development Allowance Authority's annual reports.

Sources: Development Allowance Authority (various years), Australian Treasury (various years), Parliament of Australia (1997).

Tag: AUS_te_09

Exemption from Crude-Oil Excise for Condensate (data for 2001-2011)

This concession was introduced in 1977 and exempts condensate[2] from the excise tax that is normally levied on crude-oil production taking place outside the PRRT framework. Although the exemption was abolished in 2008, condensate remains subject to a lower rate than that applied to fields discovered prior to September 1975, which is the Treasury benchmark. The measure therefore continues to yield positive and significant tax expenditures.

Legislation recently enacted by the Australian government provides for the taxation of petroleum condensate under the PRRT's revised natural-resources tax benchmark starting on 1 July 2012. This change would in effect remove the tax expenditure associated with the exemption of condensate from crude-oil excise.

Estimates are not available for the years preceding 2001.

Sources: Australian Treasury (various years).

Tag: AUS_te_11

Exploration and Prospecting Deduction (data for 2006-)

This provision was introduced in 1968 and allows mining and quarrying companies to deduct exploration and prospecting expenses in full in the year in which they are incurred for income-tax purposes. The measure does not pertain to the PRRT regime.

Since this measure applies to the mining sector as a whole, we deduct from the annual amounts reported in official tax expenditure documents the estimated share associated with mining exploration that is not concerned with fossil fuels. This is done using data on exploration expenditure by type of mineral from ABS. The resulting amounts are then allocated to the various types of fossil fuels (i.e. crude oil, natural gas, and the various types of coal) using production data from ABS and the IEA.

Sources: Australian Treasury (various years), ABS, IEA.

Tag: AUS_te_13

Increased Deduction for Petroleum Exploration Expenditure (no data available)

This provision was introduced in 2004 to encourage exploration in designated, remote offshore areas. It allowed oil and gas companies to deduct as much as 150% of qualifying exploration costs incurred in a given year. The benchmark PRRT deduction for such costs is 100%. This 50% uplift expired in 2009.

No estimates of the revenue foregone due to the cost uplift for exploration expenditure are available.

Sources: Australian Treasury (various years).

Expenditure Uplift Rate (no data available)

This measure forms part of the PRRT regime. It was introduced in 1990 to provide oil and gas producers with uplifts on certain qualifying expenditures, thereby increasing the amounts they can deduct from taxable profits for PRRT purposes. Rates of uplift vary with the type of expenditure to be deducted and the time at which it was incurred.

2 Condensate is only subject to the petroleum production excise tax when marketed jointly with crude oil.

No estimates of the revenue foregone due to the expenditure uplift are available.

Sources: Australian Treasury (various years).

Consumer Support Estimate

Diesel and Alternative Fuels Grants Scheme (data for 2000-2002)

The Diesel and Alternative Fuels Grants Scheme (DAFGS) was introduced in 2000 as part of the *A New Tax System* initiative before it became part of the EGCS (i.e. the former version of the Fuel Tax Credits) starting in 2003. For that reason, reporting stops around that time and the EGCS thereupon includes both DFRS and DAFGS payments (see also "Fuel Tax Credits" below). The DAFGS gives certain on-road users a grant aimed at cutting the fuel costs they have incurred.

Although the EGCS is a tax expenditure, only its former DFRS component used to specifically offset fuel excise taxes. The DAFGS is therefore reported as a budgetary transfer.

Sources: Australian Taxation Office (various years), Australian Treasury (2001), Webb (2000, 2001).

Tag: AUS_dt_01

Fuel Sales Grants Scheme (data for 2000-2007)

This programme was introduced in 2000 as part of the *A New Tax System* initiative to compensate certain areas of the country for the introduction of a federal, harmonised Goods and Services Tax (the so-called GST). The measure targeted fuel retailers in remote and regional areas before being subsequently phased-out in 2006. As a rough approximation, we allocate 90% of the payments to diesel and 10% to gasoline given that the scheme overwhelmingly benefitted producers of primary commodities.

Sources: Australian Taxation Office (various years), Australian Treasury (2001), Webb (2000, 2001).

Tag: AUS_dt_02

Petroleum Products Freight Subsidy Scheme (data for 2001-2005)

This programme was put in place in 1965 and granted assistance to fuel distributors selling eligible petroleum products in remote areas of the country. It was phased out in 2006. Few details are now available, but it seems that the programme used to provide fixed annual payments totalling AUD 3.5 million (at least in the last years). For that reason, we report the same value for every missing year starting with the first observation available (2001).

Eligible fuels include gasoline, diesel, and kerosene-type jet fuel. Accordingly, we allocate the annual amounts reported to gasoline, diesel fuel, and kerosene-type jet fuel on the basis of the IEA's Energy Balances for the transport sector (excluding maritime and international air transport).

Sources: Australian Treasury (2001), IEA.

Tag: AUS_dt_12

Fuel Tax Credits (data for 1994-)

This programme dates from 1982 when the Commonwealth Government decided to replace the old exemption certificate scheme — prone to abuse — with a new Diesel Fuel Rebate Scheme. The scheme subsequently went through several changes in terms of coverage and rates, being first renamed the Energy Grants Credit Scheme in 2003, before it was given its current name in 2006. It provides eligible users with a partial or full rebate

on the fuel excise tax, depending on the type of vehicle they drive and the sector in which they operate.

The mining sector is eligible for the Fuel Tax Credits programme, which results in this measure supporting both the extraction and the consumption of fossil fuels. However, given the relative importance of those two components, only the consumption side is here considered. The measure thus forms part of the CSE.

The annual amounts reported under the Fuel Tax Credits also include those reported under the Diesel and Alternative Fuels Grants Scheme starting in 2003, and those reported under the Energy Grants Credits Scheme (on-road) starting in 2006.

Sources: Australian Taxation Office (various years), Australian Treasury (2001), Webb (2000, 2001).

Tag: AUS_te_01

Reduced Excise Rate on Aviation Fuel (data for 1996-)

Consumers of aviation gasoline and aviation turbine fuel have benefitted from a reduced rate of excise tax since March 1956. The Australian Treasury includes this concession in its annual Tax Expenditures Statement where only the part that relates to domestic flights is reported. The planned introduction of a carbon-pricing mechanism in Australia on 1 July 2012 will result in an increase in the rate of excise tax levied on aviation fuels.

Although this measure relates to both aviation gasoline and kerosene-type jet fuel, consumption of the latter dwarfs the use of the former according to IEA data on Energy Balances for the domestic air transport sector. For that reason, we allocate the measure entirely to kerosene-type jet fuel.

Sources: Australian Treasury (various years), IEA.

Tag: AUS_te_04

Exemption from Excise for 'Alternative Fuels' (data for 1994-)

This concession was introduced in 1985 and exempts liquefied petroleum gas, liquefied natural gas, and compressed natural gas from the federal excise tax normally levied on sales of petroleum products in Australia.

We allocate annual amounts from the Australian Treasury to all three different fuels on the basis of the IEA's Energy Balances for the road transport sector.

Sources: Australian Treasury (various years), IEA.

Tag: AUS_te_05

Reduced Excise Rate on Heating Oil, Fuel Oil and Kerosene (data for 1996-2006)

The Australian Government began levying an excise tax on heating oil, fuel oil and kerosene in 1983. However, these fuels remained subject to a much lower rate when used other than in an internal combustion engine. This lasted until 2006, when tax rates were then set high enough to match those applying to regular petroleum products. This rise was, however, paralleled by the introduction of an equivalent rebate that in effect nullifies the incidence of excise. Starting in 2006, annual estimates for this rebate are being reported as part of the Fuel Tax Credits (see above).

We allocate annual amounts from the Australian Treasury to all three different fuels on the basis of the IEA's Energy Balances for the residential sector and the commercial services sector.

Sources: Australian Treasury (various years), IEA.

Tag: AUS_te_06

Infrastructure Bonds Scheme – Power Generation (data for 1996-2008)

Like the Infrastructure Bonds Scheme for transport (see above), this programme started in 1992 under the aegis of the Development Allowance Authority. It was aimed at encouraging investment in infrastructure projects through the issuance of Develop Australia Bonds (i.e. Infrastructure Bonds) that provided lenders with tax-deductible interest payments. Although part of the concession targeted water and transport infrastructure, the rest was earmarked for natural-gas and electricity projects such as co-generation plants or gas pipelines. The programme was terminated in 1997 and replaced with the Infrastructure Borrowings Tax Offset Scheme. However, deductions were still being claimed as of 2008.

Data from the Development Allowance Authority annual reports were used to roughly estimate the shares of reported tax expenditures that are attributable to gas infrastructure and power plants. We treat those two components of the scheme as separate programmes since one relates to the supply of fossil fuels while the other relates to the use of fossil fuels in power generation.

The power generation part is said to represent around 23% of all projects. Though it appears under the "Electricity" heading, virtually all examples of power generation projects financed through the scheme are gas-fired cogeneration plants. Taxpayer privacy arrangements make access to a full listing of the projects and the associated costs impossible, hence the entire value of the scheme was allocated to natural gas as a rough approximation.

Sources: Development Allowance Authority (various years), Australian Treasury (various years), Parliament of Australia (1997).

Tag: AUS_te_08

Infrastructure Borrowings Tax Offset Scheme – Power Generation (data for 1997-2007)

The Infrastructure Borrowings Tax Offset Scheme (IBTOS) is very similar to the Infrastructure Bonds Scheme it was meant to replace back in 1997. One major difference is that IBTOS features a lower cap on annual expenditures (AUD 75 million). New infrastructure projects stopped being accepted as of May 2004, however. The estimation method follows that of the Infrastructure Bonds Scheme (see above), meaning we break IBTOS into two separate programmes using rough project-type shares from the Development Allowance Authority's annual reports.

Sources: Development Allowance Authority (various years), Australian Treasury (various years), Parliament of Australia (1997).

Tag: AUS_te_10

General Services Support Estimate

Clean Coal Fund (data for 2007-)

In 2008 the Australian government established a AUD 500 million National Clean Coal Fund to support research, technology development, demonstration projects, CO2 storage

sites, and associated infrastructure in relation to clean coal. The fund will operate until 30 June 2012.

This programme is allocated to the GSSE since it benefits Australia's coal sector as a whole and does not increase current production or consumption of fossil fuels. We allocate annual budgetary transfers to the different types of coal on the basis of production data from the IEA's Energy Balances.

Sources: Australian Government (various years), IEA.

Tag: AUS_dt_29

Australian Capital Territory

Consumer Support Estimate

[Australian Capital Territory] ACT Energy Concession (data for 2004-2007 and 2011)

The FY2004/05 budget for the Australian Capital Territory introduced a new energy concession to replace the state's former electricity concession and combine it with a new one for natural gas. This new concession is provided through electricity and gas retailers.

Data are not available for the years 2008 to 2010. We estimate the share of payments that is attributable to natural gas on the basis of the IEA's Energy Balances for the residential sector.

Sources: Australian Capital Territory Government (various years), IEA.

Tag: AUS_dt_25

New South Wales

Consumer Support Estimate

[New South Wales] Petroleum Products Subsidy Scheme (data for 1999-2008)

The state of New South Wales imposed petroleum license fees on both wholesalers and retailers until 1997, at which time state-level excise taxes on fuel were found to be unconstitutional and banned by Australia's High Court. Because the off-road use of diesel fuel had not been subject to NSW's license fees prior to 1997, and to compensate users for the introduction of a higher federal excise tax on fuel, the state of NSW started providing subsidies for off-road users of diesel. These subsidies were, however, abolished in July 2000 as part of a nationwide tax reform.

The NSW government also provided fuel subsidies to five geographic zones along the Queensland border to ensure that NSW retailers could compete with Queensland's (see Queensland Fuel Subsidy Scheme). The amount of the subsidy ranged from AUD 0.0167 per litre to AUD 0.0835 per litre, with the subsidy being highest in zones closer to the Queensland border. In the rest of NSW, including Sydney, no subsidy was payable. NSW's Petroleum Products Subsidy Scheme was abolished in July 2009 following the termination of the Queensland scheme.

We use state-level data from DRET on annual sales of petroleum products in New South Wales to allocate the annual amounts reported in budget documents to gasoline and diesel fuel.

Sources: New South Wales Government (various years), Office of State Revenue (2009), DRET.

Tag: AUS_dt_18

[New South Wales] Energy Accounts Payment Assistance Scheme (data for 2003-2007)

The Energy Accounts Payment Assistance (EAPA) Scheme helps low-income households pay their electricity and natural-gas bills in cases of crises or emergency situations. The scheme operates through a voucher system, where each voucher is worth AUD 30. The number of vouchers available each year is capped at 16 vouchers (AUD 480) per recipient. Bottled LPG is not covered under this scheme.

From FY2008/09 onwards, NSW budget documents only report a single number under "energy concessions." Estimates are therefore only available up to FY2007/08. We estimate the share of payments that is attributable to natural gas on the basis of the IEA's Energy Balances for the residential sector.

Sources: New South Wales Government (various years), IEA.

Tag: AUS_dt_26

General Services Support Estimate

[New South Wales] NSW Clean Coal Fund (data for 2009-)

In FY2008/09 the state of New South Wales allocated AUD 100 million to a Clean Coal Fund to research, develop, and demonstrate clean-coal technologies, and conduct advocacy in relation to these technologies.

This programme is allocated to the GSSE since it benefits NSW's coal sector as a whole and does not increase current production or consumption of fossil fuels.

Sources: New South Wales Government (various years).

Tag: AUS_dt_30

[New South Wales] NSW Derelict Mines Program (data for 2000-)

The state of New South Wales provides annual funding to Industry and Investment NSW (a government agency) to undertake rehabilitation works through the Derelict Mines Program. Derelict mines are former mining sites that require rehabilitation given the risk they pose in terms of land subsidence, and for which no individual or company can be held liable. The programme was initially started in 1974 and is still ongoing.

This measure is allocated to the GSSE as it does not increase current production or consumption of hard coal. Because it applies to NSW's mining sector as a whole, we deduct from the annual amounts reported in official budgetary documents the estimated share associated with mining production that is not concerned with coal. This is done using state-level data on mining output by type of mineral from ABS.

Sources: New South Wales Government (various years), ABS.

Tag: AUS_dt_31

[New South Wales] Exploration NSW (data for 2000-2006)

The Exploration NSW programme was launched in July 2000 as a seven-year AUD 30 million initiative to promote mineral and petroleum exploration in the state of New South

Wales. The programme funded geophysical surveys, data compilation, mapping, data interpretation, and data delivery.

This programme is allocated to the GSSE since it benefits NSW's mining sector as a whole and does not increase current production or consumption of fossil fuels. Because two thirds (17) of the total 23 projects fall under the petroleum programme, we allocate 66% of all spending to oil and natural gas. We use data on state-level exploration expenditure from the Australian Bureau of Statistics to separate the remaining 33% between coal and non-energy minerals.

Sources: New South Wales Government (various years), ABS, IEA.

Tag: AUS_dt_13

[New South Wales] New Frontiers (data for 2006-2011)

The New Frontiers programme enhances the earlier Exploration NSW initiative by providing additional funding until FY2011/12 to encourage further exploration of New South Wales's mineral and hydrocarbon resources. As with Exploration NSW, this programme does not fund exploration directly but contribute to providing geophysical data and mapping, which are then used by mining companies.

This programme is allocated to the GSSE since it benefits NSW's mining sector as a whole and does not increase current production or consumption of fossil fuels. Personal communications with staff at NSW's Department of Industry and Investment suggest that between AUD 1 million and AUD 1.5 million of the programme's total funding are dedicated each year to projects directly related to petroleum. We therefore choose to report a conservative estimate of AUD 1 million per year for petroleum. We use data on state-level exploration expenditure from the Australian Bureau of Statistics to separate the remaining amounts between coal and non-energy minerals.

Sources: New South Wales Government (various years), ABS, IEA.

Tag: AUS_dt_14

Northern Territory

Consumer Support Estimate

[Northern Territory] NT Off-Road Diesel Subsidy Scheme (data for 1998-1999)

Prior to 1997, the off-road use of diesel fuel in the Northern Territory attracted a rebate worth AUD 0.02 per litre. Following the 1997 High Court decision banning state-level excise taxes on fuel, the NT government started to grant a subsidy for the off-road use of diesel. It was at the time estimated that this subsidy cost AUD 11.3 million annually in 1998-99 terms. The scheme was subsequently phased out in 2000 as part of a nationwide tax reform.

Sources: Reed (1998).

Tag: AUS_dt_21

[Northern Territory] NT Fuel Subsidy Scheme (data for 2002-2008)

Between July 2000 and May 2009, the NT government provided a subsidy worth AUD 0.011 per litre to on-road users of gasoline and diesel fuel. Payments were made at the point of first sale in the Territory.

Data prior to 2002 are not available. Starting in 2002, a single budget line is provided that contains both the fuel subsidy and a federal home-owner grant. An estimate for the fuel subsidy was obtained by deducting from the budget line transfers from the federal government to the NT government for the home-owner grant using estimates from the federal government's budget.

We use state-level data from DRET on annual sales of petroleum products in the Northern Territory to allocate the annual amounts reported in budget documents to gasoline and diesel fuel.

Sources: Australian Government (various years), Northern Territory Government (various years), Reed (1998), DRET.

Tag: AUS_dt_22

General Services Support Estimate

[Northern Territory] Building the Territory's Resource Base (data for 2003-2006)

This programme was introduced in 2003 as a four-year, AUD 15.2 million initiative aimed to promote investment in mineral and petroleum exploration in Australia's Northern Territory. Funding was provided for sub-programmes concerned with geophysical data (the bulk of total funding), mapping, and application processes and permits for mining companies.

This programme is allocated to the GSSE since it benefits the NT's mining sector as a whole and does not increase current production or consumption of fossil fuels. We use data on state-level exploration expenditure from the Australian Bureau of Statistics to allocate annual budgetary appropriations to hydrocarbons and non-energy minerals, while only reporting here the estimates that pertain to fossil fuels.

Sources: Northern Territory Government (various years), ABS, IEA.

Tag: AUS_dt_16

[Northern Territory] Bringing Forward Discovery (data for 2007-)

The Bringing Forward Discovery programme is a four-year, AUD 12 million initiative that was introduced as part of the FY2007/08 budget for Australia's Northern Territory. It aims to extend the "Building the Territory's Resource Base" programme (see above) by providing additional funding for geophysical data, mapping, and application processes and permits for mining companies. Budgets for FY2008/09 and FY2011/12 subsequently increased funding by AUD 2.4 million and AUD 11.4 million respectively.

This programme is allocated to the GSSE since it benefits the NT's mining sector as a whole and does not increase current production or consumption of fossil fuels. The allocation of annual funding to fossil fuels and non-energy minerals was done based on personal communications with staff at NT's Department of Resources.

Sources: Northern Territory Government (various years), IEA.

Tag: AUS_dt_17

Queensland

Consumer Support Estimate

[Queensland] Queensland Fuel Subsidy Scheme (data for 1999-2009)

This measure started in 1997 and gave rise to significant annual transfers until it was phased out in July 2009. It was meant to compensate Queensland fuel users for the introduction of a federal excise tax on petroleum products, following the 1997 High Court decision banning state-level excise taxes (the state of Queensland did not levy any fuel excise tax at the time). Beneficiaries included bulk end users, some off-road diesel users, and fuel retailers who were thence expected to pass on the benefit to final consumers.

Values for the years 2000 and 2001 were linearly interpolated since the corresponding amounts could not be found in Queensland's budget documents. We use state-level data from DRET on annual sales of petroleum products in Queensland to allocate the annual amounts reported in budget documents to gasoline and diesel fuel.

Sources: Queensland Government (various years), DRET.

Tag: AUS_dt_04

[Queensland] Home Energy Emergency Assistance Scheme (data for 2007-)

This measure provides low-income households with emergency assistance in case they prove unable to pay their electricity and natural-gas bills. It does not, however, give rise to direct transfers to consumers since payments are made to energy companies.

We estimate the share of payments that is attributable to natural gas (about 37%) on the basis of the IEA's Energy Balances for the residential sector.

Sources: Queensland Government (various years), IEA.

Tag: AUS_dt_10

[Queensland] Reticulated Natural Gas Rebate (data for 2008-)

This programme, which was initially called the Gas Pensioner Rebate Scheme, was renamed the Reticulated Natural Gas Rebate in 2007. It provides the elderly in need with annual rebates on their natural-gas bills worth about AUD 55. Contrary to the Home Energy Emergency Assistance Scheme, payments are made directly to households and target natural gas specifically.

Sources: Queensland Government (various years).

Tag: AUS_dt_09

General Services Support Estimate

[Queensland] Collingwood Park Mine Subsidence Package (data for 2008-)

In April 2008 houses located on the site of a former coal mine in the state of Queensland were damaged when the ground subsided. Funding of AUD 10 million was allocated in the FY2008/09 state budget to repair homes, or purchase homes considered not economically repairable. In FY2009/10, a further AUD 5.6 million were allocated to cover the costs of additional home purchases and repairs. The FY2011/12 budget extended funding with AUD 3.2 million set aside to investigate the feasibility of a mine-filling programme in Collingwood Park. Normally, the mining industry would be held liable for damages associated with land subsidence.

This measure is allocated to the GSSE as it does not increase current production or consumption of coal. Estimates prior to 2008 could not be found. We allocate this measure entirely to hard coal.

Sources: DEEDI (2008).

Tag: AUS_dt_11

[Queensland] Queensland Rail's Coal and Freight Services (data for 2003)

The Queensland state budget for FY2003/04 directed AUD 94 million to Queensland Rail's Coal and Freight Services to upgrade and acquire rolling stock such as diesel locomotives. This funding supplemented capital expenditure by state-owned Queensland Rail of about AUD 615 million in FY2003/04.

This programme is allocated to the GSSE since it benefits QLD's hard-coal sector as a whole.

Sources: Queensland Government (various years).

Tag: AUS_dt_28

South Australia

Consumer Support Estimate

[South Australia] SA Fuel Subsidy Scheme (data for 1999-2010)

Early versions of this scheme date back to the 1980s when the state of South Australia introduced differential excise-tax rates on fuel that varied with the distance between fuel retailers and the Adelaide area. This was meant to reduce price disparities between urban and regional areas. This changed in 1997 when the state of SA introduced fuel subsidies in response to the High Court decision banning state-level excise tax on fuels. Eligibility was limited to on-road users of diesel and unleaded gasoline purchased in regional areas. The subsidy scheme was later abolished starting on 1 January 2011.

We use state-level data from DRET on annual sales of petroleum products in South Australia to allocate the annual amounts reported in budget documents to gasoline and diesel fuel.

Sources: Government of South Australia (various years), DRET.

Tag: AUS_dt_19

Tasmania

Consumer Support Estimate

[Tasmania] Tasmanian Off-Road Diesel Fuel Subsidy (data for 1998-2000)

In 1998 the Tasmanian government started providing a subsidy worth AUD 0.03 per litre to off-road users of diesel fuel. This subsidy was paid on top of another AUD 0.03 per litre subsidy arising from the 1997 nationwide reform of excise taxes on fuel. The Tasmanian off-road diesel subsidy ceased on 1 July 2000 as part of a broader federal tax reform.

Sources: Tasmanian Government (various years).

Tag: AUS_dt_23

[Tasmania] Tasmanian Fuel Subsidy Scheme (data for 2003-2007)

Following the 1997 High Court decision banning state-level excise taxes on fuel, the Tasmanian government started providing subsidies for the on-road use of diesel and gasoline. These subsidies were discontinued in September 2007 and replaced by tax reliefs provided through reductions in the state's motor taxes and vehicle-registration transfer duties.

Data are not available before 2003. We use state-level data from DRET on annual sales of petroleum products in Tasmania to allocate the annual amounts reported in budget documents to gasoline and diesel fuel.

Sources: Tasmanian Government (various years), DRET.

Tag: AUS_dt_24

[Tasmania] Tasmanian Heating Allowance (data for 2007)

The state of Tasmania provides a means-tested allowance to eligible households to assist them with the costs of heating, irrespective of whether households use wood, fuel oil, natural gas or electricity.

A separate budget line is not provided for this particular programme, but the FY2007/08 Tasmanian state budget indicated that AUD 506 000 had been allocated to the heating allowance for that particular year. We estimate the share of payments that is attributable to fuel oil and natural gas on the basis of the IEA's Energy Balances for the residential sector.

Sources: Tasmanian Government (various years), IEA.

Tag: AUS_dt_27

Victoria

Consumer Support Estimate

[Victoria] Diesel-Fuel Exemption Certificate Scheme (data for 1995-1999)

This programme provided off-road users of diesel fuel in the state of Victoria with an exemption from the state's regular fuel excise tax. As was the case with the Western Australian Diesel Subsidy (see above), the introduction of several federal rebates for the off-road use of diesel fuel resulted in the programme being phased-out in 2000.

Sources: Victorian State Government (various years).

Tag: AUS_te_12

[Victoria] Victorian Government Fuel Subsidy Scheme (data for 1999-2006)

Between 1999 and 2007, the state of Victoria provided subsidies for both gasoline and diesel fuel sold for use in the state. The subsidy amount ranged from AUD 0.00429 per litre for gasoline to AUD 0.00751 per litre for diesel used on roads. Payments were made to wholesalers operating within the state of Victoria on the understanding that they would pass on the subsidy to final consumers. The 2007 Victoria State Budget provided for the abolition of the scheme and the recycling of the associated funding towards reductions in motor-vehicle duty rates.

We use state-level data from DRET on annual sales of petroleum products in Victoria to allocate the annual amounts reported in budget documents to gasoline and diesel fuel.

Sources: Victorian State Government (various years), DRET.

Tag: AUS_dt_20

[Victoria] Winter Energy Concession (no data available)

The state of Victoria's Winter Energy Concession provides eligible low-income households with a 17.5% discount on natural-gas bills between 1 May and 31 October each year. The concession is paid through gas retailers.

No data are available for this particular scheme.

Sources: Victorian State Government (various years).

Western Australia

Producer Support Estimate

[Western Australia] North West Shelf Gas Financial Assistance (data for 1997-2000)

The North West Shelf project is one of Australia's major resource-extraction projects. Because the Government of Western Australia has in the past devoted considerable resources to ensure that the project proceeds forward, an arrangement with the Commonwealth excludes the North West Shelf from the federal PRRT (see introductory remarks). Instead, the state of Western Australia retains part of the royalties and excise revenues collected on oil and natural-gas extraction. This would, however, change under new legislation recently introduced by the Australian government, and which would extend the PRRT regime to all onshore and offshore oil and gas projects starting on 1 July 2012.

Western Australia's budget papers suggest that the state has provided additional financial assistance between the years FY1997/98 and FY2000/01 to further encourage the exploitation of the North West Shelf resources, though not much information is available regarding this particular item. It appears several times in Western Australia's State Budget under the Grants, Subsidies and other Transfer Payments heading, but the specifics of the scheme are not described. North West Shelf Gas is, however, a major gas marketing agency in Western Australia.

The FY 2000/01 budget reports annual amounts up to FY 2003/04 while that for FY 2001/02 seems to suggest that payments stopped around FY 2000/01. Assuming that recent reporting tends to be more reliable, the measure is deemed phased-out following FY 2000/01.

Sources: Government of Western Australia (2011), Government of Western Australia (various years).

Tag: AUS_dt_05

Consumer Support Estimate

[Western Australia] Western Australian Diesel Subsidy (data for 1997-2009)

This programme dates back to 1997 when Australia's High Court ruled that state-level excise taxes on fuels should be banned. Because the state of Western Australia had an excise tax on diesel at the time, the transfers involved are relatively smaller than those under the corresponding scheme for the state of Queensland (see the "Queensland Fuel Subsidy Scheme" above). Although the measure initially targeted both off-road and on-road users, the introduction of several federal grants in July 2000 resulted in the programme being restricted to on-road users from that date forward. The subsidy was then entirely phased out in December 2009.

Sources: Government of Western Australia (various years).

Tag: AUS_dt_06

General Services Support Estimate

[Western Australia] Coal Industry Development (data for 2006-)

This measure aims at expanding coal companies' market opportunities overseas and domestically, improving coal-related infrastructure, and promoting R&D activities related to coal gasification and geosequestration. It forms part of Western Australia's Coal Futures Strategy, which is meant to encourage the production of coal in that state.

Lack of further details prevents us from allocating this measure to the PSE so we put it under the GSSE. We allocate this measure entirely to hard coal.

Sources: Government of Western Australia (various years).

Tag: AUS_dt_07

[Western Australia] Exploration Incentive Scheme (data for 2008-)

The Exploration Incentive Scheme (EIS) is a AUD 80 million initiative that aims to promote mineral and hydrocarbon exploration in the state of Western Australia. It started in 2008 and comprises six different sub-programmes concerned with geophysical data and mapping, application processes for mining companies, technology diffusion, and innovative drilling.

This programme is allocated to the GSSE since it benefits WA's mining sector as a whole and does not increase current production or consumption of fossil fuels. A financial breakdown by project was only available for the innovative drilling sub-programme. A total of eight fossil-fuel drilling projects were approved between 2008 and 2012, each of which received grants totalling about AUD 200 000. Personal communications with staff at WA's Department of Mines and Petroleum suggest that roughly 30% of EIS funding in relation to the other five sub-programmes can be considered to benefit the petroleum industry.

Sources: Government of Western Australia (various years), IEA.

Tag: AUS_dt_15

[Western Australia] Regional Alternative Energy Mobilisation Project (no data available)

This programme is a AUD 3.6 million initiative that was introduced as part of WA's budget for FY2011/12 to expand the Exploration Incentive Scheme and promote the exploration and development of onshore unconventional energy sources in the state. Eligible sources of energy mainly include shale gas and geothermal energy.

No information on the specific share of funding going to shale gas is available.

Sources: Government of Western Australia (various years).

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Table 2.1. Summary of fossil-fuel support to coal - Australia

(Millions of AUD, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Producer support								
Support for capital formation								
Accelerated depreciation for mining buildings	Federal	77	53	42	22	n.a.	n.a.	n.a.
Capital expenditure deduction for mining	Federal	7	6	5	4	2	2	0.5
Exploration and prospecting deduction	Federal	..	4	5	6	12	18	36
General services support								
Clean coal fund	Federal	n.a.	n.a.	15	35	109	125	98
Exploration NSW	NSW	1	1	n.a.	n.a.	n.a.	n.a.	n.a.
NSW clean coal fund	NSW	n.a.	n.a.	n.a.	n.a.	10	22	29
NSW derelict mines program	NSW	1	1	1	1	1	1	1
New frontiers	NSW	n.a.	1	1	2	2	1	2
Collingwood park mine subsidence package	QLD	n.a.	n.a.	n.a.	10	6	..	3
Coal industry development	WA	n.a.	1	2	6	18	4	3
Exploration incentive scheme	WA	n.a.	n.a.	n.a.	0	0	0.2	0

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances and on other data as specified in the chapter for Australia.

Table 2.2. Summary of fossil-fuel support to petroleum - Australia

(Millions of AUD, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Producer support								
Support to unit returns								
Cleaner fuels grants scheme	Federal	14	63	96	69	0	n.a.	n.a.
Support for land and natural resources								
Exemption from crude oil excise for condensate	Federal	770	790	980	580	600	590	550
Support for capital formation								
Accelerated depreciation for mining buildings	Federal	30	22	19	9	n.a.	n.a.	n.a.
Capital expenditure deduction for mining	Federal	3	3	2	2	1	1	0.2
Exploration and prospecting deduction	Federal	..	13	31	31	55	63	46
Consumer support								
Fuel Tax Credits	Federal	3519	4983	4716	5070	4996	5111	5732
Reduced excise rate on heating oil	Federal	364	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Petroleum products freight subsidy scheme	Federal	3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Exemption from excise for alternative fuels	Federal	588	649	576	565	516	535	496
Reduced excise rate on aviation fuel	Federal	570	860	950	970	980	1020	1060
Fuel sales grants scheme	Federal	255	25	0.3	n.a.	n.a.	n.a.	n.a.
Petroleum products subsidy scheme	NSW	40	39	42	43	n.a.	n.a.	n.a.
NT Fuel Subsidy Scheme	NT	4	4	4	3	n.a.	n.a.	n.a.
Queensland fuel subsidy scheme	QLD	524	525	555	560	28	n.a.	n.a.
SA Fuel subsidy scheme	SA	14	14	14	14	14	9	n.a.
Tasmanian fuel subsidy scheme	TAS	15	15	8	n.a.	n.a.	n.a.	n.a.
Victorian government fuel subsidy scheme	VIC	40	40	n.a.	n.a.	n.a.	n.a.	n.a.
Western Australian diesel subsidy	WA	8	8	8	9	6	n.a.	n.a.

Table 2.2. Summary of fossil-fuel support to petroleum – Australia *(cont.)*

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
General services support								
New frontiers	NSW	n.a.	0.4	0.4	0.4	0.4	0.4	0.3
Exploration NSW	NSW	1	1	n.a.	n.a.	n.a.	n.a.	n.a.
Bringing Forward Discovery	NT	n.a.	n.a.	1	0.3	0.3	0.3	0.2
Building the territory's resource base	NT	1	1	n.a.	n.a.	n.a.	n.a.	n.a.
Exploration incentive scheme	WA	n.a.	n.a.	n.a.	1	1	1	1

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances and on other data as specified in the chapter for Australia.

Table 2.3. Summary of fossil-fuel support to natural gas - Australia

(Millions of AUD, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Producer support								
Support for capital formation								
Infrastructure borrowings tax offset scheme - Transport	Federal	2	1	1	n.a.	n.a.	n.a.	n.a.
Capital expenditure deduction for mining	Federal	4	4	3	2	2	1	0.4
Exploration and prospecting deduction	Federal	..	19	42	48	86	113	112
Infrastructure bonds scheme - Transport	Federal	3	2	1	1	n.a.	n.a.	n.a.
Accelerated depreciation for mining buildings	Federal	37	32	25	14	n.a.	n.a.	n.a.
Consumer support								
Infrastructure bonds scheme - Power generation	Federal	5	3	1	1	n.a.	n.a.	n.a.
Exemption from excise for alternative fuels	Federal	12	11	14	15	14	15	14
Infrastructure borrowings tax offset scheme - Power generation	Federal	2	1	1	n.a.	n.a.	n.a.	n.a.
ACT energy concession	ACT	0.3	0.4	<0.1	..	..	..	0.1
Energy accounts payment assistance scheme	NSW	3	3	3	..	..	..	..
Home energy emergency assistance scheme	QLD	n.a.	n.a.	0.4	0.1	1	1	1
Reticulated natural gas rebate	QLD	n.a.	n.a.	n.a.	4	2	2	2
Tasmanian heating allowance	TAS	..	..	0.2	..	..	..	..
General services support								
New frontiers	NSW	n.a.	1	1	1	1	1	1
Exploration NSW	NSW	2	2	n.a.	n.a.	n.a.	n.a.	n.a.
Building the territory's resource base	NT	2	2	n.a.	n.a.	n.a.	n.a.	n.a.
Bringing forward discovery	NT	n.a.	n.a.	1	0.5	0.5	0.5	1
Exploration incentive scheme	WA	n.a.	n.a.	n.a.	2	2	2	2

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances and on other data as specified in the chapter for Australia.

Chapter 3.

AUSTRIA

This chapter identifies, documents, and provides estimates of the various budgetary transfers and tax expenditures that relate to the production or use of fossil fuels in Austria. An overview of the country's energy economy is first given to place the measures listed into context. A data-documentation section then describes those measures in a systematic way. Whenever possible, the description details a measure's formal beneficiary, its eligibility criteria and functioning, and the fuels whose production or use stand to benefit from the measure. The chapter ends with a set of tables that provide, subject to availability, quantitative information and estimates for the various measures listed.

Energy resources and market structure

Austria has a relatively large share of renewable energy in its total primary energy supply (TPES). In 2010, over 28% of TPES in Austria was produced from renewable sources — about 17% from wind, solar and geothermal power, 10% from hydropower and 2% from combustible waste. Fossil fuels — comprised of oil, natural gas and coal (37%, 25% and 10%, respectively) — accounted for the remaining 70% of TPES. Around 30% of Austria's energy needs are produced domestically. Despite having a significant share of fossil fuels in TPES, Austria produces about two-thirds of its electricity from renewable-energy sources.

The largest Austrian petroleum company, OMV AG, is 31.5%-owned by the state and it is the biggest integrated petroleum company in Central Europe. It undertakes petroleum exploration and production (E&P), refining, wholesale and retail sales, both domestically and internationally. Its biggest E&P activities are carried out in Austria and Romania. The company holds significant stakes in other petroleum companies abroad – for example, it owns a majority of share in Petrom SA (the largest petroleum company in Romania) and has a 97% stake in Petrol Ofisi (a leading retail and commercial petroleum company in Turkey). OMV also operates Austria's only refinery, in Schwechat, and operates three gas-storage facilities in the country. In 2010, the company covered 10% of Austria's oil and 19% of Austria's natural gas demand from domestic production. Austria imports most of its oil from Kazakhstan. The imported crude oil is primarily transported via the Adria Wien Pipeline (AWP) to the refinery in Schwechat.

Austria also imports most of its natural gas from Russia. The signatories of the major contract for imports of natural gas are EconGas and Russian Gazexport. EconGas is the largest Austrian gas supplier. OMV owns 50% of EconGas; the remaining 50% is in the hands of five municipal and state utilities in Vienna, Linz, Upper Austria, Lower Austria, and Burgenland. OMV also owns the Baumgarten gas hub operator.

Until the end of 2004, the mining company GKB-Bergbau GmbH produced small quantities of lignite. Any other production of coal is insignificant in scale and of sporadic nature. Most of the demand for coal is met by imports from Poland and the Czech Republic. Accompanying the liberalisation process in Austria, a compensation of sunk costs for the lignite power plant Voitsberg III was approved by the European Commission in 2001. The scheme terminated in 2008 and the plant shut down.

Austria liberalised its electricity market, ahead of the EU regulation, in 2001. Most of the significant electricity suppliers are partially owned by the federal and state governments. Public ownership of the main companies is prescribed by legislation with constitutional status. The transmission network has been unbundled and it is divided into two regions, each of which is operated by a different company. Austria occupies a central position in the EU electricity network and is connected to all of its neighbouring countries, with the exception of the Slovak Republic. Both the electricity and the gas markets are concentrated in the hands of big suppliers: about 70% of the gas market is controlled by OMV, while the biggest electricity supplier and generator, Verbund (51% owned by the state), accounts for approximately half of all electricity production. Similarly to all the other electricity generators, its portfolio comprises a mix of small and large hydropower stations. EnergieAllianz is the second-largest electricity company, indirectly owned by two states and the city of Vienna. A range of smaller, regional and municipal electricity and gas suppliers are active in Austria, mostly in the regions and municipalities which own them.

In Austria, the energy policy is jointly conducted at both the Federal and State levels, as stipulated in the Federal Constitution. This joint responsibility applies to the supply of electricity, gas and heating; energy conservation; and regulatory supervision of energy companies. The Austrian Energy Agency, established by the federal government and the nine

Austrian States (*Länder*), promotes clean energy in Austria. Most of the *Länder* have also set up energy agencies to assist them in fulfilling this role on the sub-national level. Any subsidies to energy are also jointly decided upon by the Federal government and the States. While subsidies to enterprises and companies fall under Federal jurisdiction, subsidies to households are provided at the sub-national level.

Prices, taxes and support mechanisms

The prices of electricity and natural gas are set freely by the market. Energie-Control Austria (E-Control) is the federal regulator for electricity and gas. In March 2011, E-Control was transformed into a public company agency. Its tasks are stipulated by the E-Control Act.

The Federal Ministry of Finance sets the tax rates on fossil fuels and electricity in Austria. The government has included environmental objectives in its taxation policy since 1996, when a law on the taxation of natural gas and electricity was first implemented. An EU-approved tax reimbursement scheme for certain energy-intensive industries is in operation. In addition, the Federal authorities provide tax exemptions to international aviation and shipping, relief from the mineral-oil tax, as well as LPG used in public transport, and diesel fuel used in railways. Finally, farmers can obtain rebates for diesel fuel. A full VAT rate of 20% is levied on all energy sales, except for diesel and heavy fuel oil for commercial use. The Austrian Stability Law of 2012 stipulates that the energy-tax exemption from LPG used in public transport, the energy-tax relief for diesel fuel used in railways and the rebates to diesel used in agriculture will all expire at the end of 2012.

Austria provides support to R&D in the energy sector. Overall co-ordination for supervision of the research programmes and funding of the research institutions comes under the responsibility of the Ministry of Transport, Technology and Innovation. In 2008, about EUR 2.7 million, or 3.8% of the total public expenditure for R&D in the energy sector, was related to fossil fuels. In the same year, OMV AG reported spending about EUR 14.0 million from its own funds on R&D.

Austria also provides support to commuters who rely on their own cars to get to work. The support is made available in the form of a tax allowance — i.e. commuters are allowed a lump-sum deduction from their taxable income. The amount of the deduction is dependent on the distance between one's home and workplace, and the accessibility of public transport.

Data documentation

General notes

The fiscal year in Austria coincides with the calendar year. Amounts prior to 1999 are expressed as "euro-fixed series", meaning that we applied the fixed EMU conversion rate (1 EUR = 13.7603 ATS) to data initially expressed in Austrian Schilling (ATS). In the case of the support measure tagged as te_04, the conversion into EUR was already provided by the Federal Ministry of Finance.

Data estimates were downloaded from the website of the Federal Ministry of Finance (which published subsidy reports for the years 2004-9) and provided by the Federal Ministry of Finance (for the years prior to 2004).

Producer Support Estimate

Stranded Costs Compensation to Voitsberg III (2001-2007)

European Parliament and Council Directive 96/92/EC of 19 December 1996 stipulating common rules for the internal market in electricity laid down the principles for opening up

the European electricity markets to competition. Since the gradual transition to a competitive market was meant to take place under acceptable economic conditions that take into account the specific characteristics of the electricity industry, Member States were allowed to introduce State aid mechanisms that would allow their electricity producers to adapt to a competitive-market setting.

In Austria, one of such measures was a compensation of sunk costs for the lignite power plant Voitsberg III. The power plant had committed to firing only expensive lignite from the local lignite mines, which led to operating costs that were significantly higher than those incurred by similar coal power plants in the country. Since Voitsberg III would not have been economically viable under the liberalised electricity market and it had already signed contracts with the local lignite mines, the stranded-costs compensation scheme supporting the power plant was approved by the European Commission in 2001. The total nominal value of compensation was estimated to be EUR 102 million. The scheme terminated in 2008.Since Voitsberg III relies only on lignite, the scheme is an implicit subsidy to the coal sector. The measure is thus allocated to the PSE.

Since no detailed breakdown of the government expenditure pertaining to the stranded-costs compensation to Voitsberg III is available, the estimated compensation of EUR 102 million has been divided up into seven equal instalments, which are assigned to each of the years when the scheme was operating.

Source: European Staatliche Beihilfe Nr. N 34/99 — Österreich.

Tag: AUT_dt_01

Consumer Support Estimate

Energy-Tax Exemption for LPG Used in Public Transport (data for 1984-)

As stipulated by the 1981 Mineralölsteuergesetz and the 1995 Mineralölsteuergesetz (Mineral Oil Taxation Law), LPG used as fuel for local public transport, on routes not exceeding 25 km, is fully exempt from energy-tax payments.

As stipulated by the Austrian Stability Law of 2012, this exemption will expire at the end of 2012.

Source: Federal Ministry of Finance, Förderungsberichte (various years); Mineralölsteuergesetz 1981; Mineralölsteuergesetz 1995.

Tag: AUT_te_01

Energy-Tax Relief for Diesel Used by Trains of the Austrian Railways (data for 1984-)

As stipulated by the 1981 Mineralölsteuergesetz and the 1995 Mineralölsteuergesetz (Mineral Oil Taxation Law), diesel used as fuel for trains owned by the Austrian Railways is partially refunded.

As stipulated by the Austrian Stability Law of 2012, this measure will expire at the end of 2012.

Source: Federal Ministry of Finance, Förderungsberichte (various years); Mineralölsteuergesetz 1981, Mineralölsteuergesetz 1995.

Tag: AUT_te_02

Energy-Tax Rebates to Diesel Used in Agriculture (data for 2005-)

Rebates to diesel used in agriculture were introduced in 2005. Every farmer or forester is entitled to apply for a rebate which is equal to the difference between the energy-tax rate

levied on diesel and the energy tax rate levied on light heating oil (*e.g.* in 2005, it amounted to EUR 0.204 per litre). Rebates are paid out from a special fund earmarked for this budgetary expenditure, the cap on which is set at EUR 50 million for each calendar year.

As stipulated by the Austrian Stability Law of 2012, this measure will expire at the end of 2012.

Source: Agrardieselverordnung (2012), Förderungsberichte (various years); Mineralölsteuergesetz 1995.

Tag: AUT_te_03

Energy-Tax Refund to Energy-Intensive Industries (data for1996-)

An energy-tax refund to energy-intensive industries was introduced in 1996 and is currently still in operation. As stipulated by the EU Directive 2003/96/EC, EU member states may, fully or in part, refund energy taxes paid by businesses that have invested in the rationalisation of their energy use. This refund may be as much as 100% for energy-intensive businesses and up to 50% for other businesses. Energy-intensive businesses in Austria are not granted a complete refund of their energy-tax payments as they have to pay at least the minimum energy-tax rates stipulated by the EU Directive 2003/96/EC.

As of 2011 the services sector is no longer entitled to these refunds. The Ministry of Finance has estimated that this will result in reduction of this tax expenditure by about EUR 100 million per year.

We allocate the annual amounts reported by the Ministry of Finance to different fuels on the basis of the IEA's Energy Balances for the industries producing iron and steel, chemical and petrochemical, non-ferrous metals and non-metallic minerals, and to commercial and public services. Annual payments pertaining to electricity, which we exclude from reporting, constitute about 34%-44% of the total payments in a given year.

Payments are allocated to solid fuels from 2004 onwards as they had not been encompassed by the energy-taxation system prior to that year.

Source: IEA; Ministry of Finance.

Tag: AUT_te_04

Energy-Tax Relief for Gasoil Used for Powering CHP Plants (data for 1984-1996)

As stipulated by the 1981 Mineralölsteuergesetz, gasoil used for powering combined heat and power (CHP) plants is subject to an energy-tax relief. Although the scheme is still in operation, estimates are available only until 1996. After that time they were included in the Energy-Tax Refund to Energy-Intensive Industries (See "AUT_te_04").

Source: Mineralölsteuergesetz 1981, Förderungsberichte (various years).

Tag: AUT_te_05

Energy-Tax Relief for Mineral Oil Used for Testing Motors or Motor Vehicles (data for 1984-1994)

As stipulated by the 1981 Mineralölsteuergesetz, mineral oil used in the process of testing motors or motor vehicles in factories used to benefit from an energy-tax relief. The measure expired in 1995.

We allocate the annual amounts reported in the Förderungsberichte to diesel oil and motor gasoline on the basis of the IEA's Energy Balances for the road sector.

Source: Förderungsberichte (various years), IEA; Mineralölsteuergesetz 1981.

Tag: AUT_te_06

Energy-Tax Relief for Mineral Oil Used in Certain Agricultural Machinery (data for 1984-1993)

As stipulated by the 1981 Mineralölsteuergesetz, mineral oil used in certain agricultural machinery used to benefit from an energy-tax relief. The measure expired in 1994.

We allocate the annual amounts reported in the Förderungsberichte to diesel oil and fuel oil on the basis of the IEA's Energy Balances for the agricultural sector.

Source: Förderungsberichte (various years), IEA; Mineralölsteuergesetz 1981.

Tag: AUT_te_07

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Policies or transfers

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Energy statistics

IEA (2011), *Energy Balances of OECD Countries,* International Energy Agency, Paris.

Table 3.1. Summary of fossil-fuel support to coal - Austria

(Millions of EUR, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Producer support								
Support to unit returns								
Stranded Costs Compensation to Voitsberg III	Federal	15	15	15	n.a.	n.a.	n.a.	n.a.
Consumer support								
Energy tax refund to energy intensive industries	Federal	64	75	65	91	80	70	70

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Table 3.2. Summary of fossil-fuel support to petroleum - Austria

(Millions of EUR, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Consumer support								
Energy tax exemption for LPG used in public transport	Federal	4	4	4	4	4	4	4
Energy tax relief for diesel used by trains of the Austrian railways	Federal	18	13	15	15	15	10	10
Rebates to diesel used in agriculture	Federal	39	39	44	44	49	49	49
Energy tax refund to energy intensive industries	Federal	36	42	32	43	52	46	46

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Table 3.3. Summary of fossil-fuel support to natural gas - Austria

(Millions of EUR, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Consumer support								
Energy tax refund to energy intensive industries	Federal	229	262	215	246	242	213	213

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Chapter 4.

BELGIUM

This chapter identifies, documents, and provides estimates of the various budgetary transfers and tax expenditures that relate to the production or use of fossil fuels in Belgium. An overview of the country's energy economy is first given to place the measures listed into context. A data-documentation section then describes those measures in a systematic way. Whenever possible, the description details a measure's formal beneficiary, its eligibility criteria and functioning, and the fuels whose production or use stand to benefit from the measure. The chapter ends with a set of tables that provide, subject to availability, quantitative information and estimates for the various measures listed.

Energy resources and market structure

Belgium has negligible economically recoverable resources of fossil energy and relies heavily on imported energy. Coal was once the main indigenous energy source, but there has been no domestic production of coal since the last mine closed in 1992. Primary energy supply is relatively diversified, with oil meeting 42% of the country's needs in 2010, natural gas 28% and coal 5%. Nuclear power accounts for a fifth of energy supply and about half of total electricity generation. Renewables and imported electricity and heat account for the remaining 5% of primary energy supply. In aggregate, imports meet more than three-quarters of the country's energy needs (treating nuclear power as indigenous production).

The principal goals of Belgian energy policy are security of supply through the diversification of geographical sources of supply and fuels; energy efficiency; transparent and competitive energy pricing; and environmental protection. The three regions—Wallonia, Brussels-Capital, and the Flemish region—have also adopted energy policies covering their areas of competence, prioritising energy efficiency and renewables. Increasingly, policy is driven by EU laws and regulations. At the national level, a key policy objective is the phase-out of nuclear energy. A 2003 law prohibits the construction of new nuclear plants and sets a 40-year limit on the operating lifetime of existing plants. The Belgian government has recently decided to maintain the nuclear phase-out law with the exception of one nuclear power plant (Tihange 1), which is allowed to operate for ten years longer (i.e. until 2025). A new bill amending the nuclear phase-out law is also being considered for approval by Parliament. Should this proposal be approved, only two reactors would have to shut down by 2015. The safety problems encountered at Doel 3 and Tihange 2 have not influenced the government's decision so far.

Belgium's energy sector is almost entirely in private hands, though some local distribution of electricity and natural gas is carried out by companies that are wholly or partially owned by municipalities. The gas and electricity markets have been fully opened to competition, as required under EU law, but traditional suppliers, notably GDF Suez in gas and its subsidiary, Electrabel, in electricity, continue to hold dominant positions. The national regulator, the Electricity and Gas Regulatory Commission (CREG), is mainly responsible for approving transmission and distribution tariffs and market monitoring. Each of the three regions has its own regulatory body, which are primarily responsible for approving local distribution tariffs.

Prices, taxes and support mechanisms

As required by EU law, there are no price controls on energy as such. However, the central government maintains a system of price ceilings on the main oil products under an agreement with the national oil industry federation. These ceilings are intended to act as a cushion against sudden price spikes. The CREG and the regional regulators set network charges for electricity and natural gas, but do not have the legal means to control electricity or gas prices to most final consumers. Nevertheless, faced with a rapid rise in final energy prices, the government has recently decided to freeze retail energy prices until the end of 2012. Proposals are being prepared by the legislator with a view to imposing standard rules for setting retail energy price rises in the future.

Energy supply attracts VAT at the standard rate of 21%, with the exception of coal for household use, which is taxed at 12%. Excise duties are levied on petroleum products at different rates. There is also a special levy on the household use of gasoline, light heating oil, natural gas, LPG and electricity, which is used to finance various public services, including the CREG. Electricity and gas supplied under social tariffs are exempt from this levy. In 2008, the government introduced a special annual tax on the nuclear power generators in

response to concerns that they were making large profits from assets that were depreciated before liberalisation.

There are a number of tax preferences relating to energy consumption in Belgium. Certain categories of business consumers, notably companies consuming large quantities of energy and those holding an environmental permit, benefit from a reduced rate of excise tax on sales of some petroleum products (diesel fuel, heavy fuel oil, LPG, natural gas and kerosene). Some off-road vehicles and stationary engines that are operated in the construction and civil-engineering sectors also qualify for tax reductions. Energy products used in farming, forestry, horticulture, and pisciculture, as well as certain solid fuels used by households, also attract fuel-tax reductions. There are two measures that directly support household energy use: the Heating Oil Social Fund (*Fonds Social Mazout*), which provides low-income and heavily indebted households with grants to help them pay their heating bills; and a social tariff for natural gas and electricity for disadvantaged households, set every six months by the CREG on the basis of the lowest commercial tariff in the country, with suppliers receiving the difference between the social tariff and the actual market tariff from a fund managed by the regulator and financed by the federal government.

Data documentation

General notes

The fiscal year in Belgium coincides with the calendar year. Following OECD convention, amounts prior to 1999 are expressed as 'euro-fixed series', meaning that we applied the fixed EMU conversion rate (1 EUR = 40.339 BEF) to data initially expressed in the Belgian Franc (BEF).

Producer Support Estimate

Belgium supported the production of hard coal until 1992, at which time the last mine still in operation was closed. Since then, it has not supported the production of any fossil fuel.

Consumer Support Estimate

Fuel-Tax Reduction for Certain Professional Uses (data for 1997-)

This measure provides certain professional users with reductions in the rate of excise tax applicable to sales of petroleum products and natural gas in Belgium. Eligible users include those companies that consume large quantities of such fuels and those that possess a *Permis Environnemental* or *Vergunning Milieudoelstelling* (Environmental Permit).

These tax reductions apply mainly to diesel fuel (containing both low and high levels of sulphur) but recent budget documents also provide estimates for LPG and kerosene starting in 2004. None are, however, provided for heavy fuel and natural gas. Data are not available prior to 1997.

Sources: Chambre des Représentants de Belgique (various years [a]).

Tag: BEL_te_01

Fuel-Tax Exemption for Regional Bus Transport (data for 1997-2008)

This measure exempted providers of regional bus-transport services from the excise tax that is normally levied on sales of petroleum products in Belgium. It was initially capped at BEF 2 000 (EUR 50) per 1 000 litres, but was then phased out in June 2008.

Sources: Chambre des Représentants de Belgique (various years [a]).

Tag: BEL_te_02

Fuel-Tax Reduction for Certain Industrial Uses (data for 1997-)

Certain industrial and commercial activities undertaken in Belgium can benefit from a reduced rate of excise tax applicable to petroleum products. Eligible uses include some off-road vehicles and stationary engines that are operated in the construction and civil-engineering sectors.

The provision applies to diesel fuel, LPG and kerosene. No estimates are, however, available for LPG. Accordingly, we allocate the annual amounts reported in official budget documents to diesel fuel and kerosene on the basis of the IEA's Energy Balances for the construction and commercial and public services sectors.

Sources: Chambre des Représentants de Belgique (various years [a]), IEA.

Tag: BEL_te_03

Fuel-Tax Exemption for Agriculture (data for 1997-2004)

This provision exempts agriculture, horticulture, forestry, and pisciculture from the excise tax that is normally levied on sales of energy products in Belgium. The measure applied only to diesel fuel and kerosene until 2004, at which time coverage was extended to heavy fuel, LPG, natural gas, electricity, hard coal, coke, and lignite.

Data are only available up to 2004 for both diesel fuel and kerosene. We allocate the annual amounts reported in official budget documents to diesel fuel and kerosene on the basis of the IEA's Energy Balances for the agriculture and forestry sector.

Sources: Chambre des Représentants de Belgique (various years [a]), IEA.

Tag: BEL_te_04

Fonds Social Mazout (data for 2007-)

The Fonds Social Mazout or *Sociaal Verwarmingsfonds* (Heating Oil Social Fund) is a programme that provides low-income and heavily indebted households with grants to help them pay their heating bills. The fund operates all year long and is specifically tied to consumption of heating oil.

Funding comes from both the industry and the Belgian government but we only report here the amounts that are attributable to government funding.

Sources: Directorate General Statistics and Economic Information, Chambre des Représentants de Belgique (various years [b]).

Tag: BEL_dt_01

Social Tariff for Natural Gas (data for 2004-)

Certain households in Belgium are entitled to a reduced tariff for both natural gas and electricity. This "social tariff" was introduced in 2004. It is set once every six months by the Commission de Régulation de l'Électricité et du Gaz or Commissie voor de Regulering van de Elektriciteit en het Gas (Regulatory Commission for Electricity and Natural Gas) on the basis of the lowest commercial tariff in the country. Beneficiaries of the social tariff are also exempt from the excise tax normally levied on sales of natural gas.

Payments are made to suppliers out of a fund partly financed through the federal budget to compensate them for the difference between the reduced tariff and the market price. Eligible households include those that are entitled to welfare programmes, disabled persons, and the elderly.

Only those amounts that pertain to natural gas are here being reported.

Sources: Directorate General Statistics and Economic Information, Chambre des Représentants de Belgique (various years [b]).

Tag: BEL_dt_02

Special Heating Grant (data for 2009-)

This programme was introduced in 2009 to dampen the impact of rising energy prices on poor households. It provides eligible consumers with a lump-sum discount on their heating bills worth EUR 105 a year. The measure applies to heating in general, irrespective of whether it comes from electricity, natural gas or heating oil (so-called mazout). To be eligible, households must not already benefit from either the Fonds Social Mazout or the Social Tariff for Natural Gas (see above).

We use the IEA's Energy Balances for the residential sector to allocate the amounts reported in official budget documents to heating oil, natural gas, and electricity. Only those amounts that pertain to heating oil and natural gas are here being considered.

Sources: Chambre des Représentants de Belgique (various years [b]), IEA.

Tag: BEL_dt_03

Fuel-Tax Rebate for Taxi Drivers (no data available)

This measure provides taxi drivers in Belgium with a partial rebate on their excise-tax bill to compensate for the increase in the rate of excise tax that came into force on 1 February 2004.

No estimates are available for this scheme.

Sources: Chambre des Représentants de Belgique (various years [a]).

Fuel-Tax Exemption for Natural Gas Used as Motor Fuel (no data available)

The use of natural gas and LPG as motor fuels in Belgium is exempt from excise tax.

No estimates are available for this scheme.

Sources: Chambre des Représentants de Belgique (various years [a]).

Fuel-Tax Exemption for Rail Transport (no data available)

Rail transport in Belgium is exempted from the excise tax that normally applies to sales of petroleum products.

No estimates are available for this scheme.

Sources: Chambre des Représentants de Belgique (various years [a]).

Fuel-Tax Exemption for Inland Navigation (no data available)

The use of petroleum products as fuel for inland navigation in Belgium is exempt from the excise tax normally levied on sales of such fuels.

No estimates are available for this scheme.

Sources: Chambre des Représentants de Belgique (various years [a]).

Fuel-Tax Exemption for the Residential Use of Coal (no data available)

The use of hard coal, lignite, and coke by households in Belgium is exempt from the excise tax that normally applies to sales of such fuels.

No estimates are available for this scheme.

Sources: Chambre des Représentants de Belgique (various years [a]).

Sources

Policies or transfers

Chambre des Représentants de Belgique (various years [a]), *Annexe – Inventaire des Exonérations, Abattements et Réductions qui Influencent les Recettes de l'État*, Budget des Voies et Moyens, Available at: *docufin.fgov.be/intersalgfr/thema/stat/Stat_fiscale_uitgaven_fed.htm*

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Energy statistics

IEA (2011), *Energy Balances of OECD Countries*, International Energy Agency, Paris.

Table 4.1. Summary of fossil-fuel support to petroleum - Belgium

(Millions of EUR, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Consumer support								
Fuel-tax reduction for certain industrial uses	Federal	139	126	111	109	113	143	143
Fuel-tax reductions for certain professional uses	Federal	2007	1959	1411	1652	1603	1891	1891
Fonds social mazout	Federal	n.a.	n.a.	10	33	6	23	30
Fuel-tax exemption for regional bus transport	Federal	7	8	8	4	n.a.	n.a.	n.a.
Special heating grant	Federal	n.a.	n.a.	n.a.	n.a.	1	3	3

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Table 4.2. Summary of fossil-fuel support to natural gas - Belgium

(Millions of EUR, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Consumer support								
Special heating grant	Federal	n.a.	n.a.	n.a.	n.a.	1	4	4
Social tariff for natural gas	Federal	7	6	8	52	34	67	67

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Chapter 5.

CANADA

This chapter identifies, documents, and provides estimates of the various budgetary transfers and tax expenditures that relate to the production or use of fossil fuels in Canada. An overview of the country's energy economy is first given to place the measures listed into context. A data-documentation section then describes those measures in a systematic way. Whenever possible, the description details a measure's formal beneficiary, its eligibility criteria and functioning, and the fuels whose production or use stand to benefit from the measure. The chapter ends with a set of tables that provide, subject to availability, quantitative information and estimates for the various measures listed.

Energy resources and market structure

Canada has substantial and diversified fossil-energy resources, and the energy sector makes a significant contribution to the economy. It is a net exporter of oil, natural gas and coal, as well as uranium (being the world's largest producer) and electricity (the majority of it hydropower-based). Canada has the third-largest proven oil reserves in the world, most of which are in oil sands. Production from oil sands has grown rapidly in recent years, broadly offsetting a decline in output of conventional oil. Proven natural gas reserves have risen in the last few years, mainly thanks to shale gas and other unconventional types of gas, though overall production and exports (entirely to the United States) have declined. Oil and gas together account for two-thirds of the country's primary energy use, with hydro-based electricity (12%) and nuclear power (9%) accounting for most of the rest. Overall, Canada exports about one-third of its energy production.

Canadian energy policy relies on competitive markets for determining supply, demand, prices and trade. The federal government no longer has any ownership stake in any major energy company, other than Atomic Energy of Canada Limited (AECL) — a Crown corporation responsible for managing Canada's national nuclear-energy research and development programme. The privatisation of Petro-Canada, previously the main state-owned energy company, was completed in 2004. By contrast, all but one of the ten provinces still have Crown corporations in energy, notably in hydropower production.

In general, the provinces have jurisdictional responsibility for the resources that lie within their boundaries and are therefore responsible for oversight of the industry within their boundaries. Four provinces — British Columbia, Alberta, Saskatchewan and Newfoundland and Labrador — account for a large majority of Canada's oil-and-gas production. Production in British Columbia, Alberta and Saskatchewan is regulated by the provinces, but in Newfoundland and Labrador (as in Nova Scotia) the federal government and the province jointly regulate offshore production activities. In addition, federal government jurisdiction applies to Crown and some private lands north of 60 degrees latitude in the territories, reserve lands and offshore frontier areas. However, territorial governments are provided with the authority to exercise most onshore-land and natural-resource responsibilities where devolution or administrative agreements are in place. The upstream oil and gas industry in Canada is highly competitive, with hundreds of exploration and production firms.

The natural gas gathering and transmission pipeline network is owned and operated by several private companies. The main exceptions are TransGas and Swan Valley Gas Corporation, which are provincial Crown corporations, owned by SaskEnergy in Saskatchewan and Manitoba Hydro in Manitoba. Gas distribution assets are typically owned and operated by private companies that have exclusive rights to distribute gas in a given regional or local area. Distribution companies are provincially regulated and most are the only retailer in their concession area with the exception of the provinces of Alberta and Ontario, where some retail competition exists. Regulation of the gas industry is primarily in the hands of the provincial authorities, with the National Energy Board responsible for regulating interprovincial and international gas trade and pipelines.

In most provinces, the electricity industry is highly integrated, and the bulk of generation, transmission and distribution services are provided by a few dominant utilities. Although some of these are privately owned, most are Crown corporations owned by the provincial governments. In some cases, small generators also exist, but rarely compete directly with a Crown corporation. In many cases, the previously integrated utilities are increasingly becoming functionally unbundled to accommodate the introduction of wholesale competition, and in some provinces, generation, transmission and distribution/retail activities are structurally distinct. In several places, notably in Alberta, some municipalities have maintained ownership of their local distribution utility facilities, while also setting up

municipally owned generating companies to compete in the open wholesale market. Only two provinces — Ontario and Alberta — have moved to full retail competition although Ontario also has a Regulated Price Plan as a default for residential and low-volume consumers. Generation, transmission and distribution services are regulated largely by provincial regulatory agencies.

Prices, taxes and support mechanisms

Most energy commodity prices are unregulated in Canada. Nonetheless, some retail oil price controls remain in place in Québec, New Brunswick, Nova Scotia, Prince Edward Island and Newfoundland and Labrador. These provincial controls set a maximum retail price or a minimum price, or (in the case of Prince Edward Island and Nova Scotia) both. Natural gas and electricity prices are regulated in most provinces by a quasi-judicial board or commission on a cost-of-service basis. In Alberta and Ontario, prices are set by the market, although households and smaller commercial consumers have the option of subscribing to a regulated rate.

Income-tax treatment of the oil, gas and mining sectors in Canada has been undergoing fundamental reforms. Royalties are now fully deductible from income for corporate income-tax purposes, and the resource allowance, a special deduction permitted in lieu of royalty deductibility, has been phased out. Also, corporate tax rates for the oil, gas and mining sectors, which had been higher than those for other industries for a number of years, have been brought into line with the general corporate rate. The accelerated capital cost allowance for oil-sands projects (which permitted companies a fast write-off of certain kinds of assets) is being phased out over the period 2011-2015. In its 2011 budget, the Canadian government announced that in order to make the system more neutral, deduction rates for oil sands resource rights and certain intangible development costs of oil sands projects would be reduced to the rates applicable in the conventional oil and gas sector. However, several other tax measures that support energy production remain in place. These include: accelerated depreciation for physical assets in mines (including coal mines, but not oil sands mines) and for successful oil, gas and mineral exploration expenses; flow-through shares, which allow a corporation to transfer unused exploration and development expenses to their shareholders; and the ability for small oil and gas companies to reclassify some development expenses as exploration expenses under the flow-through share scheme. In addition, Alberta and British Columbia both offer several royalty-reduction programmes that target specific types of oil and gas projects.

Federal excise taxes are imposed on leaded and unleaded gasoline, diesel and aviation fuels used on domestic flights. Since April 2008, renewable fuels (ethanol and biodiesel) are subject to the same federal excise taxes as the motive fuels (gasoline and diesel fuel) with which they are blended. Diesel used as heating oil is exempt for excise tax. Diesel used in the generation of electricity is also exempt, except where the electricity so generated is used primarily in the operation of a vehicle. A federal goods and services tax (GST) is levied on all fuels and energy services. In all provinces except Alberta and the territories of Yukon, Northwest Territories, and Nunavut, a provincial sales tax is also generally levied, in several cases combined with the GST into a Harmonized Sales Tax (HST).

The provinces also levy specific taxes on fuels. Some provinces have programmes or fiscal features that support the consumption of certain types of energy. For example, in Alberta, a farm fuel distribution allowance provides farmers with direct budgetary transfers; another provision exempts farmers from the provincial component of the tax. The province of Saskatchewan exempts marked diesel fuel sold to valid Fuel-Tax Exemption Permit holders

for use in unlicensed farm, unlicensed primary production[1] machinery, and licensed farm vehicles. Prince Edward Island exempts from tax marked fuel sold to valid permit holders for use in unlicensed equipment in a number of activities including farming, fishing, and aquaculture. New Brunswick, Newfoundland and Labrador, Nova Scotia, Ontario, and the territory of Yukon all provide certain eligible households with some sort of rebate on their heating bills.

Canada has also traditionally provided support to northern communities to assist with the high cost of living in remote communities, including issues relating to access to energy. Support has been provided to First Nations communities in northern Ontario, for example, to upgrade infrastructure for power generation and alleviate the impact of high diesel fuel costs on generating and distributing electricity.

Data documentation

General notes

The fiscal year in Canada runs from 1 April to 31 March. Following OECD convention, data are allocated to the starting calendar year so that data covering the period April 2005 to March 2006 are allocated to 2005.

Since Canada is a federal country, the data collection exercise was also conducted for the following provinces and territories: Alberta (AB), British Columbia (BC), Manitoba (MB), New Brunswick (NB), Newfoundland and Labrador (NL), Nova Scotia (NS), Ontario (ON), Prince Edward Island (PE), Quebec (QC), Saskatchewan (SK), and the territory of Yukon (YT).[2]

The inventory includes a number of provincial tax expenditures within resource royalty systems. These are included because they are explicitly defined as quantified departures from the general royalty rules. As noted in Chapter 1 of this Inventory, however, it is important that such measures, including their objectives and impacts, be considered (in a parallel way with income tax and consumption tax measures) within the context of the broader royalty system of which they form a part.

Several features of Canada's tax system that indirectly support the production of fossil fuels—including coal and oil sands—apply to the mining sector as a whole. While our definition of support stresses specificity as a requisite, we consider those measures that apply to mining in general as being specific enough to warrant their inclusion in the database. In the absence of data on the actual sector distribution of the usage of these measures, as in other countries, the OECD has presumed based on relative output levels that the majority of the usage relates to fossil-fuel extraction. This should not be interpreted, however, as reflecting the views of the responsible governments.[3]

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1 Unlicensed primary production here comprises activities such as commercial fishing, commercial trapping, commercial logging, and commercial peat harvesting.

2 The inventory does not include at this stage the territory of Nunavut and the Northwest Territories.

3 An estimated allocation based on gross-output shares is used here to provide readers with a sense of the magnitudes involved. Since these allocations are not from government sources and are based on general volume and value ratios, they might not always correlate well with actual distributions, if such information were available. These assumptions have been made by the OECD and should not be interpreted as reflecting the views of the responsible government.

A counter-example of a measure that we have not considered specific enough would be the Atlantic Investment Tax Credit, which provides a 10% income tax credit for tangible capital investments in a particular region of Canada by corporations in certain sectors. Because this tax provision applies to a range of goods-producing sectors including mining (including oil and gas extraction), logging, farming, fishing and manufacturing, we have not included it in the database. It is noted, however, that in its March 2012 budget, the Government of Canada announced its intention to phase out the eligibility of oil and gas and mining activities for this regional credit over a four-year period.

Federal government

Producer Support Estimate

Earned Depletion Allowance (data for 1991-)

This tax provision allowed oil and gas and mining corporations to claim additional deductions against their income tax base. Those additional deductions could generally equal up to 25% of the company's resource profits and were specifically meant to encourage further exploration and development. In practice, oil and gas and mining companies investing in the exploration and development of mineral resources in Canada were able to claim depletion allowances in addition to other available deductions such as those for Canadian Exploration Expense and Canadian Development Expense (see below), thereby obtaining overall deductions in excess of the total amounts actually spent on exploration and development (e.g. for as much as 133% of these amounts). Unclaimed depletion allowances could be accumulated in a pool to be carried forward indefinitely. Although the measure was phased out on 1 January 1990, unclaimed allowances from the pool were still giving rise to limited annual tax expenditures on a cash-flow basis as of 2011.

Because this measure applies to the mining sector as a whole, for this and similar measures, we deduct from the annual amounts reported in official tax-expenditure documents the estimated share associated with mining output that is not concerned with fossil fuels. This is done using gross output data from the OECD's STAN database on the assumption that the tax expenditure is evenly distributed across sub-sectors according to output. The remaining amounts are then allocated to the various types of fossil fuels (i.e. crude oil, natural gas, and coal) using production data from the IEA's Energy Balances.

Sources: Department of Finance Canada (various years), Natural Resources Canada (2010[a]), IEA, OECD.

Tag: CAN_te_01

Excess of Resource Allowance over Non-Deductibility of Royalties (data for 1993-2006)

Starting in 1976, oil and gas and mining companies operating in Canada were able to deduct a fixed percentage (25%) of their annual resource profits from their taxable income. This provision was meant to compensate companies for the non-deductibility of government royalties (which in Canada are primarily levied at the province level) that had been in place since 1974. In practice, the resource allowance sometimes exceeded the amount of royalties paid to the provinces. It was decided to phase out this provision over a five-year period starting in 2003. Government royalties, therefore, are now once again deductible from the income tax base.

Because royalties are often treated as operating expenses and in order to ensure a consistent reporting across countries, we consider here the net fiscal cost of the resource

allowance. This is consistent with Canadian tax-expenditure accounts, which subtract from the total revenue foregone the revenues that arise due to the non-deductibility of provincial royalties. This yields positive tax expenditures for most of the period under consideration.

Since this measure applies to the mining sector as a whole, we deduct from the annual amounts reported in official tax-expenditure documents the estimated share associated with mining output that is not concerned with fossil fuels. This is done using gross output data from the OECD's STAN database. The remaining amounts are then allocated to the various types of fossil fuels (i.e. crude oil, natural gas, and coal) using production data from the IEA's Energy Balances.

Sources: Department of Finance Canada (various years), Natural Resources Canada (2010[a]), IEA, OECD.

Tag: CAN_te_02

Canadian Exploration Expense (no data available)

The Canadian Exploration Expense (CEE) provision allows oil and gas and mining companies to deduct exploration expenses in full (100%) in the year in which they are incurred. Exploration expenses include the costs of geological surveys and exploratory drilling, whether successful or unsuccessful. For the mining sector (including oil sands mines and coal mines, but not including conventional oil and gas), CEE also includes intangible costs incurred for the purpose of bringing a mine into production, such as clearing land or removing overburden, described as "pre-production development costs." Unclaimed deductions can be carried forward indefinitely.

The notes to Canada´s tax expenditure accounts remark that the costs of development, of successful exploration and, potentially, of some unsuccessful exploration would not be immediately deductible in the benchmark tax system. Canada does not, however, produce annual estimates of the revenue foregone due to the CEE.

In its 2011 budget, the Canadian government announced that development expenses incurred for the purpose of bringing a new oil-sands mine into production, currently immediately deductible as CEE, will in future be treated as Canadian development expenses (CDE), deductible at a rate of 30% per year. This will align the deduction rates for pre-production development costs in oil-sands mines with the rates applicable to in situ oil-sands projects and the conventional oil and gas sector. The change will be phased in over the 2013-2016 period.

Sources: Department of Finance Canada (various years), Government of Canada (2011), Natural Resources Canada (2010[a]).

Canadian Development Expense – Oil Sands Property (no data available)

In the conventional oil and gas sector, the cost of acquiring rights to explore for, drill or extract oil or natural gas, or to acquire an oil or natural-gas well or other resource property, is treated for tax purposes as Canadian oil and gas property expense (COGPE). COGPE is deductible at the rate of 10% per year on a declining balance basis. By contrast, the cost of acquiring oil sands leases and other oil sands resource property generally could be treated as Canadian development expense (CDE), which is deductible at the rate of 30% per year on a declining balance basis.

In its 2011 budget, the government of Canada announced a reduction in the deduction rate for resource rights in the oil sands sector to the 10% rate that applies to resource rights in the conventional oil and gas sector (COGPE). This change was cited as one that would "improve fairness and neutrality of the taxation of oil sands relative to other sectors." The

government estimates that this change, together with the change described above in respect of development costs for oil-sands mines, will save an amount of revenues rising to CAD 75 million per year in 2015-16, and generate total savings of CAD 220 million over the next five years.

Sources: Department of Finance Canada (various years), Government of Canada (2011), Natural Resources Canada (2010[a]).

Flow-Through Share Deductions (data for 1996-)

Flow-through shares were introduced in some form as early as the 1950s to help finance the production of oil, gas, and other minerals. Under current rules, companies that have incurred exploration and development expenses (see "Canadian Exploration Expense" and "Canadian Development Expense" above) can issue flow-through shares to transfer to investors deductions in respect of those expenses up to the value of the share. Investors thus acquire both an equity interest in the issuing company and a tax deduction. This makes it easier for resource companies to attract capital, and thus favours investment in exploration and development of resources. A tax expenditure arises to the extent that the deduction is taken earlier than it otherwise would have been taken, or is claimed at a higher rate (e.g. because the investor is subject to a tax rate higher than the issuing company).

The amount of benefit provided to producers by this measure is indirect and depends on the degree to which it attracts incremental capital investment to the sector. The tax-expenditure estimates for this measure are the cost to the government of allowing investors (individuals and corporations, not necessarily engaged in the fossil-fuel sector) to deduct, in calculating their taxable income, expenses renounced by corporations. They represent the cost to the government of providing the support, rather than the value of the benefit received by corporations in the sector.

Canada's Department of Finance changed the way it estimates and reports the annual revenue foregone due to this tax provision in the 2008 and 2010 editions of its tax-expenditure report. This results in a break in the time series in terms of how the information is reported in 2003 and again in 2005. The reports caution that the figures for years before 2003 over-state the tax expenditure in that they include resource deductions claimed by individuals other than via flow-through shares, while the figures for years before 2005 do not take into account the special rules that apply to the taxation of gains on the disposition of flow-through shares.

Estimates for this particular measure comprise both the annual revenue foregone associated with the personal income tax and that associated with the corporate income tax. Because the measure applies to the mining sector as a whole, we deduct from the annual amounts reported in official tax-expenditure documents the estimated share associated with mining output that is not concerned with fossil fuels. This is done using gross output data from the OECD's STAN database. The remaining amounts are then allocated to the various types of fossil fuels (i.e. crude oil, natural gas, and coal) using production data from the IEA's Energy Balances.

Sources: Department of Finance Canada (various years), Government of Canada (2011), Natural Resources Canada (2010[a]), IEA, OECD.

Tag: CAN_te_03

Reclassification of Expenses Under Flow-Through Shares (data for 1996-)

Starting in 1992, junior oil and gas companies (having less than CAD 15 million worth of taxable capital employed in Canada) have been able to reclassify each year a limited amount of development expenses as exploration expenses when they are transferred to investors under flow-through shares (see "Flow-Through Share Deductions" above). Exploration expenses can be deducted in full in the year in which they are incurred while development expenses can be deducted at 30% per year. This has the effect of accelerating the tax deductions obtained by investors who acquire flow-through shares, thereby making it easier for oil and gas companies to raise capital. The amount of development expenses that can be reclassified as exploration expenses is currently capped at CAD 1 million per company.

The benefit provided to producers by this measure is indirect and depends on the degree to which it attracts incremental capital investment to the sector. The tax-expenditure estimates for this measure are the cost to the government of allowing investors (individuals and corporations, not necessarily engaged in the fossil-fuel sector) to deduct, in calculating their taxable income, Canadian exploration expenses instead of Canadian development expenses. They represent the cost to the government of providing the support, rather than the value of the benefit received by corporations in the sector.

Canada's Department of Finance changed the way it estimates and reports the annual revenue foregone due to this tax provision in the 2008 edition of its tax-expenditure report. This results in a break in the time series in terms of how the information is reported around 2003, at which time the new data become available.

Estimates for this particular measure comprise both the annual revenue foregone associated with the personal income tax and that associated with the corporate income tax. We use production data from the IEA's Energy Balances to allocate these annual estimates to oil and natural-gas extraction.

Sources: Department of Finance Canada (various years), Natural Resources Canada (2010[a]), IEA.

Tag: CAN_te_04

Accelerated Capital Cost Allowance (limited data for 2007-)

Most machinery, equipment and structures used to produce income from a mine or an oil-sands project, are eligible to be deducted at a capital cost allowance (CCA) rate of 25% per year under CCA Class 41. This rate also applies to assets owned by a mineral-resource owner that are used in the initial processing of ore from the mineral resource or in the upgrading of bitumen (the oil-sands product) from the mineral resource into synthetic crude oil. In addition to the regular CCA deduction, an accelerated CCA has been provided since 1972 for assets acquired for use in new mines, including oil-sands mines, and major mine expansions (i.e. those that increase the capacity of a mine by at least 25%). This provision allows a company to deduct as early as the year in which the asset is available for use up to the full amount of the remaining capital cost, not exceeding the taxpayer's income for the year from the project (calculated after deducting the regular CCA deductions). In 1996, this accelerated CCA was extended to in-situ oil sands projects, which use oil wells rather than mining techniques to extract bitumen. The 1996 changes also extended the accelerated CCA to expenditures on eligible assets acquired in a taxation year for use in a mine or oil-sands project, to the extent that the cost of those assets exceeds 5% of the gross revenue for the year from the mine or project.

The Canadian 2007 budget announced the phase-out of the accelerated CCA for oil-sands projects — leaving in place the regular 25% CCA rate for these assets. To ensure a stable

investment climate, the existing accelerated CCA was grandfathered for oil-sands assets acquired before 2012 in project phases that commenced major construction prior to the Budget announcement. For other assets, companies maintained the ability to claim accelerated CCA until 2010, with the rate being gradually reduced between 2011 and 2015. The accelerated CCA for mines other than oil sands mines is not affected by this phase-out.

The government of Canada does not produce annual estimates of the revenue foregone due to the accelerated capital cost allowance for mines and oil sands projects. It has stated, however, that the estimated cost of the provision in the oil-sands sector (which is being phased out), was forecast at the time of the announcement to be on the order of CAD 300 million per year over the period from 2007 to 2011, before the beginning of the phase-out. The government noted, however, that the value can vary considerably from one year to another based on project and industry factors.

Sources: Department of Finance Canada (various years), Department of Finance Canada (2007), Department of Finance Canada (2008), Natural Resources Canada (2010[a]).

Tag: CAN_te_06

Syncrude Remission Order (data for 1991-2010)

The Syncrude project is a joint venture set up in the 1970s to exploit some of the oil sands that are located in the province of Alberta. The Syncrude Remission Order was enacted in 1976 to allow investors participating in the Syncrude project to deduct both royalties and the resource allowance from their income-tax base (see also "Excess of Resource Allowance over Non-Deductibility of Royalties" above). This initial agreement had a built-in phase-out mechanism through which deductions would cease when cumulative production reaches 2.1 billion barrels or on 31 December 2003 at the latest.

We allocate this measure entirely to oil sands. Data come from Canada's Department of Finance up to 1995 and from the Public Accounts of Canada thereafter. Because the Syncrude Remission Order expired in 2003, positive and negative cash transfers in the following years could be related to delays in filing, assessing and processing remissions to the venture participants.

Sources: Department of Finance Canada (various years), Natural Resources Canada (2010[a]), Public Accounts of Canada (various years).

Tag: CAN_te_05

General Services Support Estimate

Petroleum Technology Research Centre (data for 1999-)

The Petroleum Technology Research Centre (PTRC) was set up in 1998 to conduct research connected to enhanced oil recovery techniques and carbon capture and storage. The PTRC is primarily co-funded on a project basis by the government of Saskatchewan, the federal government of Canada, the US Department of Energy, and the industry.

We report here public funding coming from all levels of government (thus excluding industry funding). We use production data from the IEA's Energy Balances to allocate the annual amounts reported in budget documents to oil and natural-gas extraction. The measure is attributed to the GSSE as it does not increase current production or consumption of oil and natural gas. It also benefits the oil and gas industry as a whole.

Sources: Petroleum Technology Research Centre (various years), Natural Resources Canada, Government of Saskatchewan, IEA.

Tag: CAN_dt_03

Alberta

Producer Support Estimate

[Alberta] Energy Industry Drilling Stimulus (data for 2009-2010)

The province of Alberta introduced this initiative in 2009 on a temporary basis to support the production of oil and natural gas. It comprises two different programmes, both of which reduce the amounts of provincial royalties that are to be paid by producers. The Drilling Royalty Credit for new oil and gas wells provides them with a CAD 200 royalty credit per metre drilled. A cap is, however, set on the amount of credit a company can receive, with the limit being contingent on the production levels from the preceding year. Meanwhile, the New Well Incentive Program sets a maximum royalty rate of 5% for the first 50 000 barrels of oil produced (500 000 thousand cubic feet for natural gas). Although the Energy Industry Drilling Stimulus was initially designed to last for one year only, the government of Alberta subsequently prolonged the initiative before it then expired on 31 March 2011.

Some fiscal measures related to oil and gas production may not constitute tax expenditures under an alternative baseline where royalties (or severance taxes) vary with market conditions and production costs. We include here the annual amounts of negative revenues as reported by Alberta Energy (various years).

We use province-level data from the Canadian Association of Petroleum Producers (CAPP) on the value of oil and gas production to allocate the annual amounts reported in budget documents to oil and natural-gas extraction.

Sources: Alberta Energy (various years), CAPP.

Tag: CAN_te_07

[Alberta] Alberta Royalty Tax Credit (data for 1997-2007)

The Alberta Royalty Tax Credit (ARTC) was introduced in 1974 at the time when provincial royalties were made non-deductible for income-tax purposes (see also "Excess of Resource Allowance over Deductibility" above). It provided all Alberta Crown royalty payers with a royalty credit, calculated at a specified percentage of the lesser of Crown royalties paid to the province of Alberta in the year or a specified annual maximum amount of qualifying royalties. The ARTC was eliminated in 2007 when Crown royalties again became fully deductible for federal and provincial income-tax purposes.

Some fiscal measures related to oil and gas production may not constitute tax expenditures under an alternative baseline where royalties (or severance taxes) vary with market conditions and production costs. We include here the annual amounts of negative revenues as reported by Alberta Energy (various years).

We use province-level data from CAPP on the value of oil and gas production to allocate the annual amounts reported in budget documents to oil and natural-gas extraction.

Sources: Alberta Energy (various years), CAPP.

Tag: CAN_te_08

[Alberta] Alberta Crown Royalty Reductions (data for 2001-)

The province of Alberta offers several royalty-reduction programmes that target specific types of oil and natural-gas projects. Although a detailed breakdown by programme is not available, this item includes measures for enhanced oil recovery projects and low-productivity and reactivated wells. The Ministry of Energy's Annual Report for FY2010/11 mentions that the province of Alberta operates seven such programmes (excluding the Energy Industry Drilling Stimulus described above).

Some fiscal measures related to oil and gas production may not constitute tax expenditures under an alternative baseline where royalties (or severance taxes) vary with market conditions and production costs. We include here the annual amounts of negative revenues as reported by Alberta Energy (various years).

We use province-level data from CAPP on the value of oil and gas production to allocate the annual amounts reported in budget documents to oil and natural-gas extraction.

Sources: Alberta Energy (various years), CAPP.

Tag: CAN_te_09

Consumer Support Estimate

[Alberta] Alberta Farm Fuel Distribution Allowance (data for 1999-)

This programme provides farmers in the province of Alberta with a CAD 0.06 per-litre grant on their purchases of marked (i.e. dyed) diesel and heating fuel. It is generally provided upfront at time of sale.

Sources: Government of Alberta (various years), Alberta Agriculture and Rural Development (various years).

Tag: CAN_dt_02

[Alberta] Alberta Tax Exempt Fuel Use Program (data for 2000-)

Sales of marked fuel to be used in eligible, unlicensed off-road vehicles in the province of Alberta are exempted from the provincial fuel tax usually levied on sales of petroleum products (CAD 0.09 per litre in Alberta). This tax exemption is generally provided upfront at time of sale. In 2011, the government of Alberta narrowed the range of exempted uses to unlicensed vehicles.

Sources: Government of Alberta (various years).

Tag: CAN_te_10

[Alberta] Alberta Farm Fuel Benefit (data for 2000-)

The Alberta Farm Fuel Benefit programme exempts fuel purchased by farmers in the province of Alberta from the provincial fuel tax. As set out by the Fuel Tax Act and the Fuel Tax Regulations, marked tax-exempt fuel can be used by farmers for farming operations in Alberta if all the specified criteria are met. Fuel may be used in licensed (e.g. farm trucks) and unlicensed vehicles.

Sources: Government of Alberta (various years), Legislative Assembly of Alberta (2000).

Tag: CAN_te_55

General Services Support Estimate

[Alberta] Orphan Well Fund (data for 2009-2010)

This one-off Alberta programme was introduced in 2009 along with the Energy Industry Drilling Stimulus (see above). It provided funding for the cleaning up of old, "legacy" oil and gas wells on the grounds that this would free up industry resources. The measure applied primarily to those sites where no distinct party can be held liable, i.e. orphan wells. Funds were administered by the Orphan Well Association which normally levies a fee on the upstream oil and gas industry to pay for the cleaning up and reclamation of sites. The present item only covers additional funding from the government of Alberta.

Estimates are based on a single CAD 30 million appropriation that we split evenly between 2009 and 2010. This comes from the fact that the appropriated sum had to be spent no later than 31 March 2011. We use province-level data from CAPP on the value of oil and gas production to allocate the annual amounts reported in budget documents to oil and natural-gas extraction. The measure is attributed to the GSSE as it does not increase current production or consumption of oil and natural gas.

Sources: Alberta Energy (various years), Orphan Well Association (2010), CAPP.

Tag: CAN_dt_01

British Columbia

Producer Support Estimate

[British Columbia] Fuel-Tax Exemption for Transmitting Waste Gas (data for 1999-)

The use of natural gas in compressors used to transmit waste gas from gas-processing plants to wellheads (and vice versa) in British Columbia is exempt from the province's fuel tax.

We allocate this measure entirely to natural gas.

Sources: Government of British Columbia (various years).

Tag: CAN_te_18

[British Columbia] Deep Drilling Credit (data for 2006-)

This measure was introduced in 2002 to encourage the drilling of deep, high-cost wells in the province of British Columbia. The credit has since been increased by 15% in the case of deep natural-gas drilling and broadened to cover certain horizontal wells following the introduction of BC's Oil and Gas Stimulus Package in 2009.

Some fiscal measures related to oil and gas production may not constitute tax expenditures under an alternative baseline where royalties (or severance taxes) vary with market conditions and production costs. We include here the annual amounts of negative revenues as reported by the Government of British Columbia (various years).

We allocate this measure entirely to natural gas.

Sources: Government of British Columbia (various years).

Tag: CAN_te_19

[British Columbia] Summer Drilling Credit (data for 2006-)

This measure was introduced in 2003 by the province of British Columbia to encourage the drilling of hydrocarbons over the summer season. The winter season usually provides for a better terrain owing to the cold temperatures that make the ground more adapted to moving around heavy machinery.

Some fiscal measures related to oil and gas production may not constitute tax expenditures under an alternative baseline where royalties (or severance taxes) vary with market conditions and production costs. We include here the annual amounts of negative revenues as reported by the Government of British Columbia (various years).

We use province-level data from CAPP on the value of oil and gas production to allocate the annual amounts reported in budget documents to oil and natural-gas extraction.

Sources: Government of British Columbia (various years), CAPP.

Tag: CAN_te_20

[British Columbia] Marginal and Ultramarginal Credit (data for 2006-2007)

A first version of the Marginal and Ultramarginal Credit was introduced in 2003 to encourage the drilling of high-cost, marginal natural-gas wells in the province of British Columbia. The programme was then extended to ultramarginal natural-gas wells.

Some fiscal measures related to oil and gas production may not constitute tax expenditures under an alternative baseline where royalties (or severance taxes) vary with market conditions and production costs. We include here the annual amounts of negative revenues as reported by the Government of British Columbia (various years).

We allocate this measure entirely to natural gas.

Sources: Government of British Columbia (various years).

Tag: CAN_te_21

[British Columbia] Road and Pipeline Infrastructure Credit (data for 2006-)

This measure was introduced in 2003 by the province of British Columbia to promote the construction of roads, pipelines, and associated facilities in relation to oil and gas extraction, with a view to increasing new capital investment to further develop the province's fossil resources. The programme allows oil and gas companies to deduct as much as 50% of the cost of eligible infrastructure projects against royalties otherwise payable to the province.

Some fiscal measures related to oil and gas production may not constitute tax expenditures under an alternative baseline where royalties (or severance taxes) vary with market conditions and production costs. We include here the annual amounts of negative revenues as reported by the Government of British Columbia (various years).

We use province-level data from CAPP on the value of oil and gas production to allocate the annual amounts reported in budget documents to oil and natural-gas extraction.

Sources: Government of British Columbia (various years), CAPP.

Tag: CAN_te_22

[British Columbia] Other Royalty Exemptions and Holidays (data for 1995-2001)

This item covers several royalty-reduction programmes that have been introduced over the years in the province of British Columbia, but excluding those that have already been included in the present inventory. The exact number of schemes underlying this item has varied over time, but includes the Natural Gas Royalty Reduction and the Discovery Oil Royalty Holiday.

Some fiscal measures related to oil and gas production may not constitute tax expenditures under an alternative baseline where royalties (or severance taxes) vary with market conditions and production costs. We include here the annual amounts of negative revenues as reported by the Government of British Columbia (various years).

We use province-level data from CAPP on the value of oil and gas production to allocate the annual amounts reported in budget documents to oil and natural-gas extraction.

Sources: Government of British Columbia (various years), CAPP.

Tag: CAN_te_23

[British Columbia] Mineral Tax Framework (no data available)

The mining of coal in British Columbia is subject to taxation under the province's Mineral Tax Act, which provides for a particular tax system approximating cash-flow taxation.[4] Under this system, the tax rate facing coal-mining companies in any given year is determined by comparing all cumulative revenues and expenditures (including capital costs) over the life of the project. Investment expenditures are therefore entirely deductible in the year in which they are incurred. Interest charges and other costs of financing are not, however, deductible for mineral-tax purposes.

Since the immediate expensing of exploration, development and other capital costs is a standard feature of taxes that approximate cash-flow taxation like BC's mineral tax, this treatment may not be preferential in the particular case of BC's mineral tax.

However, some other features of BC's mineral tax system may still be considered preferential depending on which benchmark is used. For example, the New Mine Allowance allows mining companies to deduct as much as 133% of eligible capital expenditures to encourage the development of new mines, while the Earned Depletion Tax Credit provides for reductions in mineral taxes to account for the depletion of coal deposits.

Sources: BC Ministry of Finance (2009).

[British Columbia] Mining Exploration Tax Credit (data for 1999-)

The British Columbia Mining Exploration Tax Credit (not to be confused with the federal Mineral Exploration Tax Credit) provides mining companies operating in the province of British Columbia with a 20% income-tax credit on qualifying exploration expenditures. The latter include expenses in relation to geological surveys, test pits, and other similar activities aimed at determining the existence, extent, and quality of mineral deposits. The measure applies to most minerals and, unlike the federal credit, coal, but it does not cover

4 Cash-flow tax systems are particular tax systems where "capital is costed by allowing an immediate write-off of investment expenditures at the time they are undertaken. No deductions for interest or depreciation are then permitted." Such systems can be theoretically equivalent to the more common imputed-income tax systems where the objective is to levy a neutral business tax (Boadway and Bruce, 1984).

exploration expenditures connected to oil and natural gas. Starting in February 2007, the rate of credit was increased to 30% in the particular case of the prescribed Mountain Pine Beetle affected areas.

Because this measure applies to the mining of both non-energy minerals and coal, we deduct from the annual amounts reported in official tax-expenditure documents the estimated share associated with mining output that is not concerned with coal. This is done using data from BC's Ministry of Energy and Mines on the value of minerals produced.

Sources: Government of British Columbia (various years), BC Ministry of Energy and Mines, IEA.

Tag: CAN_te_24

Consumer Support Estimate

[British Columbia] Sales-Tax Rebate for Motor Fuels (data for 2010-)

The Harmonized Sales Tax (HST) was introduced in the province of British Columbia in July 2010 to replace the previous Provincial Sales Tax (PST). The overall HST rate (12%) now comprises a federal part (5%) and a provincial part (7%), though several rebates exist that waive the provincial component of the tax for specific goods and services. This is the case with motor fuels, where point-of-sale rebates are available for: gasoline, ethanol, and gasoline blends; diesel fuel, biodiesel, and biodiesel blends (excluding heavy fuel oil); heating oil; locomotive fuel and marine diesel; and aircraft fuels. These fuels are, however, subject to a motor fuel tax and a carbon tax.

In late August 2011 the government of British Columbia announced that it would reinstate the old PST in accordance with the results of a referendum held earlier that month.

We use data from Natural Resources Canada on energy use in British Columbia's transport sector to allocate the annual amounts reported in budget documents to gasoline, diesel fuel, and kerosene-type jet fuel (the numbers for aviation gasoline and biofuels are negligible).

Sources: Government of British Columbia (various years), Natural Resources Canada (2010[b]).

Tag: CAN_te_25

[British Columbia] Residential Energy Credit (data for 2010-)

This measure exempts the use of energy in British Columbia's residential sector from the provincial part of the Harmonized Sales Tax that is normally levied on most sales of goods and services (see also "Sales-Tax Rebate for Motor Fuels"). It applies to electricity, natural gas, heating fuel, heat, steam, kerosene, propane, and firewood.

We use data from Natural Resources Canada on energy use in British Columbia's residential sector to allocate the annual amounts reported in budget documents to electricity, natural gas, heating oil, heat, steam, kerosene, propane, and firewood. We only report, however, the amounts attributable to natural gas (the numbers for coal, propane, and heating oil are negligible).

Sources: Government of British Columbia (various years), Natural Resources Canada (2010[b]).

Tag: CAN_te_26

[British Columbia] PST Exemption for Residential Fuels (data for 1995-2008)

Prior to the introduction of the Harmonized Sales Tax in July 2010 (see also "Sales-Tax Rebate for Motor Fuels"), the province of British Columbia applied a Provincial Sales Tax (PST) on purchases of most goods and services. Purchases of residential fuels were, however, exempted from the PST. The list of eligible fuels included electricity, natural gas, and fuel oil.

We use data from Natural Resources Canada on energy use in British Columbia's residential sector to allocate the annual amounts reported in budget documents to electricity, natural gas, heating oil, heat, steam, kerosene, propane, and firewood. We only report, however, the amounts attributable to natural gas (the numbers for coal, propane, and heating oil are negligible).

Sources: Government of British Columbia (various years), Natural Resources Canada (2010[b]).

Tag: CAN_te_27

[British Columbia] Fuel-Tax Exemption for Farm Trucks (data for 1995-)

This measure exempts sales of motor fuels for use in farm trucks (on-road) from British Columbia's Motor Fuel Tax, which is normally levied in the province on most sales of petroleum products for use in internal combustion engines.

We allocate this measure entirely to diesel fuel.

Sources: Government of British Columbia (various years).

Tag: CAN_te_28

[British Columbia] Fuel-Tax Exemption for Farmers (data for 2011-)

This measure exempts the use of motor fuels in farming activities from British Columbia's Motor Fuel Tax.

Data are only available starting in FY2011/12. We allocate this measure entirely to diesel fuel.

Sources: Government of British Columbia (various years).

Tag: CAN_te_29

General Services Support Estimate

[British Columbia] Funding for Geoscience BC (data for 2005-)

Geoscience BC, a non-governmental, not-for-profit organisation, was set up in April 2005 to encourage investment in minerals and hydrocarbons exploration in British Columbia through the collection and diffusion of geophysical data. It has attracted funding from the province's Ministry of Energy and Mines on several occasions, starting with an initial grant of CAD 25 million in 2005, and continuing with funding of CAD 11.7 million in 2008 and CAD 12 million in 2011.

Because this measure applies to BC's mining sector as a whole, we deduct from the annual amounts reported in Geoscience BC's financial statements the estimated share associated with mining output that is not concerned with fossil fuels. This is done using data from CAPP and BC's Ministry of Energy and Mines on the value of minerals and hydrocarbons produced. We allocate this measure to the GSSE since it benefits BC's oil and gas industry as a whole.

Sources: Geoscience BC (various years), BC Ministry of Energy and Mines, CAPP, IEA.

Tag: CAN_dt_06

[British Columbia] Heartlands Oil and Gas Road Rehabilitation (data for 2005-)

This measure forms part of British Columbia's transportation investment plan and aims to improve transport infrastructure in relation to hydrocarbons extraction. One declared aim of the programme is to "lengthen the winter drilling season".

We allocate this measure to the GSSE as it benefits BC's oil and gas industry as a whole. We use province-level data from CAPP on the value of oil and gas production to allocate the annual amounts reported in budget documents to oil and natural-gas extraction.

Sources: Government of British Columbia (various years), CAPP.

Tag: CAN_dt_07

Manitoba

Producer Support Estimate

[Manitoba] Manitoba Drilling Incentive Program (no data available)

This measure was first introduced on a temporary basis in 1992 to encourage the drilling of new wells and certain existing ones in the province of Manitoba. It has since been prolonged, with the latest renewal due to end in 2014. It provides petroleum companies operating in the province with a "holiday oil volume", i.e. an exemption from Crown royalties and freehold production taxes that applies until the amount of oil extracted from a given well reaches a pre-determined level. The programme itself comprises six different sub-programmes, each targeting specific types of wells: the New Well Incentive, the Deep Drilling Incentive, the Horizontal Well Incentive, the Marginal Well Major Workover Incentive, the Injection Well Incentive, and the Holiday Oil Volume Account.

Some fiscal measures related to oil and gas production may not constitute tax expenditures under an alternative baseline where royalties (or severance taxes) vary with market conditions and production costs.

No estimates are available for this particular programme and its sub-components.

Sources: Manitoba Innovation, Energy and Mines (2008).

[Manitoba] Sales-Tax Exemption for Exploration Equipment (data for 2006-)

This measure exempts from Retail Sales Tax purchases of eligible equipment used in conducting geophysical surveys and exploring for oil and gas resources. Manitoba's Retail Sales Tax (7%) is normally levied on sales of most goods and services in the province. This tax provision was introduced in 2006 with a view to supporting the oil and gas industry. Eligible equipment includes drill rigs, rig components, mobile equipment used in seismic exploration, and associated services such as well stimulation.

Province-level data from CAPP on the value of oil and gas production indicate that crude oil only is produced in significant quantities in the province of Manitoba. For that reason, we allocate this measure entirely to crude oil.

Sources: Manitoba Finance (various years).

Tag: CAN_te_30

Consumer Support Estimate

[Manitoba] Sales-Tax Exemption for Natural Gas (data for 2003-)

The use of reticulated natural gas for residential-heating purposes in Manitoba is exempt from the province's Sales Tax (7%), which is normally levied on sales of most goods and services.

Sources: Manitoba Finance (various years).

Tag: CAN_te_31

[Manitoba] Fuel-Tax Exemption for Marked Diesel and Gasoline (data for 2003-)

Sales of marked (i.e. dyed) diesel fuel and gasoline in Manitoba are exempt from the province's Fuel Tax, which is normally levied on most sales of petroleum products.

We use data from Natural Resources Canada on energy use in Manitoba's farming sector to allocate the annual amounts reported in budget documents to diesel fuel and gasoline.

Sources: Manitoba Finance (various years), Natural Resources Canada (2010[b]).

Tag: CAN_te_32

New Brunswick

Consumer Support Estimate

[New Brunswick] Petroleum Products Pricing Act (no data available)

The Petroleum Products Pricing Act was introduced in 2006 by the government of New Brunswick. It provides for the setting of a cap on prices for automotive fuels and heating fuels (furnace oil and propane) in the province. The New Brunswick Energy and Utilities Board, the province's energy regulator, sets this cap on a weekly basis based on a benchmark taking into account average world prices.

No data are available for this particular measure.

Sources: Energy and Utilities Board (2012).

[New Brunswick] Gasoline and Motive Fuel Tax Refunds (data for 2007-)

This measure comprises excise-tax refunds granted to certain users of petroleum products in the province of New Brunswick. Products subject to those refunds range from gasoline to diesel fuel, heating oil, propane, natural gas, and kerosene. Eligible users include sectors such as forestry, farming, fishing, manufacturing, mining and quarrying, electricity generation, and the residential sector.

We use data from Natural Resources Canada on energy use in the Atlantic Provinces[5] for three sectors (residential, industrial, and agriculture) to allocate the annual amounts reported in official documents to heating oil, natural gas, propane, fuel oil, kerosene, gasoline, and diesel fuel.

Sources: NB Department of Finance (various years), Natural Resources Canada (2010[b]).

Tag: CAN_te_46

5 Detailed data at the level of the province of New Brunswick are only available for a few sectors.

[New Brunswick] Diesel-Fuel Equivalent Tax-Reduction Rebates (data for 2007-)

This measure provides certain users in the province of New Brunswick with fuel-tax refunds on their purchases of diesel fuel.

Sources: NB Department of Finance (various years).

Tag: CAN_te_47

[New Brunswick] Home Energy Assistance Program (data for 2006-)

This programme was introduced in 2006 to provide low-income households in the province of New Brunswick with annual payments of CAD 100 to help them pay their energy bills.

Estimates for FY2008/09 are not available. We use data from Natural Resources Canada on energy use in New Brunswick's residential sector to allocate the annual amounts reported in official documents to electricity, heating oil, natural gas, propane, coal, and firewood. We only report, however, the amounts attributable to heating oil and natural gas (the numbers for coal and propane are negligible).

Sources: NB Department of Social Development (various years), Natural Resources Canada (2010[b]).

Tag: CAN_dt_11

[New Brunswick] Fuel Supplement (data for 2005-)

The Fuel Supplement provides eligible households in the province of New Brunswick with monthly payments to help them cope with heating costs during the winter season (November to April). Eligibility is contingent upon meeting a certain set of criteria related to accommodation, income, and family status.

We use data from Natural Resources Canada on energy use in New Brunswick's residential sector to allocate the annual amounts reported in official documents to electricity, heating oil, natural gas, propane, coal, and firewood. We only report, however, the amounts attributable to heating oil and natural gas (the numbers for coal and propane are negligible).

Sources: NB Department of Social Development (various years), Natural Resources Canada (2010[b]).

Tag: CAN_dt_12

Newfoundland and Labrador

Producer Support Estimate

[Newfoundland and Labrador] Oil and Gas Export Development Fund (data for 2008-)

This programme was introduced in 2008 by the province of Newfoundland and Labrador to help finance specific investment projects connected to the marketing and export of equipment and services used in the oil and natural-gas industry. Its stated aims are to increase companies' export capabilities and opportunities, and encourage technology transfer. Eligible companies can receive grants covering up to 50% of a project's total costs.

We use province-level data from CAPP on the value of oil and gas production to allocate the annual amounts reported in budget documents to oil and natural-gas extraction.

Sources: Government of Newfoundland and Labrador (various years), CAPP.

Tag: CAN_dt_08

Consumer Support Estimate

[Newfoundland and Labrador] NL Energy Rebate (data for 2011-)

This measure was introduced in October 2011 to provide Newfoundland and Labrador's residential sector with a rebate of Harmonized Sales Tax (HST) on the sector's energy purchases. The HST was established in April 1997 to replace the former federal GST and the province's old sales tax. Under the general HST regime, a 13% rate of tax applies to sales of most goods and services in Newfoundland and Labrador. The energy rebate amounts to 8%, which corresponds to the provincial portion of the overall 13% HST rate. Energy products that are eligible for the rebate include electricity, heating oil, propane, and wood.

We use data from Natural Resources Canada on energy use in Newfoundland and Labrador's residential sector to allocate the annual amounts reported in budget documents to electricity, heating oil, coal, propane, and firewood. We only report, however, the amounts attributable to heating oil (the numbers for coal and propane are negligible).

Sources: Government of Newfoundland and Labrador (various years), Natural Resources Canada (2010[b]).

Tag: CAN_te_33

[Newfoundland and Labrador] Gas-Tax Exemption for Farming (data for 2004-)

Sales of motor fuels in Newfoundland and Labrador are exempt from the province's Motive Fuel Tax when used in internal combustion engines for farming, fishing, or logging purposes.

We allocate this measure entirely to gasoline since it does not apply to marked diesel fuel.

Sources: Government of Newfoundland and Labrador (various years).

Tag: CAN_te_34

[Newfoundland and Labrador] Gas-Tax Exemption for Vessels (data for 2006-)

Sales of motor fuels in Newfoundland and Labrador are exempt from the province's Motive Fuel Tax when used in vessels navigating on regularly scheduled routes.

We allocate this measure entirely to diesel fuel and light fuel oil.

Sources: Government of Newfoundland and Labrador (various years).

Tag: CAN_te_35

[Newfoundland and Labrador] Gas-Tax Exemption for Electricity Generation (data for 2004-)

Sales of motor fuels in Newfoundland and Labrador are exempt from the province's Motive Fuel Tax when used for electricity-generation purposes.

We allocate this measure entirely to diesel fuel and light fuel oil.

Sources: Government of Newfoundland and Labrador (various years).

Tag: CAN_te_36

[Newfoundland and Labrador] Gas-Tax Exemption for Municipalities (data for 2004-)

Sales of motor fuels in Newfoundland and Labrador are exempt from the province's Motive Fuel Tax when used by municipal governments.

Documentation on fuel use by local administrations suggests that the use of gasoline may be twice that of diesel. Vehicles used by police forces, and smaller fire and rescue vehicles, tend to run on gasoline, whereas larger fire trucks, garbage trucks, heavy-duty road-working equipment and snow ploughs tend to have diesel-powered engines. Consequently, we use this ratio (2:1) to split the reported amounts between those two types of motor fuel.

Sources: Government of Newfoundland and Labrador (various years).

Tag: CAN_te_37

[Newfoundland and Labrador] NL Home Heating Rebate Program (data for 2001-)

This programme provides low-income households in the province of Newfoundland and Labrador with annual rebates on their heating bills. Households must have had incomes equal to or below CAD 40 000 in 2010 in order to qualify for the rebate. Payments are capped at CAD 250 per household and year (CAD 500 in some coastal Labrador communities). Eligible households must file an application and present their electricity or heating-oil bills.

We use data from Natural Resources Canada on energy use (space heating only) in Newfoundland and Labrador 's residential sector to allocate the annual amounts reported in budget documents to electricity, heating oil, coal, propane, and wood. We only report, however, the amounts attributable to heating oil (the numbers for coal and propane are negligible).

Sources: Government of Newfoundland and Labrador (various years), Natural Resources Canada (2010[b]).

Tag: CAN_dt_09

General Services Support Estimate

[Newfoundland and Labrador] Petroleum Exploration Enhancement Program (no data available)

As part of its Provincial Energy Plan released in 2007, the province of Newfoundland and Labrador introduced a new initiative aimed at boosting the onshore exploration for hydrocarbons in Western Newfoundland. The Petroleum Exploration Enhancement Program (PEEP) is a CAD 5 million, two-year initiative that provides funding for the improvement of geophysical data in relation to the province's underground oil and gas resources. The programme has since been extended to last more than two years.

We allocate this measure to the GSSE as it benefits NL's oil and gas industry as a whole. Annual estimates of total provincial funding for this programme are not, however, available.

Sources: NL Department of Natural Resources (2007).

[Newfoundland and Labrador] Offshore Development Fund (no data available)

This measure was introduced following the signature of the 1985 Canada-Newfoundland Atlantic Accord, which organised the joint management of the province's offshore oil

resources. As provided by the Accord, the federal government and the province of Newfoundland and Labrador established the Offshore Development Fund to attract offshore oil investment in the province. Initial funding of CAD 300 million was split between the federal government (75%) and the province (25%), with much of it being dedicated to creating a pool of workers through training initiatives. The fund was discontinued after 2005 when the Accord was renegotiated.

We allocate this measure to the GSSE as it benefitted NL's oil and gas industry as a whole. Annual estimates of total provincial funding for this programme are not, however, available.

Sources: Government of Newfoundland and Labrador (1985).

Nova Scotia

Consumer Support Estimate

[Nova Scotia] Your Energy Rebate (data for 2006-)

This programme was introduced in 2006 by the government of Nova Scotia to provide households with an 8% sales-tax rebate on their heating bills. The measure applies irrespective of whether heating comes from electricity, heating oil, propane, firewood, or coal. It is also not tied to income.

We use data from Natural Resources Canada on energy use (space heating only) in Nova Scotia's residential sector to allocate the annual amounts reported in budget documents to electricity, heating oil, coal, propane, and wood. We only report, however, the amounts attributable to heating oil, propane, and coal.

Sources: Nova Scotia Finance (various years), Natural Resources Canada (2010[b]).

Tag: CAN_te_16

Ontario

Consumer Support Estimate

[Ontario] Fuel-Tax Exemption for Coloured Fuel (data for 2005-)

Sales of coloured fuel in Ontario are exempt from the province's Fuel Tax (CAD 0.143 per litre) that is normally levied on most sales of diesel fuel. Users of coloured (dyed) fuel include sectors such as construction, farming, forestry, fishing, and electricity generation.

We allocate this measure entirely to diesel fuel and light fuel oil.

Sources: Ontario Ministry of Finance (various years).

Tag: CAN_te_38

[Ontario] Fuel-Tax Reduction for Railway Diesel (data for 2005-)

The use of diesel fuel in railway locomotives in the province of Ontario benefits from a reduced rate of Fuel Tax (CAD 0.045 per litre).

Sources: Ontario Ministry of Finance (various years).

Tag: CAN_te_39

[Ontario] Fuel-Tax Refunds for Auxiliary Equipment (data for 2005-)

The use of fuel for "power take-off" purposes in Ontario attracts a full refund from the province's Fuel Tax. "Power take-off" means that fuel from the vehicle's fuel tank is used to power an external unit such as a refrigeration unit.

We allocate this measure entirely to diesel fuel and light fuel oil.

Sources: Ontario Ministry of Finance (various years).

Tag: CAN_te_40

[Ontario] Gasoline-Tax Reduction for Propane (data for 2005-)

Sales of propane in the province of Ontario are subject to a lower rate of Gasoline-Tax (CAD 0.043 per litre) than sales of conventional gasoline (CAD 0.147 per litre, which is the province's benchmark).

Sources: Ontario Ministry of Finance (various years).

Tag: CAN_te_41

[Ontario] Gasoline-Tax Exemption for Unlicensed Equipment (data for 2005-)

This measure was introduced prior to 1960 and exempts the use of gasoline in unlicensed equipment in Ontario from the province's Gasoline Tax. Unlicensed equipment includes, for example, eligible machinery used in forestry, farming, construction, and fishing.

We allocate this measure entirely to gasoline.

Sources: Ontario Ministry of Finance (various years).

Tag: CAN_te_42

[Ontario] Gasoline-Tax Exemption for Methanol and Natural Gas (data for 2007-)

Sales of methanol and natural gas for use in internal combustion engines in Ontario are exempted from the province's Gasoline Tax (CAD 0.147 per litre, which is the province's benchmark).

In the absence of data on the use of methanol in Ontario, we allocate this measure entirely to natural gas.

Sources: Ontario Ministry of Finance (various years).

Tag: CAN_te_43

[Ontario] Ontario Energy and Property Tax Credit (data for 2010-)

The energy component of the Ontario Energy and Property Tax Credit (OEPTC) was introduced in 2010 to provide low-income households who rent or own a home with sales-tax assistance for their purchases of energy. Although annual payments were initially capped at CAD 200 starting in 2010, this ceiling is to increase in line with price inflation every year.

We use data from Natural Resources Canada on energy use in Ontario's residential sector to allocate the annual amounts reported in budget documents to electricity, heating oil, natural gas, propane, and firewood. We only report, however, the amounts attributable to heating oil, propane, and natural gas.

Sources: Ontario Ministry of Finance (various years), Natural Resources Canada (2010[b]).

Tag: CAN_te_44

[Ontario] Sales-Tax Exemption for Energy Products (data for 2005-2008)

Prior to the introduction of the Harmonized Sales Tax in July 2010, the province of Ontario applied a Retail Sales Tax (RST; at a rate of 8%) on purchases of most goods and services. Purchases of certain energy products were, however, exempted from the RST. The list of eligible products included electricity, natural gas, fuel oil, diesel fuel, gasoline, propane, coal, coke, and firewood.

We use data from Natural Resources Canada on energy use in Ontario for four sectors (residential, commercial and institutional, agriculture, transport) to allocate the annual amounts reported in budget documents to electricity, heating oil, natural gas, propane, firewood, fuel oil, kerosene, gasoline, and diesel fuel. We only report, however, the amounts attributable to fossil fuels, thereby excluding those attributable to electricity and firewood.

Sources: Ontario Ministry of Finance (various years), Natural Resources Canada (2010[b]).

Tag: CAN_te_45

[Ontario] Northern Ontario Energy Credit (data for 2010-)

This programme was announced as part of Ontario's budget for FY2010/11. It provides low- and middle-income households who reside in the Northern part of the province with assistance for their purchases of energy. Although annual payments were initially capped at CAD 130 for a single person and CAD 200 for a family starting in 2010, this ceiling is to increase in line with price inflation every year.

We use data from Natural Resources Canada on energy use in Ontario's residential sector to allocate the annual amounts reported in budget documents to electricity, heating oil, natural gas, propane, and firewood. We only report, however, the amounts attributable to heating oil, propane, and natural gas.

Sources: Ontario Ministry of Finance (various years), Natural Resources Canada (2010[b]).

Tag: CAN_dt_10

Prince Edward Island

Consumer Support Estimate

[Prince Edward Island] Tax Exemption for Marked-Fuel Permits (data for 2005-)

This measure comprises provincial excise-tax exemptions granted to certain users of petroleum products in the province of Prince Edward Island. Products subject to those exemptions are gasoline and diesel fuel. In cases where marked exempt gasoline is unavailable, eligible users can apply for a rebate of the provincial excise tax on fuel. Eligible users must be valid permit holders using fuel in unlicensed equipment for activities such as farming, forestry, fishing, and aquaculture.

We use data from Natural Resources Canada on energy use in the Atlantic provinces' agriculture sector to allocate the annual amounts reported by PEI's Department of Finance, Energy and Municipal Affairs to gasoline and diesel fuel.

Sources: Prince Edward Island Department of Finance, Energy and Municipal Affairs, Natural Resources Canada (2010[b]).

Tag: CAN_te_54

Quebec

Producer Support Estimate

The province of Quebec does not currently produce fossil fuels on a significant scale, though some companies are actively exploring for oil in the Gaspe Peninsula. Exploration efforts are also concentrating on the province's potential for shale gas, mostly in the south (e.g. Basses-Terres du Saint-Laurent).

The refundable tax credit for resources (Crédit d'impôt remboursable relatif aux ressources) was introduced in March 2001 by the government of Quebec and provides eligible mining companies operating in the province with a refundable tax credit for up to 38.75% of qualifying exploration expenditure.[6] Qualifying exploration expenditure includes, *inter alia*, those expenses made with respect to oil and natural-gas, and which attract an additional 50% deduction for tax purposes.

While this measure benefits some companies engaged in the exploration for fossil fuels in Quebec, exploration expenditure in the province remains heavily oriented towards non-energy minerals. This measure is therefore deemed not specific enough to warrant inclusion in the present inventory, which would not preclude its inclusion at a later stage should fossil-fuel exploration further increase in scale.

Consumer Support Estimate

[Quebec] Fuel-Tax Reductions in Certain Regions (data for 1996-)

This item comprises two different measures that both act to reduce the rate of fuel tax in certain regions of the province of Quebec. One was introduced in 1982 and provides for a reduction in the rate of fuel tax applicable to sales of gasoline in regions bordering the United States or other Canadian provinces (Ontario and New Brunswick). The other measure dates back to 1985 and reduces the rate of fuel tax applicable to sales of gasoline and diesel fuel in regions that are distant from the province's main urban centres.

We allocate this measure entirely to gasoline given the small use of diesel fuel in Quebec's road transport sector.

Sources: Finances Québec (various years).

Tag: CAN_te_48

[Quebec] Fuel-Tax Reductions for Air and Rail Transport (data for 1996-)

Sales of gasoline and diesel fuel for use in aircraft and railway locomotive engines in the province of Quebec have attracted a reduced rate of fuel tax since 1972 for aircraft engines and 1980 for locomotives. Although a provincial fuel-tax exemption also exists for kerosene used by airlines in international flights, tax expenditures in relation to fuel used in international aviation fall outside the scope of the present inventory (Box 1.2).

6 The amount of credit that can be claimed depends on whether taxpayers are also engaged in the extraction of minerals or hydrocarbons, and on the region in which they operate (e.g. the Great North). This measure is not compatible with flow-through shares.

We use data from Natural Resources Canada on energy use in the province of Quebec's air and rail transport sector to allocate the annual amounts reported in budget documents to aviation gasoline and diesel fuel.

Sources: Finances Québec (various years), Natural Resources Canada (2010[b]).

Tag: CAN_te_49

[Quebec] Fuel-Tax Concessions for Certain Industrial Activities (no data available)

Sales of petroleum products for use in certain industrial activities in the province of Quebec benefit from exemptions or rebates of fuel tax. Eligible activities include the transformation of petroleum products into solvents for use in chemical processes and the use of gasoline and heavy fuels in stationary engines.

No estimates are available for this particular measure.

Sources: Finances Québec (various years).

[Quebec] Fuel-Tax Exemption for Propane Gas (no data available)

Sales of propane in the province of Quebec have been exempted from fuel tax since 1997. This measure is meant to encourage the greater use of LPG in road vehicles in the province.

No estimates are available for this particular measure.

Sources: Finances Québec (various years).

[Quebec] Fuel-Tax Rebates for Farming, Forestry and Mining (data for 1999-)

This measure was introduced in 1978 and provides the province of Quebec's farming, forestry and mining industries with refunds of fuel tax for their off-road operation of road vehicles.

We use data from Natural Resources Canada on energy use in the province of Quebec's agricultural sector to allocate the annual amounts reported in budget documents to gasoline and diesel fuel.

Sources: Finances Québec (various years), Natural Resources Canada (2010[b]).

Tag: CAN_te_50

[Quebec] Fuel-Tax Concessions for Farmers and Fishers (no data available)

Farmers and fishers operating in the province of Quebec are entitled to fuel-tax concessions on their purchases of fuel oil and gasoline for use in farming machinery or fishing boat engines. The concessions for gasoline and fuel oil were introduced in 1935 and 1972 respectively to reduce production costs in Quebec's primary industries.

No estimates are available for this particular measure but the associated revenue foregone is likely to be small (under CAD 2 million).

Sources: Finances Québec (various years).

[Quebec] Fuel-Tax Rebate for Public Carriers (data for 1999-)

Sales of motor fuels for use in public-transit buses in the province of Quebec benefit from a full refund of fuel tax. This measure started in 1984 as a partial rebate (33%) before it subsequently became a full one in 2006.

We allocate this measure entirely to diesel fuel given the small use of gasoline in buses in Quebec.

Sources: Finances Québec (various years).

Tag: CAN_te_51

[Quebec] Fuel-Tax Exemption for Commercial Vessels (no data available)

This provision was introduced in 1972 by the province of Quebec and exempts the use of residual fuel oil (i.e. bunker fuel) in commercial vessels from the provincial fuel tax.

No estimates are available for this particular measure.

Sources: Finances Québec (various years).

[Quebec] Fuel-Tax Rebate for Certain Stationary Engines (data for 2000-)

This measure was introduced in 1999 and provides a full refund of fuel tax for purchases of motor fuels used in vehicles equipped with stationary engines in the context of commercial or public activities. Refunds apply only to that portion of the fuel that serves to activate a stationary engine (as opposed to that portion of the fuel used to operate the vehicle).

We allocate this measure entirely to diesel fuel.

Sources: Finances Québec (various years).

Tag: CAN_te_52

Saskatchewan

Producer Support Estimate

[Saskatchewan] Saskatchewan Petroleum Research Incentive (data for 2000-)

This programme was introduced in FY1998/99 and has been periodically renewed since then. Its latest renewal was decided in FY2010/11 for a period of five years, with automatic expiry on 31 March 2015. The Saskatchewan Petroleum Research Incentive (SPRI) provides a credit against royalties and production taxes that would otherwise be payable in order to cover a portion of the eligible costs of enhanced oil-recovery projects and projects involving new technology in the oil and natural-gas industries. Over the five-year renewal period, a total of CAD 30 million is made available (i.e. the tax expenditure is estimated at an average of CAD 6 million per year). Maximum credits per project are: 50% of eligible research costs incurred with the Petroleum Technology Research Centre, up to a maximum credit of CAD 1 million; and 30% of eligible field pilot research costs, up to a maximum credit of CAD 3 million. The programme is designed to encourage companies to field-test recovery technologies on a pilot scale, and does not apply to full-scale commercial projects.

Readers are advised that some fiscal measures related to oil and gas production may not constitute tax expenditures under an alternative baseline where royalties (or severance taxes) vary with market conditions and production costs.

We use province-level data from CAPP on the value of oil and gas production to allocate the annual amounts reported in budget documents to oil and natural-gas extraction.

Sources: Saskatchewan Energy and Resources (various years), CAPP.

Tag: CAN_te_15

[Saskatchewan] Support to SaskEnergy for the La Ronge Project (data for 2006)

The government of Saskatchewan provided SaskEnergy with a one-time grant for FY2006/07 to help finance the completion of a natural-gas distribution project in the area of La Ronge. SaskEnergy is a provincial Crown corporation and the sole distributor of natural gas in the province of Saskatchewan.

Sources: Saskatchewan Finance (various years).

Tag: CAN_dt_04

Consumer Support Estimate

[Saskatchewan] Fuel-Tax Exemption for Farm Activity, Heating and Mining (data for 1999-)

Marked diesel fuel may be sold exempt of tax (normally CAD 0.15 per litre) to valid Fuel-Tax Exemption Permit holders for use in unlicensed farming, unlicensed primary production (i.e. commercial fishing, commercial trapping, commercial logging and commercial peat harvesting) machinery, and licensed farm vehicles. Unmarked gasoline may be sold by bulk fuel dealers at an 80% reduced tax rate to farmers for use in eligible farming activities. Prior to 2000, the Fuel-Tax Rebate for farm-use gasoline was capped at a maximum of CAD 900 per year.

Marked diesel fuel sold for eligible heating uses in the province of Saskatchewan may be sold exempt of tax if identified as heating fuel or fuel oil at the time of sale.

Fuel used in unlicensed machinery and equipment used in mineral exploration in the province of Saskatchewan may be eligible for a full rebate of fuel tax. Fuel consumed in licensed vehicles or equipment is not eligible for a rebate, regardless of its use. Mineral exploration does not include processing, developing or producing minerals from the site beyond those activities which are by necessity part of exploring or prospecting for minerals.

For farming activity, we use data from Natural Resources Canada on energy use in Saskatchewan's farming sector to allocate the annual amounts reported in budget documents to diesel fuel and gasoline. The amounts reported for heating and mining are entirely allocated to diesel and similar fuels (i.e. light fuel oil).

Sources: Saskatchewan Finance (various years), Natural Resources Canada (2010[b]).

Tag: CAN_te_11

[Saskatchewan] Sales-Tax Exemption for Natural Gas (limited data for 1999-)

Saskatchewan's Provincial Sales Tax (PST) exempts the retail sale of motive fuels, all natural-gas consumption, and the residential consumption of electricity.

Electricity, natural gas, and propane used in the processing of minerals are not subject to PST either. The power exemption typically begins when the raw materials enter the mill and ends when the final product is moved to storage. Electricity consumed for any other purpose, including lighting of premises, underground extraction of minerals, shaft hoist and elevators, movement of raw materials prior to processing, water pumping, ventilation, and movement of finished product to storage, is subject to tax. Natural gas and propane used to produce steam that is used in the milling process is not subject to tax. Natural gas and propane used for other heating purposes is also exempt.

Electricity, diesel fuel, domestic fuel oil, coke and gas used in a direct manufacturing process are not subject to PST. The exemption for manufacturing electricity applies only to the electricity that is consumed by equipment and machinery used in a direct

manufacturing process. Electricity consumed for any other purpose, including lighting of premises, ventilation, refrigeration and elevators, is subject to tax.

Only the portion of the exemption that is concerned with the consumption of natural gas is reported here.

Sources: Saskatchewan Finance (various years).

Tag: CAN_te_14

[Saskatchewan] Home Heating Assistance for Alternative Fuels (data for 2005)

This initiative comprises a one-time appropriation for FY2005/06 that was meant to provide eligible households and businesses in the province of Saskatchewan with a CAD 200 heating grant. Eligibility required that heating be provided using either fuel oil or propane.

We allocate this item entirely to heating oil given the lack of data and the relatively low share of propane in overall residential heating.

Sources: Saskatchewan Finance (various years), Natural Resources Canada (2010[b]).

Tag: CAN_dt_05

Territory of Yukon

Consumer Support Estimate

[Yukon] Yukon Fuel Oil Tax Act Exemption Program (data for 2007-)

Sales of fuel oil for certain specific uses in Yukon are exempted as per the territory's *Fuel Oil Tax Act*. Eligible uses include space heating, cooking, heating of ore as part of mineral extraction, stationary power generation, and certain off-road commercial activities such as mining, farming, fishing, logging, hunting, and trapping.

Sources: Government of Yukon.

Tag: CAN_te_53

[Yukon] Yukon Pioneer Utility Grant Program (data for 2002-)

The Yukon Pioneer Utility Grant Program was introduced in 2002 and provides financial assistance with home heating costs to Yukon seniors over the age of 65. The budgetary grant for FY2011/12 was CAD 1.5 million, of which about 70% (CAD 1.1 million) could be attributed to subsidising oil-based space heating.

Sources: Government of Yukon, Taggart *et al.* (2003).

Tag: CAN_dt_13

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Table 5.1. Summary of fossil-fuel support to coal - Canada

(Millions of CAD, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Producer support								
Support for land and natural resources								
Excess of resource allowance over non deductibility of royalties	Federal	1	0.3	0	n.a.	n.a.	n.a.	n.a.
Support for capital formation								
Earned depletion allowance	Federal	1	1	0.1	0.1	0	0.2	0.2
Flow through share deductions	Federal	8	9	10	5	4	5	6
Support for knowledge creation								
Mining exploration tax credit	BC	1	2	2	5	2	15	15
Consumer support								
Your energy rebate	NS	n.a.	2	3	2	3	4	4
General services support								
Funding for Geoscience BC	BC	4	n.a.	2	n.a.	n.a.	4	4

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances and on other data as specified in the chapter for Canada.

Table 5.2. Summary of fossil-fuel support to petroleum - Canada

(Millions of CAD, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Producer support								
Support for intermediate inputs								
Sales tax exemption for exploration equipment	MB	n.a.	1	1	1	2	2	2
Support for land and natural resources								
Syncrude remission order	Federal	24	-39	-28	-16	<0.1	<0.1	n.a.
Excess of resource allowance over non deductibility of royalties	Federal	18	7	0	n.a.	n.a.	n.a.	n.a.
Alberta crown royalty reductions	AB	472	461	467	436	250	219	338
Alberta royalty tax credit	AB	55	102	26	n.a.	n.a.	n.a.	n.a.
Energy industry drilling stimulus	AB	n.a.	n.a.	n.a.	n.a.	807	1399	n.a.
Summer drilling credit	BC	..	7	8	6	8	10	5
Road and Pipeline Infrastructure Credit	BC	..	12	8	11	11	13	17
Saskatchewan Petroleum Research Incentive	SK	5	5	5	5	6	6	6
Support for capital formation								
Reclassification of Expenses Under FTS	Federal	7	4	-4	-7	-8	-3	-2
Earned Depletion Allowance	Federal	16	20	3	2	0	5	5
Flow Through Share Deductions	Federal	181	223	235	124	103	141	157
Accelerated Capital Cost Allowance	Federal	..	..	300	300	300	300	300
Oil and Gas Export Development Fund	NL	n.a.	n.a.	n.a.	2	1	1	2
Consumer support								
Alberta Tax-Exempt Fuel Use Program	AB	178	183	195	213	217	246	206
Alberta Farm Fuel Benefit	AB	72	70	70	63	68	64	65
Alberta Farm Fuel Distribution Allowance	AB	33	32	33	29	33	31	31
Fuel-Tax Exemption for Farmers	BC	n.a.	n.a.	n.a.	..	..	..	2
Fuel-Tax Exemption for Farm Trucks	BC	3	3	3	5	5	5	2
Sales-Tax Rebate for Motor Fuels	BC	n.a.	n.a.	n.a.	n.a.	n.a.	193	265
Fuel-Tax Exemption for Marked Diesel and Gasoline	MB	46	43	42	40	38	44	44
Home Energy Assistance Program	NB	n.a.	1	1	..	0.1	1	1
Gasoline and Motive Fuel-Tax Refunds	NB	..	..	17	19	15	13	13
Fuel Supplement	NB	0.4	0.4	0.4	1	1	1	1
Diesel Fuel Equivalent Tax-Reduction Rebates	NB	..	..	0.4	1	0.3	0.3	0.3
Gas-Tax Exemption for Farming	NL	5	4	4	4	3	4	3
Gas-Tax Exemption for Municipalities	NL	1	1	1	1	1	1	0.4
NL Home Heating Rebate Program	NL	2	3	5	5	4	4	4
Gas-Tax Exemption for Electricity Generation	NL	2	2	2	2	3	5	3
Gas-Tax Exemption for Vessels	NL	..	4	4	4	5	2	2
NL Energy Rebate	NL	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	5
Your Energy Rebate	NS	n.a.	15	33	21	25	35	37
Gasoline Tax Reduction for Propane	ON	10	10	8	7	5	5	10
Northern Ontario Energy Credit	ON	n.a.	n.a.	n.a.	n.a.	n.a.	1	1
Fuel-Tax Refunds for Auxiliary Equipment	ON	5	6	7	6	6	6	2
Fuel-Tax Exemption for Coloured Fuel	ON	420	420	410	410	355	285	285
Sales-Tax Exemption for Energy Products	ON	2061	2163	2244	2517	n.a.	n.a.	n.a.

Table 5.2. Summary of fossil-fuel support to petroleum – Canada (*continued*)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Ontario Energy and Property Tax Credit	ON	n.a.	n.a.	n.a.	n.a.	n.a.	18	19
Gasoline-Tax Exemption for Unlicensed Equipment	ON	7	7	7	4	6	4	7
Fuel-Tax Reduction for Railway Diesel	ON	30	32	55	60	55	60	55
Tax Exemption for Marked Fuel Permits	PE	6	5	7	7	6	6	6
Fuel-Tax Reductions for Air and Rail Transport	QC	65	68	71	71	68	68	68
Fuel-Tax Rebate for Certain Stationary Engines	QC	12	13	13	14	14	14	14
Fuel-Tax Rebates for Farming, Forestry and Mining	QC	31	30	26	25	22	22	22
Fuel-Tax Reductions in Certain Regions	QC	90	82	88	85	85	91	96
Fuel-Tax Rebate for Public Carriers	QC	5	12	15	20	20	20	20
Fuel-Tax Exemption for Farm Activity, Heating and Mining	SK	133	134	135	130	132	125	141
Home-Heating Assistance for Alternative Fuels	SK	2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Yukon Pioneer Utility Grant Program	YT	1	1	1	1	1	1	1
Yukon Fuel Oil Tax Act Exemption Program	YT	..	..	5	5	6	8	9
General services support								
Orphan Well Fund	AB	n.a.	n.a.	n.a.	n.a.	11	12	n.a.
Funding for Geoscience BC	BC	3	n.a.	1	n.a.	n.a.	1	1
Heartlands Oil and Gas Road Rehabilitation	BC	5	8	7	7	10	9	9
Petroleum Technology Research Centre	SK	2	2	3	3	4	5	5

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances and on other data as specified in the chapter for Canada.

Table 5.3. Summary of fossil-fuel support to natural gas - Canada

(Millions of CAD, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Producer support								
Support for intermediate inputs								
Fuel-Tax Exemption for Transmitting Waste Gas	BC	13	14	14	14	15	15	15
Support for land and natural resources								
Excess of Resource Allowance over Non Deductibility of Royalties	Federal	19	7	0	n.a.	n.a.	n.a.	n.a.
Alberta Royalty Tax Credit	AB	56	72	17	n.a.	n.a.	n.a.	n.a.
Alberta Crown Royalty Reductions	AB	474	324	310	226	90	58	89
Energy Industry Drilling Stimulus	AB	n.a.	n.a.	n.a.	n.a.	291	370	n.a.
Deep Drilling Credit	BC	..	52	60	87	77	85	146
Summer Drilling Credit	BC	..	30	37	29	28	27	15
Road and Pipeline Infrastructure Credit	BC	..	54	36	52	40	37	49
Marginal and Ultramarginal Credit	BC	..	100	128	..	..	..	..
Saskatchewan Petroleum Research Incentive	SK	1	1	1	1	0.4	0.3	0.3
Support for capital formation								
Earned Depletion Allowance	Federal	16	20	2	2	0	4	4
Flow Through Share Deductions	Federal	189	223	220	114	89	113	121
Reclassification of Expenses Under FTS	Federal	7	4	-3	-7	-6	-2	-1
Oil and Gas Export Development Fund	NL	n.a.	n.a.	n.a.	0.2	0.1	<0.1	0.1
Support to SaskEnergy for the La Ronge Project	SK	n.a.	7	n.a.	n.a.	n.a.	n.a.	n.a.
Consumer support								
Residential Energy Credit	BC	n.a.	n.a.	n.a.	n.a.	n.a.	71	103
PST Exemption for Residential Fuels	BC	100	100	101	98	n.a.	n.a.	n.a.
Sales-Tax Exemption for Natural Gas	MB	15	11	11	12	13	11	11
Home Energy Assistance Program	NB	n.a.	0.1	0.1	..	<0.1	<0.1	<0.1
Gasoline and Motive Fuel-Tax Refunds	NB	..	..	2	4	5	4	4
Fuel Supplement	NB	<0.1	<0.1	0.1	0.1	0.1	0.1	0.1
Gasoline Tax Exemption for Methanol and Natural Gas	ON	n.a.	n.a.	5	9	10	10	15
Ontario Energy and Property Tax Credit	ON	n.a.	n.a.	n.a.	n.a.	n.a.	274	287
Northern Ontario Energy Credit	ON	n.a.	n.a.	n.a.	n.a.	n.a.	15	15
Sales-Tax Exemption for Energy Products	ON	1210	1192	1363	1582	n.a.	n.a.	n.a.
Sales-Tax Exemption for Natural Gas	SK	41	45	31	28	35	25	25
General Services Support								
Orphan Well Fund	AB	n.a.	n.a.	n.a.	n.a.	4	3	n.a.
Heartlands Oil and Gas Road Rehabilitation	BC	27	34	31	33	34	27	26
Funding for Geoscience BC	BC	14	n.a.	6	n.a.	n.a.	4	4
Petroleum Technology Research Centre	SK	2	2	3	3	4	4	4

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances and on other data as specified in the chapter for Canada.

Chapter 6.

CHILE

This chapter identifies, documents, and provides estimates of the various budgetary transfers and tax expenditures that relate to the production or use of fossil fuels in Chile. An overview of the country's energy economy is first given to place the measures listed into context. A data-documentation section then describes those measures in a systematic way. Whenever possible, the description details a measure's formal beneficiary, its eligibility criteria and functioning, and the fuels whose production or use stand to benefit from the measure. The chapter ends with a set of tables that provide, subject to availability, quantitative information and estimates for the various measures listed.

Energy resources and market structure

Chile, being a mountainous country, has significant hydroelectric resources, contributing to 42% of its electricity supply. However, annual output is variable, as droughts are frequent, and generation remains concentrated in the central-southern zones of the country. Biomass in the form of firewood, mostly used for heating and cooking, accounts for more than half of the final energy consumption in Chile's residential sector. Nevertheless, fossil fuels accounted in 2010 for almost 70% of the country's total primary energy supply (TPES), where petroleum products are the dominant form (35%), followed by natural gas (20%) and coal (18%). With little indigenous production of fossil fuels, Chile imports close to 65% of its TPES in the form of oil, natural gas and coal. And, until the arrival of liquefied natural gas (LNG) in July 2009, it depended almost exclusively on one supplier of piped gas: Argentina. LNG is now imported through two terminals located at Quinteros and Mejillones.

In 2007 and 2008, Chile lost most of its natural-gas imports from Argentina, at a time when its hydroelectric production was severely affected by drought. Chile was thus faced with an immediate challenge to find additional energy supplies to fuel its economic growth and replace the costly diesel oil that had to be used in power stations that had been originally built to run on natural gas from Argentina. In 2010, the domestic production of coal accounted for 5% of Chile's total coal consumption and this resource is expected to play a larger part in the power sector's energy supply over the longer term.

Chile produces small amounts of oil and gas from the Magallanes Basin in the far south. In 2008, an international tender for hydrocarbon exploration in the Magallanes Region was launched, under the supervision of the Ministry of Mining. Of the ten blocks on offer, nine were awarded; six will be operated exclusively by independent companies and consortia. In the three remaining blocks, the winning bidders will operate in partnership with the national oil company, ENAP.

Under the Chilean Constitution, the exploration for, and extraction of, crude oil and natural gas can be carried out either directly by ENAP or by private companies through exploration and exploitation contracts established with the Chilean state. Private companies can also participate in imports, refining, storage, and distribution activities. Currently, ENAP remains the leading company not only in oil extraction, but also refining (it owns the country's three refineries), importing, storage and maritime transport, as well as pipeline transport in partnership with other companies. It does not compete directly in the retail sector, however.

ENAP is also active in natural-gas transmission, and owns pipelines in the far south of the country. Other companies, all privately owned, operate the three major pipelines in the populous centre of the country, and the three pipelines in the northern region. Seven of all those pipelines, including the one located in the Austral Zone, are international and connect Chile to Argentina. Natural gas is distributed through networks owned by seven companies in various cities.

The pioneering privatisation and liberalisation of Chile's electricity sector, starting in the 1980s, was completed in 1998 with the sale of the last state-owned utility, Edelaysen. The SIC, which supplies electricity to more than 90% of the country's population of 17 million, is the country's main electrical system. The northern system, SING, comprises one-third of the country's total installed capacity and covers an area equivalent to 25% of Chile's continental territory, but serves only 6% of the population. Generation, transmission and distribution are unbundled horizontally in both the SIC and the SING. However, generators in the SIC also own transmission assets and distribution networks in the SIC since a single holding company can own assets in more than one of these sectors through companies with independent legal

status. Thirty-five generation companies currently operate in the SIC. Almost 90% of the capacity belongs to three large holding companies.

Prices, taxes and support mechanisms

Prices for petroleum-based fuels are freely set by the refiner and throughout the distribution chain, including retail sales at service stations. A specific excise tax (IEC) is levied on transport fuels (i.e. gasoline, diesel, LPG and compressed natural gas for use in vehicles). Gasoline is taxed at a fixed rate of UTM[1] 6 per m^3 (USD 0.48 per litre), diesel at a fixed rate of UTM 1.5 per m^3 (USD 0.12 per litre), and LPG and compressed natural gas are taxed at a rate of 1.4 UTM per m^3 (USD 0.11 per litre) and 1.93 UTM per 1 000 m^3 (USD 0.15 per m^3) respectively.

There is, however, an explicit government policy to reduce price volatility for those final consumers that are subject to the IEC. The Consumers' Protection System for IEC taxpayers (SIPCO) was established in February 2011 and covers all the transport fuels mentioned above (i.e. gasoline, diesel, LPG and compressed natural gas). The use of those fuels for other purposes than transport is not covered by SIPCO since it is not subject to the IEC. In practice, for each fuel subject to SIPCO, a price band is established around that fuel's average of past and future prices over a five-month window. Every week, the National Energy Commission (CNE) estimates an import parity price based on prices in the two previous weeks. If this estimated price exceeds the price-band ceiling, a reduction in the rate of IEC tax is applied to benefit final fuel consumers. Conversely, if the import parity price of the week is below the price-band floor, an increase in the rate of IEC tax is applied to make up the difference, paid for by final consumers. SIPCO thus aims to be revenue-neutral over the medium-term.

Before SIPCO was implemented, two other price-stabilisation mechanisms existed, which had similar objectives but were designed differently. The Petroleum Price Stabilisation Fund (FEPP) was the first of these mechanisms. It was established in 1991 and initially covered a wide range of petroleum products. Its scope is now restricted to domestic kerosene only. The second of these mechanisms was the Fuel Price Stabilisation Fund (FEPC) that operated from 2005 to 2010 and is thus no longer active. Both FEPP and FEPC shared SIPCO's main objective, which is to insulate consumers of fuels from price volatility. They were, however, designed differently since both mechanisms were funds while SIPCO varies rates of tax.

All fuels and electricity are charged the normal value-added tax (VAT) rate of 19%. In addition, imported fuels attract a most-favoured-nation import duty of 6%; imports from countries that have signed a trade agreement with Chile enter the country duty-free.

Data documentation

General notes

The Chilean tax system relies on the use of the UTM (*Unidad Tributaria Mensual*). The UTM is a unit of account used exclusively for tax purposes. Its exchange rate *vis-à-vis* the Chilean peso is adjusted monthly on the basis of the consumer price index, thereby keeping its real value more or less constant.

[1] The UTM (*Unidad Tributaria Mensual*, or monthly tax unit) is an inflation-tracking currency unit. The UTM was valued at CLP 39.689 (USD 80) in July 2012.

Consumer Support Estimate

Transitory Reduction on Gasoline Tax (data for 2008-2010)

This measure was adopted in 2008 and ended in 2010 following an increase in international oil prices. It provided consumers with a temporary reduction (24 months) in the fuel tax usually levied on gasoline. This tax concession was designed to increase with the world price of crude, as measured by the West Texas Intermediate (WTI) reference index. More specifically, the size of the reduction was to increase progressively from UTM 1.5 per m3 to UTM 3.5 per m3 whenever the WTI would exceed USD 80, though it never reached the UTM 3.5 maximum authorised by law.

Sources: Ley Chile (various years), Ministerio de Hacienda.

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Petroleum Price Stabilisation Fund (FEPP) (data for 2007-)

Since 1991, the government of Chile has introduced two different price-stabilisation funds for petroleum products. One is the *Fondo de Estabilización de Precios del Petróleo* (FEPP) and the other is the *Fondo de Estabilización de Precios de los Combustibles* (FEPC). Their shared objective was to partially cushion the Chilean economy against fluctuations in the world price of oil. Both funds thus worked in a countercyclical way. This means that when world prices were high, previously accumulated revenues would be used to lower domestic prices, thereby subsidising the consumption of petroleum products. When world prices were low, however, revenues would be raised by levying a tax on sales of the same petroleum products.

The FEPP is the first of Chile's two funds, having been established in 1991. It was initially designed to smooth final prices for a wide range of petroleum products such as gasoline, diesel fuel, naphtha, kerosene, heavy fuel oil, and liquefied petroleum gas (LPG). This changed with the introduction of the FEPC in 2005, when it was decided to restrict the FEPP's range of products to fuel oil and LPG only. Termination of the FEPC in 2010 then brought all those products back under the aegis of the FEPP. Starting with the introduction of SIPCO in February 2011 (see above), the FEPP now only covers domestic kerosene.

Price intervention occurs at the point of first sale (or import) of the relevant product. It is based on an import parity price (IPP) and an intermediate reference price (iRP), both of which are set on a weekly basis and are measured in USD per m^3. The former — the IPP — is obtained by adding to the c.i.f. import price of crude oil a mark-up to account for "admission" and transport costs. In the case of the FEPP, the iRP stands for the expected price of oil over the medium-term, which is different from the calculation of the iRP in the case of SIPCO (see above). The *Comision Naciónal de Energia* (CNE) calculates the FEPP's iRP value on the basis of the following formula:

$$iRP = a_0\, HP + a_1\, STF + a_2\, LTF$$

where "HP" is a historical weighted average of the IPP, "STF" and "LTF" are short-term and long-term forecasts of IPP prices respectively, and a_0, a_1 and a_2 are parameters that change over time.[2] This formula is therefore both backward- and forward-looking. The CNE then adds a fixed margin on either side of the iRP to define a price band inside which the domestic price is to fluctuate. A tax is levied or a subsidy granted whenever the IPP falls outside that band.

[2] Currently, their values are 0.85, 0.10 and 0.05 respectively.

The initial version of the FEPP (1991-2000) had a built-in asymmetry in the direction of lower prices. This stemmed from a bigger weight ascribed to overshooting of the target price, meaning that subsidies would always be higher than taxes for a given equal variation on either side of the target. This asymmetry resulted in the government having to provide more than USD 463 million in nominal terms to keep the programme in place over the years.

The rapid exhaustion of the fund's resources prompted the Chilean government to reform the scheme in 2000. Among the many changes brought about by the reform, the formula for setting the iRP was made public and some degree of flexibility was introduced in the determination of the band's margins. The government also disaggregated the fund at the product level, thereby establishing separate balances for each type of fuel. Last, the formulae were modified to make FEPP transfers contingent upon the fund's available resources, and the CNE was asked to update the scheme on a weekly basis, thereby allowing for a better transmission of world prices to final consumers. Since February 2011, the FEPP has been restricted to domestic kerosene only. This reform (law n°20.493) also provided for a USD 5.4 million recapitalisation of the fund.

We allocate annual estimates for the 2007-10 period to heavy fuel oil given that the FEPP ceased to cover LPG starting in 2007. Estimates for 2011 and later years are entirely allocated to kerosene.

Sources: Ley Chile (various years), Ministerio de Hacienda.

Tag: CHL_dt_01

Fuel Price Stabilisation Fund (FEPCO) (data for 2006-2010)

The FEPCO operated between 2005 and 2010 and has since been discontinued. As the second of Chile's two price-stabilisation funds (see "FEPP" above), its introduction resulted in the FEPP scheme being temporarily suspended for the relevant range of commodities (i.e. gasoline, diesel fuel, kerosene, and since 2007, LPG) while maintaining a residual role for a few other products (heavy fuel oil, and LPG up to 2007). After the FEPCO stopped operating in 2010, all petroleum products that were covered by the FEPCO were once again allocated to the FEPP until the latter was in turn replaced by SIPCO. Funding for the FEPCO was provided using resources drawn from the national copper fund (*Fundo de Compensación de los Ingresos del Cobre*), with the initial endowment amounting to about USD 10 million.

The FEPCO programme was initially supposed to operate until June 2006 and was meant to counterbalance a sharp increase in fuel prices that the FEPP alone could not address. Although it was rather similar to the FEPP in terms of its basic design, the FEPCO possessed a much smaller margin of fluctuation (5%). Also, calculation of the import parity price (IPP) was not based on the c.i.f. import price of crude oil, but instead on the standard West Texas Intermediate (WTI) price index.

As was already the case with the FEPP, the FEPCO did not prove self-financing. Over the two-and-a-half years between January 2007 and July 2009, credits outweighed taxes in the FEPCO by USD 288 million. To maintain a positive balance in the fund in the face of these outflows, the government injected more than USD 760 million, of which only USD 362 million remained when the fund effectively ceased to operate in September 2010. After that, the FEPP resumed its earlier functioning, covering all products previously under the FEPCO's umbrella until it was in turn replaced by SIPCO in February 2011.

Annual support amounts for this measure are allocated to gasoline, diesel fuel, kerosene, and LPG on the basis of estimates provided by the Ministry of Finance (*Ministerio de Hacienda*).

Sources: Ley Chile (various years), Ministerio de Hacienda.

Tag: CHL_dt_02

Consumers' Protection System (SIPCO) (data for 2011-)

The Consumers' Protection System for IEC taxpayers (SIPCO) was established in February 2011 to smooth fluctuations in fuel prices. It applies to the use of gasoline, diesel fuel, LPG and compressed natural gas for transport purposes only.

Fuel taxation in Chile occurs at the point of first sale (or import) of the relevant product. It is based on an import parity price (IPP) and an intermediate reference price (iRP), both of which are set on a weekly basis and are measured in USD per m^3. The former — the IPP — is obtained by averaging, over the last two weeks, the c.i.f. import price of the relevant fuel and by adding a mark-up to account for various elements such as "admission" and transport costs. This price aims to replicate the import price that would prevail in a competitive market given that Chile is a small producer of fossil fuels and relies extensively on imports to meet its energy needs. The iRP gives an average price for the relevant fuel based on the recent past and on near-term projections. The *Comision Naciónal de Energia* (CNE) calculates its value on the basis of the following formula:

$$iRP = (1 - a).HP(n) + a.FP(m) + CS(s) + t$$

where "HP(n)" is a historical average of oil prices over the past "n" weeks, "FP(m)" is an average of anticipated oil prices over the future "m" months, "CS(s)" is the average crack spread[3] over the past "s" weeks, and "t" stands for transport costs, insurance fees, customs duties and other costs of admission into Chile. The parameter "a" varies between 0 and 0.50, "n" and "s" between 8 and 30 weeks, and "m" between three and six months. A 12.5% price-band is then established around each side of the calculated iRP. If the IPP exceeds the band's ceiling (drops below the band's floor) a reduction (increase) in the rate of IEC tax is applied.

It follows that the domestic price for transport fuels in Chile is determined by:

$$P^{Dom} = (P^{Int} + DM) \,.\, (1 + VAT) + IEC^{Tot}$$

where "P^{Dom}" stands for the domestic retail price, "P^{Int}" is the international reference price (c.i.f import price, including admission and transport costs), "DM" is the distribution margin, "VAT" is Chile's rate of value-added tax, and "IEC^{Tot}" is the total rate of Specific Excise Tax (IEC) on transport fuels. This total rate of tax itself comprises a fixed component and it's a variable one, which is in turn determined based on the difference between the iRP and the IPP.

Annual amounts of the revenue foregone due to SIPCO are allocated to gasoline and diesel fuel on the basis of estimates provided by the Ministry of Finance (*Ministerio de Hacienda*).

Sources: Ley Chile (various years), Ministerio de Hacienda.

Tag: CHL_te_01

3 The term "crack spread" is commonly used in the oil industry to refer to the difference between the price of crude oil and that of refinery output.

Sources

Policies or transfers

Ley Chile (various years), Biblioteca del Congreso Nacional de Chile, Available at: *www.leychile.cl/*.

Table 6.1. Summary of fossil-fuel support to petroleum - Chile

(Millions of CLP, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Consumer support								
FEPP	Central	..	..	-0.1	-21	-23	<0.1	2
Transitory reduction on gasoline tax	Central	n.a.	n.a.	n.a.	341	430	83	n.a.
SIPCO	Central	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	82
FEPCO	Central	n.a.	17	60	400	96	46	n.a.

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic.

Table 6.2. Summary of fossil-fuel support to natural gas - Chile

(Millions of CLP, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Consumer support								
FEPCO	Central	n.a.	..	..	..	0.2	6	n.a.

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic.

Chapter 7.

CZECH REPUBLIC

This chapter identifies, documents, and provides estimates of the various budgetary transfers and tax expenditures that relate to the production or use of fossil fuels in the Czech Republic. An overview of the country's energy economy is first given to place the measures listed into context. A data-documentation section then describes those measures in a systematic way. Whenever possible, the description details a measure's formal beneficiary, its eligibility criteria and functioning, and the fuels whose production or use stand to benefit from the measure. The chapter ends with a set of tables that provide, subject to availability, quantitative information and estimates for the various measures listed.

Energy sources and market structure

Fossil fuels accounted for about 80% of the Czech Republic's total primary energy supply (TPES) in 2010. Coal made up the largest share (42%), followed by oil (20%) and natural gas (17%). The rest of the energy demand was met by nuclear energy (17%) and combustible renewable energy and waste (7%). In 2010, coal accounted for over two-thirds of domestic energy production, followed by nuclear power (23%) and renewable energy (10%). Since the Czech Republic does not have any significant natural-gas and oil resources, it imports almost all of its petroleum products.

The Czech Republic is the third-largest net electricity exporter in the European Union, after France and Germany. It exports its electricity mainly to Austria, Germany and the Slovak Republic. In 2011, electricity was mostly generated from domestic coal (57%) and nuclear energy (32%). Small amounts of natural gas (1.3%) were used as a complement in multi-fired units and in peaking units. Roughly one quarter of the country's electricity produced from coal and almost 50% of heat in the Czech Republic is generated in CHP plants.

Coal played a big role in the energy mix in the past and it still accounts for the largest share of both the TPES and domestic energy production. In 1991, the government largely limited the coal-mining activity on environmental grounds, incentivising the biggest users of coal (i.e. the industry and building sectors) to switch away from coal to natural gas and electricity. Currently there is growing pressure on the government to revoke the decrees that limited coal mining, for both energy-security and economic reasons. There are substantial coal resources available – of bituminous coal in the southern part of Upper Silesia and of brown coal[1] in the Northern Bohemian basin – that could potentially be exploited. Six coal mines are still in operation: one bituminous coal mine, *Ostravsko-Karvinské Doly* (OKD), and five lignite mines. The largest coal consumer is ČEZ, the partly state-owned operator of all nuclear plants and most of the coal-fired power plants in the Czech Republic, which supplies about 70% of the country's total demand for electricity. ČEZ is the owner of the lignite mining company Severočeské uhelné doly, a.s., which produces about 50% of lignite in the Czech Republic. Since ČEZ and Severočeské uhelné doly, a.s. signed long-term contracts for energy supply, the market for lignite in the Czech Republic cannot be considered competitive.

The use of renewable energy resources is being constantly increased — the share of renewable-energy resources in TPES increased from only 2% in 2000 to about 6% in 2010. Czech renewable-energy policy is driven by both the EU Directive 2009/28/EC[2] and the government's efforts to increase energy security through increasing both the share of domestic energy supply in total energy consumption and the diversification of energy mix. In 2004, the Czech government set its own national targets to be achieved by 2030: (i) 16% to 17% share of renewable-energy sources in gross electricity generation and (ii) 15% to 16%

1 Due to the fact that brown coal generally includes lignite, most countries do not make a distinction between lignite and brown coal and use these two terms interchangeably in their documentation. The Czech Republic is one of very few countries that apply the distinction between brown coal and lignite. Most of the lignite resources can be found in the Vienna Basin in the south-western part of the country. For the purpose of the Inventory, estimates pertaining to both brown coal and lignite will be classified as estimates pertaining to brown coal.

2 The mandatory targets set out by the Directive 2009/71/EC to be achieved by the Czech Republic by 2020 are (i) 13% share of renewable-energy sources in final energy consumption and (ii) 10% share of renewable energy in the transport-sector energy consumption.

share of renewable-energy sources in TPES.[3] In order to reach the targets, the Czech Republic supports electricity generation from renewable energy.[4]

The Czech Republic imports the natural gas it consumes from Russia (63%), Norway (3%) and the European Union (34%). Natural gas from Norway was first imported in the late 1990s in order to decrease the country's complete reliance on imports from Russia. Most of its natural-gas imports still come from Russia as agreed under long-term contracts with Gazprom that run until 2035. The drop in imports from Norway and the steep increase of imports mainly from Germany, especially in 2011, was caused by the increase of natural-gas purchases by traders in the spot market where natural gas was cheaper than when sold under long-term contracts, with an exception of high-demand peak prices in winter. The Czech Republic transposed the second EU Directive 2003/55/EC on the liberalisation of the natural-gas market in 2005, which resulted in a gradual unbundling of each of the vertically integrated companies. The liberalisation continued by transposition of the Third Gas Directive 2009/73/ES in 2011. The biggest Czech importer of natural gas, RWE Transgas, was split into a transmission and a system operator, NET4GAS and RWE Gas Storage. The remaining part of RWE Transgas deals with the natural gas wholesale market. In 2011, RWE Transgas was responsible for 76% of all natural gas imports to the Czech Republic. Three storage-system operators own and operate eight gas-storage facilities. RWE Gas Storage operates six of those storage facilities, while MND and SPP Bohemia operate one storage facility each.

Almost all of the demand for oil in the Czech Republic is met by imports of crude oil, mainly from Russia (over two-thirds) and Azerbaijan (over a quarter). The Czech Republic produces small amounts of oil in Southern Moravia. Moravské Naftové Doly operates all of the domestic crude oil production. MERO operates crude oil pipelines and the central crude storage terminal, while ČEPRO operates the refined products pipelines and the products storage terminals. Both companies are state-owned, as the Czech Republic considers them to be of strategic importance. As for oil refining, it is in the hands of international oil companies Unipetrol, ENI and Shell. The Polish PKN Orlen Group is the main shareholder of Unipetrol, through which it owns 51% of shares in the Czech Refinery a.s. and 100% shares in Paramo Refinery. Eni owns 32.7 % in Czech Refinery a.s. while Shell owns the remaining 16.3%.

Electricity market liberalisation was conducted in line with the EU requirements. From 2005 onwards, all industrial consumers have been able to choose their supplier. In 2006, this rule was extended to all consumers.

Since 2004, the country's energy-policy framework has been outlined in the State Energy Concept (SEC). The new SEC, drafted in 2010, has not been approved at the time of writing. The SEC points to the security of energy supply and the maintenance of the Czech Republic as a net electricity exporter as the two main objectives of the country's energy policy. The document stipulates that these objectives are to be achieved through a diversified energy mix, an optimal use of domestic resources (mainly coal, uranium, biomass and waste) and expanding Czech nuclear capacity.

3 The plan from 2004 also set out an intermediate domestic target of 6% share of renewable-energy sources in TPES by 2010, which the Czech Republic successfully met.

4 In 2010, the Czech Republic slashed its generous feed-in tariffs for electricity generated using solar-photovoltaic technology.

Prices, taxes and support mechanisms

The Energy Regulatory Office (ERO) regulates the energy sector while the State Energy Inspection oversees compliance. Coal prices are determined by the market, as are the end-user prices of natural gas. Some of the components of the natural gas and electricity prices, however, are regulated (e.g. the transmission and distribution prices are set by ERO for every calendar year).

A VAT rate of 20% is levied on all types of energy consumption and all fuels are subject to an excise or energy tax. Some specific uses and users of fuel are fully or partially exempt from the excise or energy tax (notably biofuels from renewable sources, fuels used in shipping, electricity production, combined heat and power generation, aviation and agriculture). Electricity is also subject to the energy tax, although some specific uses of electricity (e.g. electricity used for cargo and transport of passengers by rail, metro, trams and trolley buses) and electricity produced from renewable energy are exempt from the tax.

Until 1991, the state heavily supported its coal-mining industry. After that year, the only subsidies that remained were those intended to address the social and environmental impacts of mining. Since 2003, the Czech Republic had been following the EC Council Regulation 1407/2002, which stipulates that state aid to coal mining can only be provided under certain conditions. Since 2011, the Czech Republic has been following the Council Decision 2010/787/EC, which only allows state aid for the purpose of mine closure, the treatment of health damage to miners, and addressing the environmental liabilities related to past mining. Payments are made to two state-owned companies, Diamo and Palivový Kombinát Ústí, which are responsible for dealing with damages caused by past uranium- and coal-mining activity.

About half of the total R&D funding in the Czech Republic is provided by the state. In 2007, the Czech government started increasing the annual budget allocations to R&D. Public expenditure on R&D grew from CZK 20 billion that year to CZK 26.8 billion in 2010. Innovation in the field of energy production, distribution and efficiency accounts for roughly a third of this spending, but only a very small amount relates to fossil fuels (1% in 2007).

Data documentation

General notes

The fiscal year in the Czech Republic coincides with the calendar year.

Consumer support estimates were provided by the Ministry of Environment, the Ministry of Finance and the Ministry of Industry and Trade. Measures pertaining to restructuring of coal mining and eliminating the negative environmental consequences of mining are quoted from a study included in the *Mineral Commodity Summaries of the Czech Republic (2010)* that was published by the Ministry of Industry and Trade: "Eliminating negative consequences of mining in the Czech Republic" — main methods and financial resources" (Kaštovský and Platzek, 2010).

Consumer Support Estimate

Excise Tax Refund for Diesel Used in Agriculture (data for 2000-)

Diesel used in agriculture is subject to a partial refund of the excise tax, as stipulated by the Directive 2003/96/EC.

At the time of writing, a draft suggesting a decrease of tax refund for diesel used for agricultural purposes in 2013 and complete abolition of the tax refund from 2014 have been discussed as a part of austerity measures.

Estimates were provided by the Ministry of Finance.

Sources: Ministry of Finance.

Tag: CZE_te_01

Energy-Tax Exemption for Certain Uses of Natural Gas (data for 2008-)

The following uses of natural gas are exempt from the energy-tax payments: by households for heating purposes, for combined heat and electricity production if that heat is supplied to households, for non-recreational transport by boat, for certain mineralogical and metallurgical processes, for uses other than as motor fuel or heating fuel the energy tax on natural gas. Also, a reduced tax rate applies to compressed natural gas and LNG used as transport fuels. Rebates for the energy tax on natural gas are offered to all persons with diplomatic immunity.

Energy-tax exemption for natural gas used by households for heating purposes is planned to be abolished in 2014.

Estimates were provided by the Ministry of Finance.

Sources: Ministry of Finance.

Tag: CZE_te_02

Energy-Tax Exemption for Certain Uses of Solid Fuels (data for 2008-)

The following uses of solid fuels are exempt from the energy-tax payments: for combined heat and electricity production if that heat is supplied to households, for non-recreational transport by boat, for certain chemical, mineralogical and metallurgical processes, for coke production, for uses other than as motor fuel or heating fuel are exempt from the energy tax on solid fuels. Also, rebates for the energy tax on solid fuels are offered to all persons with diplomatic immunity.

Energy tax on solid fuels applies to hard coal, brown coal, coke and semi-coke obtained from either hard coal or brown coal. There are also other fuels to which the energy tax on solid fuels applies, but their contribution to the tax revenues and expenditures is minor.

Estimates were provided by the Ministry of Finance. We allocated all payments to brown coal.

Sources: Ministry of Finance.

Tag: CZE_te_03

Energy-Tax Refund for Oil Used for Heating (data for 2008-)

Consumers of mineral oil used for heat production can obtain partial refunds of their energy-tax payments.

Estimates were provided by the Ministry of Finance. We allocated all payments to light fuel oil.

Sources: Customs Administration of the Czech Republic, Ministry of Finance.

Tag: CZE_te_04

General Services Support Estimate

Since 1991, the Czech Republic has not provided any measures supporting production or consumption of coal. However, the state has an obligation to deal with the social

consequences of restructuring the mining sector, the health consequences for the miners and the negative consequences of past mining activity. The state transferred these obligations to two state-owned enterprises, DIAMO, s.p. and Palivový kombinát Ústí, s.p., which acquired the assets of the closed mining companies. These state-owned enterprises receive state subsidies for the activities that they carry out. Since measures financed through these subsidy payments do not increase current production or consumption of coal, they are all allocated to the GSSE.

Restructuring of coal mining and eliminating the negative environmental consequences of mining are conducted in several different ways and using several different financial resources (Kaštovský and Platzek, 2010). Apart from the measures financed by the state aid that are described below (see CZE_dt_01, CZE_dt_02, CZE_dt_03, CZE_dt_04 and CZE_dt_05), since 1994 the mining companies have been obliged to set up two reserves: a financial reserve for remediation and reclamation of all plots of land affected by mining, and a financial reserve for alleviating damage caused by mining.

Compensation of Municipalities Affected by Mining Funded from Royalties on Mining Leases (data for 1993-2009)

All mining companies in the Czech Republic are required to pay royalties on mining leases and royalties on extracted reserved minerals. Funds collected this way are earmarked for compensating those municipalities that have been adversely affected by mining activity (CZE_dt_01 and CZE_dt_02).

Mining companies have an obligation to pay annual royalties on mining leases, as stipulated in the Mining Act (Act No. 44/1988 Coll.). The amount of royalties on mining leases is paid to the relevant Regional Mining Authority per hectare of land leased — the amount paid per hectare depends on the environmental protection level of the leased area, the type of activity conducted by the mining company and the environmental impact of this activity. Generally, royalties on mining leases may vary from CZK 100 to CZK 1 000 per hectare. All funds collected in this way are given to those municipalities on the territory of which the mining lease is located. This way, in the period between 1993 and 2009 the mining companies paid out about CZK 363 million to the municipalities where their mines were located.

We use production data from the IEA's Energy Balances to allocate the annual amounts reported in budget documents to the various types of coal concerned.

Sources: IEA; Kaštovský and Platzek (2010).

Tag: CZE_dt_01

Remediation of Environmental Damages Caused by Mining Funded from Royalties on Coal Extraction (data for 1993-2009)

Mining companies have an obligation to pay royalties on minerals they extract, as stipulated by the Act No. 541/1991 Coll. These royalties are collected by the Regional Mining Authority and they cannot exceed 10% of the market price of extracted minerals.

In the period between 1993 and 1999, the Regional Mining Authority transferred 50% of the collected revenue to the state budget of the Czech Republic and 50% to the budget of those municipalities on the territory of which mining leases are located. If a given mining lease is located on the territory of a few mining municipalities, the Regional Mining Authority distributes the funding according to the share in mining, similarly to the royalties on a mining lease. As stipulated by the Amendment No. 10/1993 Coll. of the Mining Act, 50% of the royalties transferred to the state budget (i.e. 25% of the total revenue collected from royalties on extracted minerals) had to be earmarked for the

purpose of remediation of environmental damages caused by the mining of reserved deposits.

The Act No. 366/2000 Coll. changed both the proportions of the revenues from royalties on extraction given to the state and to the municipalities affected by mining and the amount of royalties earmarked for the purpose of remediating environmental damages — since 2000, the state receives 25% of the revenues from royalties (the remaining 75% is given to the municipalities on the territory of which there is mining activity), all of which must be spent on remediation of environmental damages caused by mining activity.

Only those estimates that are explicitly earmarked for remediation of environmental damages are considered: in the period 1993-2000 they accounted for 50% and in the period 2001-2009 they accounted for 25% of the total payments.

We use production data from the IEA's Energy Balances to allocate the annual amounts reported in budget documents to the various types of coal concerned.

Sources: IEA, Kaštovský and Platzek (2010).

Tag: CZE_dt_02

Restructuring of the Coal Mining Industry (data for 1992-2009)

A plan to phase out coal-mining activities in uneconomic underground mines and quarries in the Czech Republic was announced at the end of 1992. The government announced a plan of restructuring the coal-mining industry in Government Resolution No. 691/199, in which it committed to state-budget financing of the technical work related to closing mines, rectifying the consequences of past mining activity and covering the social costs of phasing out mining activity, such as covering health benefits for miners.

Annual payments for the years from 2004 until 2009 are aggregated, i.e. the estimates provided represent total state expenditure on the restructuring of the coal-mining, ore-mining and uranium-mining industries. Since before that date coal mining accounted for between 50% and 70% of these total payments, we allocate 50% of the total payments to coal mining.

We use production data from the IEA's Energy Balances to allocate the annual amounts reported in budget documents to the various types of coal concerned.

Sources: IEA, Kaštovský and Platzek (2010).

Tag: CZE_dt_03

Elimination of Past Environmental Damages (data for 2009)

In 2006, the Ministry of Finance of the Czech Republic decided to use revenues from privatisation for financing the elimination of past environmental damages that had arisen due to mining activity that had taken place before privatisation of the Czech mines. As of the end of 2009, four coal-mining entities had drawn financial resources from the National Property Fund of the Czech Republic in order to deal with past environmental damages: Diamo (a state-owned company responsible for dealing with damages caused by past uranium- and coal-mining activity), OKD, a.s. (a bituminous-coal mine), Sokolovská uhelná, a.s. and Severočeské doly, a.s. (both are lignite mines).

While the payment for Diamo cannot be allocated, the payment for OKD is allocated to hard coal and payments for Sokolovská uhelná and Severočeské doly are allocated to brown coal.

Sources: Kaštovský and Platzek (2010).

Tag: CZE_dt_04

Programmes Financing Remediation of Ecological Damage Caused Prior to 1994 (data for 2009)

As mining companies in the Czech Republic have been obliged to generate financial reserves for remediation and reclamation of areas affected by mining only since 1994, the state took up the responsibility to finance remediation of those ecological damages that had arisen before that date. For this purpose, the state earmarked over CZK 37 billion or EUR 1.5 billion from privatisation revenues and the profits of public enterprises for the following projects:

(i) Dealing with ecological damage created prior to privatisation of brown coal mining companies in the Ústí nad Labem Region and Karlovy Vary Region (CZK 15 billion — allocated to brown coal);

(ii) Dealing with ecological damage caused by mineral mining, primarily underground mining of bituminous coal in the Moravia and Silesia Region (CZK 20 billion — allocated to hard coal);

(iii) Dealing with reducing the impacts caused by the termination of coal mining in the Kladno Region (CZK 1 billion — allocated to hard coal);

(iv) Eliminating ecological burdens caused by the exploration and extraction of crude oil and natural gas in the South Moravian Region (CZK 1.177 billion — allocated to crude oil and natural gas).

Sources: Kaštovský and Platzek (2010).

Tag: CZE_dt_05

Sources

Policies or transfers

Vít Kaštovský, Platzek, Adolf (2010), "Eliminating negative consequences of mining in the Czech Republic — main methods and financial resources", Ministry of Industry and Trade, Mineral Commodity Summaries of the Czech Republic (2010), Czech Geological Survey — Geofond, Available at: *www.geofond.cz*.

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Table 7.1. Summary of fossil-fuel support to coal – Czech Republic

(Millions of CZK, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Consumer support								
Energy tax exemption for certain uses of solid fuels	Central	n.a.	n.a.	n.a.	913	753	923	923
General Services Support								
Restructuring of the coal mining industry	Central	1890	1840	1746	1719	1563	1564	1564
Elimination of past environmental damages	Central	..	..	..	..	2687	n.a.	n.a.
Compensation of municipalities affected by mining funded from royalties on mining leases	Central	21	16	16	15	15	15	15
Programmes financing remediation of ecological damage caused prior to 1994	Central	..	..	..	..	36000	n.a.	n.a.
Remediation of environmental damages caused by mining funded from royalties on coal extraction	Central	153	153	165	169	161	161	161

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Table 7.2. Summary of fossil-fuel support to petroleum – Czech Republic

(Millions of CZK, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Consumer support								
Energy tax refund for oil used for heating	Central	n.a.	n.a.	n.a.	586	701	535	578
Excise tax refund for diesel used in agriculture	Central	1499	1477	1504	1517	1559	1679	1824
General services support								
Programmes financing remediation of ecological damage caused prior to 1994	Central	..	..	..	..	712	n.a.	n.a.

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Table 7.3. Summary of fossil-fuel support to natural gas – Czech Republic

(Millions of CZK, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Consumer support								
Energy tax exemption for certain uses of natural gas	Central	n.a.	n.a.	n.a.	1802	1353	1572	1572
General Services Support								
Programmes financing remediation of ecological damage caused prior to 1994	Central	..	..	..	..	465	n.a.	n.a.

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Chapter 8.

DENMARK

This chapter identifies, documents, and provides estimates of the various budgetary transfers and tax expenditures that relate to the production or use of fossil fuels in Denmark. An overview of the country's energy economy is first given to place the measures listed into context. A data-documentation section then describes those measures in a systematic way. Whenever possible, the description details a measure's formal beneficiary, its eligibility criteria and functioning, and the fuels whose production or use stand to benefit from the measure. The chapter ends with a set of tables that provide, subject to availability, quantitative information and estimates for the various measures listed.

Energy resources and market structure

Denmark has considerable oil and gas resources in the North Sea, which have been exploited since the early 1970s. However, the country became a net exporter of oil and gas only in 1997, and can be expected to remain so at least until end-2018 and 2020, respectively. Denmark is the second-largest producer of oil in the EU. In 2010, fossil fuels accounted for nearly 80% of Denmark's total primary energy supply (TPES). Oil is the leading fossil fuel in TPES, accounting for around 38%, followed by coal (20%) and natural gas (22%). Combined heat and power (CHP) plants play an important role in Denmark's electricity production, providing around 80% of all electricity produced. In the early 1980s, oil was the main fuel used in CHPs. However, since the 1980s, there has been a significant fuel switching from oil to coal and natural gas in electricity production. In 2010, coal fuelled around 44% of the electricity plants in Denmark while natural gas provided 20%, and biofuels and waste about 13%. Wind turbines generated most of the remaining power. The country imports almost all of the coal it uses for electricity production, mainly from Russia, South Africa and Colombia.

Oil production in Denmark has been decreasing at the rate of 3% to 9% a year since 2005. This downward trend is due to ageing fields, of which the oldest field, Dan, started production in 1972. A total of ten companies contribute to oil production in the Danish sector of the North Sea, of which Shell, A.P Møller and Chevron account for around 85% of total oil production. The Danish government and private companies continue to invest in new production wells. In 2010, development activities totalled DKK 4.9 billion, a 27% decrease compared with 2009. Gas production, on the other hand, has been relatively stable. Oil and gas exploration rights are granted to one or more companies through the "Open Door Procedure" which was introduced in 1997, and covers all non-licensed areas. The Ministry for Climate and Energy issues licences to companies, while the state usually holds a 20% share of each licence group. The state's participation in oil and gas exploration is managed by the Danish North Sea Fund, which was established after the semi-privatisation of the state-owned utility, the Danish Oil and Natural Gas Group, in 2005.

In 2004, the Danish government decided to establish a single entity to own and operate Denmark's electricity and gas transmission network. Before this reform, electricity transmission was completely separated, and owned by two companies: Elkraft (in eastern Denmark) and Eltra (western Denmark). Until the end of 2005, however, the domestic gas transmission network (pipelines) was owned by the Danish Oil and Natural Gas Group. In 2006, the government established a new entity, Energinet.dk, in order to merge all electricity and gas transmission assets. Access to Energinet.dk's network is subject to regulated conditions with tariffs. All prices and terms for using the transmission network are publicly accessible and are under the supervision of the public authorities. In 2005, the Danish Oil and Natural Gas Group merged with five other energy companies, Elsam, Energi E2, NESA, Københavns Energi and Frederiksberg, and formed the Danish Oil and Natural Gas Group. The Danish government still holds around 75% of the Danish Oil and Natural Gas Group's assets. All offshore pipelines connecting the North Sea to the Danish coast and natural gas storage facilities are still owned by former the Danish Oil and Natural Gas Group. Third parties can access the pipelines, but must negotiate the terms and tariffs for access with the company.

Denmark was one of the first EU member states to liberalise both its electricity and gas markets. As a member of Nordpool, Denmark participates in a common electricity market with other Nordic countries. Fluctuations in wholesale electricity prices in Denmark thus depend not only on domestic supply and demand, but also on market conditions in other Nordpool countries. At the retail level, since January 2003, all electricity customers can purchase electricity in the open market and choose the supplier they prefer. The same situation applies to the gas market: the government encourages transparency and competition

for gas consumers through a website, where consumers can compare different suppliers' prices.

Prices, taxes and support mechanisms

Although ex-tax electricity prices are cost-reflective, due to the liberalisation of the electricity market, the end-use retail prices in Denmark are among the highest in the OECD area, because of high rates of taxation. Retail prices consist of four different elements: electrical energy, transmission and distribution elements, and the PSO (additional tax to support renewable energy). Denmark has the highest percentage of taxes in electricity prices for households – 56% in 2010 – while taxes levied on industrial users are relatively lower.

While ex-tax gas prices in Denmark are close to those found in other EU countries, their final retail price is the highest among OECD member states due to high taxes. In 2010, the percentage of taxes on natural gas prices for households amounted to 50.6%.

Income derived from oil and gas production is subject to various taxes and fees: corporate income tax, a hydrocarbon tax (a specific tax on income derived from oil and gas production), royalties and compensatory payments and profit sharing. The 25% corporate tax is deductible from the hydrocarbon tax base, for which the tax rate is 52%. In addition to this, the oil pipeline tariff and compensatory fee can be offset against the hydrocarbon tax, but not against the corporate tax base.

In Denmark, district-heating customers pay a reduced fee for energy delivered from CHP plants. Currently, these plants are partly (around 50%) fuelled by fossil fuels, mostly coal and natural gas. Various sectors in Denmark are exempted from paying energy duties on their fuel consumption. Natural gas enjoyed a reduced energy duty until 2001, coal was also entitled to a similar reduced energy duty from 1982 to 1998. Energy consumption by aircraft, both domestic and foreign air traffic, and energy consumption by ferries, both domestic and foreign ferry services, are the two main sectors that are exempt from fuel-excise tax. Passenger transport and taxis are also exempt from energy duties. Diesel, on the other hand, is subject to a lower fuel-excise tax than petrol.

The Danish government invests in different innovative research and development projects in order to achieve a better oil recovery and to develop new methods of oil and gas extraction. The government invests extensively in offshore methanol stranded and flared natural gas technology. The purpose of this project is to assess the feasibility of a Floating Production, Storage and Offloading (FPSO) vessel capable of converting natural gas to liquid. In addition to these, Denmark is involved in large-scale carbon capture and sequestration (CCS) projects, that are managed by the European Union. Two Danish energy companies, DONG Energy and DTU Chemical Engineering, are playing an important role in EU-funded research into CCS.

Data documentation

General notes

Denmark's fiscal year coincides with the calendar year.

Consumer Support Estimate

Energy Duty Exemption for Aircrafts (no data available)

Fuels used in aircrafts are exempted from energy-duty payments.

Tax expenditures provided by the Danish authorities include exemptions granted to both domestic and foreign air traffic. Since it is impossible to isolate the domestic part of the tax expenditure, data estimates for this measure are not provided.

Sources: Rigsrevisionen (2007).

Energy Duty Exemption for Petrol Used in Agriculture (data for 1996)

This measure provided the agricultural sector with an energy duty exemption for petrol consumed by farmers. This exemption was abolished in 1997.

We allocate the annual payments to diesel oil, motor gasoline, natural gas and heavy fuel oil on the basis of the IEA's Energy Balances for the agricultural sector.

Sources: Danish Ministry of Finance (2002).

Tag: DNK_te_01

Energy Duty Exemption for Ferries (no data available)

Fuels used in ferries are exempt from energy-duty payments.

Tax expenditures provided by the Danish authorities include exemptions granted to both domestic and foreign ferries. Since it is impossible to isolate the domestic part of the tax expenditure, data estimates for this measure are not provided.

Sources: Rigsrevisionen (2007).

Reduced Energy Duty for Coal (data for 1996-1997)

Denmark started to levy tax on coal in 1982. However, coal was entitled to a reduced energy duty in comparison to other fossil fuels such as oil and fuel-oil until 1998.

Sources: Danish Ministry of Finance (2002).

Tag: DNK_te_02

Reduced Energy Duty for CHP Generation (data for 1995-)

Customers of district heating pay a reduced energy duty for heat delivered from a combined generation of electricity and district heating plant. The aim of this exemption is to disincentivise consumers from using other sources of fuel, such as fuel oil, for heating purposes.

We allocate the annual payments to diesel oil, other bituminous coal, refinery gas and heavy fuel oil on the basis of the IEA's Energy Balances for the combined heat and power generation sector.

Sources: IEA, Rigsrevisionen (2007).

Tag: DNK_te_03

Reduced Energy Duty for Diesel (data for 2001-)

The excise duty on diesel used as motor fuel is lower that the excise duty on gasoline. Despite the fact that a compensatory tax fee is charged for diesel vehicles, it does not balance off the lower energy duty on gasoline. Therefore, the reduced excise duty is reported as tax expenditure.

Data estimate for 2011 was unavailable.

Sources: Rigsrevisionen (2007).

Tag: DNK_te_04

Reduced Energy Duty for Natural Gas (data for 1996)

First tax on petrol was introduced in 1917. In 1977, the Danish government introduced a similar tax on other oil products and electricity. As a consequence, from 1977 natural gas was temporarily taxed but only at very low rates. Natural gas was entitled to a reduced energy duty in comparison with other fossil fuels, such as oil and fuel-oil, until 2001. In 1998, the Danish government increased the tax on natural gas, which led to a significant decrease (by about DKK 440 million) of this tax expenditure, according to the Danish Ministry Finance. In 2001, the energy tax rate on natural gas corresponded to the tax level on oil products.

Source: Danish Ministry of Finance (1997), IEA (2002).

Tag: DNK_te_05

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IEA (2002), *Energy Policies of IEA Countries: Denmark 2002 Review,* International Energy Agency, Paris.

Energy statistics

IEA (2011), *Energy Balances of OECD Countries*, International Energy Agency, Paris.

Table 8.1. Summary of fossil-fuel support to coal - Denmark

(Millions of DKK, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Consumer support								
Reduced energy duty for CHP generation	Central	1883	1912	2002	2056	1938	1849	1835

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Table 8.2. Summary of fossil-fuel support to petroleum - Denmark

(Millions of DKK, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Consumer support								
Reduced energy duty for CHP generation	Central	186	139	129	132	144	138	137
Reduced energy duty for diesel	Central	4203	4479	4815	5183	5165	5346	5346

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Chapter 9.

ESTONIA

This chapter identifies, documents, and provides estimates of the various budgetary transfers and tax expenditures that relate to the production or use of fossil fuels in Estonia. An overview of the country's energy economy is first given to place the measures listed into context. A data-documentation section then describes those measures in a systematic way. Whenever possible, the description details a measure's formal beneficiary, its eligibility criteria and functioning, and the fuels whose production or use stand to benefit from the measure. The chapter ends with a set of tables that provide, subject to availability, quantitative information and estimates for the various measures listed.

Energy resources and market structure

Estonia has relatively large supplies of fossil energy in the form of oil shale and peat. Nonetheless, all of the country's gas needs and over 80% of its oil needs are imported. Oil shale dominates the fuel mix, contributing to about two thirds of the country's total primary energy supply (TPES) and covering about 90% of the energy used to generate electricity. Estonia is the only country in the world in which oil shale is the primary source of energy. Natural gas accounts for around 10% of TPES, and is mainly used for heat generation in power plants and boiler houses. Approximately 70% of Estonia's heating is supplied by district heating and half of the energy requirement for district heat production is covered by natural gas. Peat harvested in Estonia accounts for 1% of TPES and is mostly used for heat production in combined heat and power (CHP) plants. Non-fossil energy sources, mainly wood biomass, account for about 14% of TPES. Historically, firewood has been widely used for home heating. The use of wood chips and wood waste in district heat production has increased considerably since 2009 as one of the largest CHP plants in the country (Balti Elektrijaam) was converted to become wood-fired and three new wood-fired co-generation plants were opened in Tartu, Pärnu and Tallinn.

Estonia is actively promoting the development of renewable-energy sources, offering feed-in tariffs for renewable-based electricity. In 2009, non-fossil-based electricity accounted for about 6% of the country's electricity production. The country has a lot of potential to develop wind farms, both on- and offshore. A remarkable number of wind-farm projects has been initiated over the past few years. In 2009, Estonia opened the biggest wind farm in the Baltic states, Aulepa (40 MW).

Eesti Energia Kaevandused, a subsidiary of the state-owned electricity production group, Eesti Energia, dominates the production of oil shale. Due to the low calorific value of oil shale (the country's main fuel), the thermal efficiency of Estonia's electricity generating plants is very low. As a consequence, Estonia's per capita CO_2 emissions from electricity and heat production stood at almost 8.5 tonnes in 2009, which was high compared to the OECD average of 3.8 tonnes. Moreover, Estonia's economy is one of the most energy-intensive in the European Union despite considerable efforts to reduce the energy intensity since 1995. In 2008, producing one unit of GDP in Estonia required about three times more energy than in an average EU country.

The electricity market in Estonia is small compared to other EU countries. For historical reasons, Estonia is well interconnected with both Russia and Latvia as these countries used to be a part of the north-western common power system in the former Soviet Union. A direct interconnection to Finland was established in 2006, enabling access to the Nordic energy market (Nord Pool).

The opening of the electricity market began in 2009. In that year, large electricity consumers (accounting for 35% of the total annual electricity consumption in Estonia) were granted the right to buy electricity from the newly opened market. However, as prices in the regulated market were lower, such purchases did not initially take place. Since 2010, large electricity consumers have been obliged to buy electricity in the free market. In April 2010 Estonia joined the Nord Pool spot electricity market.

Electricity production in Estonia is dominated by the state-owned company, Eesti Energia. In 2009, its share of the wholesale electricity market was 90%, while its share of the retail market was 87%. Transmission was unbundled from production in 2010. The state-owned company, Elering, provides the transmission networking service, but also acts as the single transmission system operator. There are 38 distribution networks, the largest of which is owned by Eesti Energia, with 81% share of the distribution market.

The Estonian natural-gas market is controlled by a single formerly state-owned company, AS Eesti Gaas (EG), which is currently owned by Gazprom (37%), E.On (33.66%), Fortum (17.7%), Itera (9.9%), and various smaller shareholders. EG owns the transmission-system assets (the system operator being EG Võrguteenus, a wholly owned subsidiary of EG) and the majority of the distribution assets, and is currently the sole importer and wholesaler of natural gas. This situation will have to change in the future as in June 2012 Estonia's parliament approved legislation separating ownership of natural-gas sales from transmission operations from the beginning of 2015. In the distribution market, EG has a market share of about 92% and indirectly controls the remaining 8% by being the sole supplier to the natural-gas resellers. Natural gas is supplied under long-term contracts, which are due to expire in 2015. Since July 2007 the Estonian gas market has been fully opened to competition. However, as a result of past developments of the natural-gas market within the Baltic region, the current infrastructure does not allow gas purchases from elsewhere and the country is therefore entirely dependent on the natural gas supplied by Gazprom, both directly from Russia and indirectly through Latvia.

The oil market in Estonia is also fully open to competition. The wholesale market for liquid fuels is, however, concentrated in the hands of ORLEN Lietuva, the leading fuel importer and wholesaler. The majority of shares of ORLEN Lietuva (formerly known as Mazeikiu Nafta), which is based in Lithuania, is held by the PKN ORLEN, a major European oil refiner and petrol retailer from Poland. The retail market for liquid fuels is served by a number of companies, including Statoil and Neste, none of which is dominant. Shale oil is produced locally by three companies: the state-owned Eesti Energia Õlitööstus AS, and the privately-owned companies VKG Oil AS and Kiviõli Keemiatööstus OÜ. The majority (85%) of the country's oil production is exported, but shale oil is also used locally, primarily for heating purposes.

Prices, taxes and support mechanisms

The Estonian Competition Authority (ECA) is responsible for approving and reviewing fuel and energy prices, as well as for setting connection charges and the rates for transmission and distribution services of network operators. Until the full liberalisation of the electricity market, which is expected to take place in 2013, electricity is sold to most of the customers in the regulated market. Currently, most of the electricity for Estonian consumers is produced by the Narva power plant, which belongs to Eesti Energia. The ECA is responsible for approving the maximum electricity sales price in the regulated electricity market and controlling related costs. The ECA also sets the price of oil shale sold to the Narva power plant. Electricity-network charges are approved for a three-year period and adjusted annually.

Natural-gas prices in the wholesale market are negotiated and depend on prevailing market prices; they are not subject to approval by the regulator. Due to the market dominance of a single company, Gazprom, the sales margin added to the purchase is subject to approval by the state authorities and there is a limit is set on it. Prices of oil, wood and peat are freely determined by the market. The maximum price for district heating in larger undertakings is set by the ECA.

Both value-added tax (VAT) of 20% and excise duty are levied on all energy products, except for peat and wood.[1] Apart from these exceptions, excise duties are applied to motor fuels, liquid fuels, solid fuels, natural gas and other energy products, at varying rates. Several exemptions and reduced rates are granted to specific users and for specific uses of fuel, e.g. in

[1] The Alcohol, Tobacco, Fuel and Electricity Excise Duty Act that currently regulates the excise-duty rates levied on various fuels and electricity was introduced in 2008.

the agricultural and fishing sectors. Exemptions to the forestry sectors were abolished at the end of 2011. Since 2008 an excise duty has been levied on electricity and since 2007 an additional renewable-energy fee has been imposed on electricity in order to finance subsidisation of renewable-based electricity and combined heat and power generation.

Local producers are subject to environmental charges when emitting pollutants into the air and water, when depositing waste, or when extracting mineral resources or abstracting water. Also, the state offers support to those companies that want to invest in making their businesses more energy efficient or environmentally friendly.

Data documentation

General notes

The fiscal year in Estonia coincides with the calendar year. Following OECD convention, amounts prior to 2011 are expressed as "euro-fixed series," meaning that the fixed EMU conversion rate (1 EUR = 15.647) was applied to data initially expressed in the Estonian kroon (EEK).

Consumer Support Estimate

Excise-Duty Exemption for Fuels Used in Air Navigation (no data available)

An exemption from the excise-duty payments is applied to fuels used by commercial or state-owned aircrafts.

No estimates are available.

Sources: Alcohol, Tobacco, Fuel and Electricity Excise Duty Act §27.

Excise-Duty Exemption for Fuels Used as Inputs to Production (no data available)

Fuels (including natural gas) used for production of non-energy products are exempt from the excise-duty payments. Such uses include, e.g. production of glues, paints or in cleaning production equipment.

No estimates are available.

Sources: Alcohol, Tobacco, Fuel and Electricity Excise Duty Act §27, Estonian Tax and Customs Board (2011).

Excise-Duty Exemption for Fuels Used in Domestic Commercial Fishing (data for 2007, 2009-)

Since 2007 both diesel fuel and light heating oil used by domestic fishing boats are granted an excise-duty exemption. There is a limit imposed on the amount of fuel to which the exemption is applied, it is based on the amount of fish caught or the capacity of the boat's engine.

The European Commission considers this measure to be State aid assisting small and medium enterprises and it has approved it until the end of 2013.

Sources: EC (2011); Excise Duty on Marked Fuel, Explanatory Memorandum of the 2010 State Budget, Explanatory Memorandum of the 2011 State Budget; Explanatory Memorandum of the 2012 State Budget.

Tag: EST_te_01

Excise-Duty Exemption for Fuels Used in Mineralogical Processes (no data available)

Liquid fuels and natural gas that are absolutely essential for conducting certain mineralogical processes have been exempt from the fuel excise duty since 2005 and 2008 respectively.

No data estimates are available.

Sources: Alcohol, Tobacco, Fuel and Electricity Excise Duty Act §27.

Excise-Duty Exemption for Shale Oil Used in District Heating (data for 2005-2010)

Oil shale used for heat production in district heating was not subject to excise-duty payments in the period between 2005 and 2010.

Although there are no data estimates readily available in government publications, the Statistical Office Estonia published enough information for estimates to be calculated using the revenue forgone method for the years 2005-2010.

Sources: Alcohol, Tobacco, Fuel and Electricity Excise Duty Act §27, Statistical Office Estonia.

Tag: EST_te_02

Excise-Duty Exemption for Shale-Derived Fuel Oil Used in District Heating (data for 2005-2007)

Shale-derived fuel oil used for heat production in district heating had been benefitting from a tax exemption until the end of 2007, when that excise-duty exemption was abolished.

Although there are no data estimates readily available in government publications, the Statistical Office Estonia published enough information for estimates to be calculated using the revenue forgone method for the years 2005-2007.

Sources: Alcohol, Tobacco, Fuel and Electricity Excise Duty Act §27, Statistical Office Estonia.

Tag: EST_te_03

Excise-Duty Exemption for Heating Fuels Used by Households (data for 2005-2010)

Shale-derived fuels and solid fuels used by households as heating fuels are all exempt from the fuel-excise duty. Although the law stipulates that solid fuels are exempt from the fuel-excise duty, this exemption does not apply to peat, as it is not encompassed by the fuel excise duty. Since shale-derived fuel oil is not used by households for heating purposes, the measure fully pertains to coal.

Although there are no data estimates readily available in government publications, the Statistical Office Estonia published enough information for estimates to be calculated using the revenue forgone method for the years 2005-10.

Sources: Alcohol, Tobacco, Fuel and Electricity Excise Duty Act §27, Statistical Office Estonia.

Tag: EST_te_04

Excise-Duty Exemption for Fuels Used in Stationary Engines and Warehouse Vehicles (no data available)

Those fuels that are used in stationary engines and vehicles that are used in warehouses (i.e. vehicles that are not allowed to drive on public roads) are exempt from the fuel excise duty.

No estimates are available.

Sources: Alcohol, Tobacco, Fuel and Electricity Excise Duty Act §27.

Excise-Duty Exemption for Natural Gas Used in Network Operation (no data available)

Since 2009, natural gas used for the purpose of operating natural gas networks is exempt from the excise duty normally levied on natural gas.

No estimates are available.

Sources: Alcohol, Tobacco, Fuel and Electricity Excise Duty Act §27.

Excise-Duty Reduction for Diesel Fuel and Light Heating Oil Used for Special Purposes (data for 2005-2007 and 2009-)

Since 1997, a reduced rate of the fuel excise duty is applied to special uses of diesel fuel and light heating oil, for the purpose of which both diesel and light heating oil are marked with a special fiscal marker.

In the period between 2004 and 2011, marked diesel was used as fuel in rail transport of passengers and goods, water cargo, fishing vessels, stationary engines and for heating and in combined production of heat and electricity. In the same period, marked light heating oil was used as fuel in rail transport of passengers and goods, water cargo, fishing vessels, stationary engines, tractors and other machinery used in agriculture, forestry and construction, machines and vehicles that do not use public roads and in combined production of heat and electricity.

Since 2012, marked fuels can no longer be used in machinery used in forestry and construction. The government is planning to abolish marked fuel by gradually phasing out other uses of marked fuel.

Estimates for the period between 2005 and 2007 were provided by the Ministry of Finance using the revenue-forgone calculation method. Estimates since 2009 have been provided in the explanatory notes of the state budget, prepared by the Ministry of Finance.

Sources: Excise Duty on Marked Fuel, Explanatory Memorandum of the 2010 State Budget; Explanatory Memorandum of the 2011 State Budget; Explanatory Memorandum of the 2012 State Budget, Ministry of Finance.

Tag: EST_te_05

Reduced VAT Rate on Heating Fuels to Certain Consumers (no data available)

In the period between the beginning of 2000 and July 2007, a reduced rate of VAT of 5% was applied to heating fuels consumed by households, churches, hospitals, local-government buildings and state-financed organisations. The same reduced rate over the same period was also applied to peat, coal and firewood sold to households.

No estimates are available.

Sources: Estonian Value Added Tax Act §15.

Exemption from CO_2 Pollution Charge for Peat (data for 2006-2009)

In 2000, Estonia implemented a CO_2 pollution charge for large energy producers with total thermal capacity exceeding 50MW. The Environmental Charges Act that was approved in late 2005 extended the charge to all emissions from electricity and heat production.

During the period between July 2003 to June 2009, emissions from biofuels (and biomass since 2006), peat and waste combustion that were subject to the charge were all exempted from it. These exemptions were abolished at the end of June 2009 as they were deemed incompatible with the EU rules on State aid.

Although there are no data estimates readily available in government publications, the Ministry of the Environment and the Ministry of Finance published enough information for estimates to be calculated using the revenue forgone method for the years 2006-2009.

Sources: Environmental Charges Act §19(5), Pollution Charge Act §8(4).

Tag: EST_te_06

Compensation for Farmers and Fishers for an Increased Excise Duty on Diesel (data for 2005 and 2006)

In 2005, the fuel excise-tax rate on diesel used in agriculture and on board fishing vessels was increased from EUR 26.8 to 44.1 per 1 000 litres. In order to compensate farmers and fishers for this increase, the government decided to grant compensatory payments to farmers (in 2005) and fishers (in 2005 and 2006).

Those farmers that were recipients of the single area payments, as stipulated by the Euorpean Union's Common Agricultural Policy, were eligible for the compensatory payment amounting to EUR 0.0173 per litre of diesel used. A maximum of 125 litres could be claimed on each hectare of arable land. The total amount of compensatory payments granted by the government to farmers in 2006 amounted to EUR 0.65 million.

Those fishers who owned a commercial fishing permit were also eligible for the compensatory payments from the government. The value of the payment to each fisher was based on either the capacity of the vessel or the amount of fish caught. The total amount of compensatory payments granted by the government to fishers in 2005 and 2006 amounted to EUR 0.306 million and EUR 0.302 million respectively.

Sources: Ministerial Regulations No. 88 (08.08.2006), Nr 98 (28.09.2005), and No. 34 (20.03.2006); PRIA (2005, 2006).

Tag: EST_te_07

Feed-In Premium for Peat and Retort Gas Used in CHP Plants (no data available)

Since 2007 combined heat and power (CHP) plants that use peat or retort gas[2] in CHP generation are offered a feed-in premium of 32 EUR per MWh. The maximum period for which a CHP plant can obtain this support is 12 years.

No estimates are available.

Sources: Electricity Market Act.

2 Retort gas is a by-product of pyrolysis that occurs when oil shale is heated to a high temperature in the absence of air.

Excise-Duty Exemption for Fossil Fuels Used for Electricity Production (no data available)

Since 2008, all fossil fuels normally subject to the excise duty have been exempt from it provided they are used for electricity production.

No estimates are available.

Source: Alcohol, Tobacco, Fuel and Electricity Excise Duty Act §27.

General Services Support Estimate

Direct Project Grants to Producers of Shale-Derived Oil (data for 2009-2010)

Over the past decade several environmental projects conducted by producers of shale-derived oil have received financial support from the Environmental Investment Centre.

Estimates are available for four environmental projects financed by the Environmental Investment Centre. Since the information on the amount spent per year was unavailable, the total value of each of these four projects is assigned to their starting date.

In the coming years, the state also plans to spend over EUR 35 million to finance the closing of oil-shale residual landfills in Kiviõli and Kohtla-Järve, as they do not meet environmental requirements. This project has to be completed before 16 July 2013.

Since this measure does not increase current production or consumption of shale-derived oil, it has been allocated to GSSE.

Source: Enterprise Estonia, Environmental Investment Centre; Structural Assistance Act for the period 2007-2013

Tag: EST_dt_01

Direct Project Grants to Oil-Shale Based Electricity and Heat Production (data for 2006-2011)

Over the past decade several projects conducted by producers of oil-shale based electricity and heat have received financial support from the Environmental Investment Centre or Enterprise Estonia.

Data estimates are available for seventeen projects — either environmental projects financed by the Environmental Investment Centre or development projects financed by Enterprise Estonia (the information provided is not specific enough). Since the information on the amount spent per year was unavailable, the total value of each of these projects is assigned to their starting date.

Since this measure most likely does not increase current production or consumption of shale-derived oil, it has been allocated to GSSE.

Sources: Enterprise Estonia, Environmental Investment Centre.

Tag: EST_dt_02

Sources

Policies or transfers

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Table 9.1. Summary of fossil-fuel support to coal - Estonia

(Millions of EUR, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Producer support								
Support for capital formation								
Direct project grants to producers of shale derived oil	Central	..	..	..	..	0.2	0.5	..
Consumer support								
Direct project grants to oil shale based electricity and heat production	Central	..	0.6	0.6	..	0.9	0.3	3.5
Excise duty exemption for shale oil used in district heating	Central	0.7	0.7	0.6	0.6	0.5	0.5	n.a.
Exemption from CO2 pollution charge for peat	Central	n.a.	0.1	0.2	0.2	0.2	n.a.	n.a.
Excise duty exemption for heating fuels used by households	Central	0.2	0.2	0.1	0.1	0.1	0.1	n.a.

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the Statistical Office of Estonia's database. Data reported under lignite are for oil shale.

Table 9.2. Summary of fossil-fuel support to petroleum - Estonia

(Millions of EUR, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Consumer support								
Excise duty exemption for shale derived fuel oil used in district heating	Central	0.4	0.8	0.6	n.a.	n.a.	n.a.	n.a.
Compensation for farmers and fishers for an increased excise duty on diesel	Central	0.3	1	n.a.	n.a.	n.a.	n.a.	n.a.
Excise duty reduction for diesel fuel and light heating oil used for special purposes	Central	54	56	55	..	75	92	70
Excise duty exemption for fuels used in domestic commercial fishing	Central	n.a.	n.a.	0.8	..	1	2	1

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the Statistical Office of Estonia's database.

Chapter 10.

FINLAND

This chapter identifies, documents, and provides estimates of the various budgetary transfers and tax expenditures that relate to the production or use of fossil fuels in Finland. An overview of the country's energy economy is first given to place the measures listed into context. A data-documentation section then describes those measures in a systematic way. Whenever possible, the description details a measure's formal beneficiary, its eligibility criteria and functioning, and the fuels whose production or use stand to benefit from the measure. The chapter ends with a set of tables that provide, subject to availability, quantitative information and estimates for the various measures listed.

Energy resources and market structure

In 2010, about 55% of Finland's total primary energy supply (TPES) came from fossil fuels, with petroleum accounting for 25%, followed by coal and peat (19%), and natural gas (10%).The share of renewable energy stood at 25% (wood comprised 20% and hydropower 3%). Nuclear energy also plays an important role, accounting for a further 17% of TPES. Other energy sources and imported electricity make up the rest. Around 70% of Finland's energy needs is imported, mostly from neighbouring Russia. Energy intensity and energy consumption per capita in Finland are both very high due to the country's relatively large heavy industry and its proximity to the Arctic Circle.

Finland has no known resources of coal, crude oil or natural gas. It is, however, endowed with very large resources of peat, since about a third of all Finnish surface area is covered with swamps and wetlands. Of its 9.3 million hectares of peat lands, 1.1 million hectares are protected and 0.06 million hectares are currently being harvested for peat. Technically and economically harvestable peat resources have been estimated at about 12 800 TWh (1 100 Mtoe), which is about 400 times more than Finland's total annual primary energy consumption.

Peat provides a significant part of Finland's energy: it covers between 5% and 8% of the country's electricity consumption (4 to 7 TWh per year), depending on the year, and over 20% of its district heat consumption. Peat is currently used in 55 large power plants (most of them CHP plants) and in 120 medium-sized district-heating plants. It is also sometimes used in smaller heating plants. Previous plans of extending the use of peat to the transport sector with two peat-to-diesel plants have been dropped.

Finland's energy market is dominated by a few large state-owned companies, though municipal utilities also play a strong role in the local electricity and district-heating markets. The role of the private sector is thus small compared with most other OECD countries. Vapo Oy, Finland's leader of peat extraction and the world's largest peat supplier, is a company in which the state holds a 50.1% share. The company was initially established in 1940 to provide firewood to state companies and other state organisations, such as the national railway company. Between 1949 and 1984, VAPO was also involved in the distribution of imported fossil fuels. Peat has, however, been the core business of VAPO since the 1980s for both its extraction and use, and the company has no longer been restricted to solely supplying state organisations. In the recent years, however, the share of peat in Vapo's business has been declining due to an increasing production of wood-based fuels: In 2010, peat comprised only 30% of company's turnover.

The Finnish petroleum market is dominated by Neste Oil, which owns Finland's two refineries located in Naantali and Porvoo, and operates the country's leading chain of service stations (in 2010, its market share in retail petroleum sales was 37%). Neste Oil is listed on the NASDAQ OMX Helsinki. The state maintains a controlling interest (50.1% of shares) in the company. Although refined petroleum products are Neste's core business, the company also produces and distributes biofuels, mainly based on palm oil, along with other types of domestic and imported biomass.

The Energy Market Authority *(Energiamarkkinavirasto)* oversees Finland's electricity and natural gas markets. The electricity market is dominated by Fortum, which is the country's largest power distributor and heat producer, and is both the second largest electricity seller and third largest power generator among Nordic countries. Fortum's market share in Finland's electricity market is close to 27%. Fortum Oyj is a publicly listed energy company, in which the state holds 50.8% of shares. Fortum fuels the numerous power plants it owns using coal, nuclear energy, peat, firewood, hydropower and wind energy. Pohjolan Voima Oy (PVO) is the second biggest Finnish energy company, which owns all hydro and

thermal power plants (including biofuel-fired power plants). PVO is the founder and main shareholder of the Olkiluoto Nuclear Power Plant operator, Teollisuuden Voima Oy. Finnish pulp and paper manufacturers, UPM Oyj and Stora Enso Oyj are major shareholders of PVO, holding 42.0% and 15.6% of shares respectively. The Finnish transmission grid is owned by Fingrid, another state-owned company. Distribution companies are owned by municipalities or private companies.

Finland's electricity market is fully liberalised and customers are free to choose their supplier. Grid access for small independent electricity producers is in principle guaranteed, but all costs are subject to negotiations between producers and distribution-grid operators. All energy prices in Finland are set by the market. Electricity prices are influenced by the common Nordic electricity market (Nord Pool).

The Finnish gas market is dominated by Gasum (established in 1994), whose shares are 24% owned directly by the state and 31% by Fortum. Gasum owns and operates the 1200-km gas-transmission network, and all its natural gas originates from Russia. Gasum owns 500 km of gas distribution networks, gas-fired power plants, and filling stations for natural-gas vehicles. Although natural gas constitutes the core business, Gasum is also involved in the biogas business. The company started to transmit and distribute biogas for transport uses in its network in October 2011. Gasum is the only supplier of natural gas and biogas to the transmission network. Distribution networks are owned by 23 companies, most of them municipal.

Prices, taxes and support mechanisms

Energy in Finland is subject to energy-taxation rules, a new version of which was implemented on 1 January 2011. In Finland, energy taxes are levied on electricity, coal, natural gas, peat, tall oil[1] and liquid fuels. Currently, energy taxation takes account of the energy content, carbon dioxide emissions and local emissions. It thus comprises both an energy-content component and a CO_2 component.[2] The energy-content tax, levied on both fossil fuels and biofuels, reflects the volumetric energy content of the fuel, which is based on the calorific values specified in Renewable Energy Sources (RES) Directive (2009/28/EC). A lower tax rate is applied to heating fuels in comparison to transport fuels. As for the transport fuels, the energy-tax rate on diesel, natural gas and electricity is lower than the environmental-tax model on which the environmental taxation in Finland is based presumes. In these cases, an annual propelling-force tax is levied on vehicles in order to achieve the tax burden required by the environmental-tax model. Also, a reduced energy content tax is granted for fuel grades that are better in terms of local emissions than traditional fossil fuels, and this reduction corresponds to the imputed value of the emission benefit in accordance with the principles set out in Directive 2009/33/EC of the European Parliament and of the Council on the promotion of clean and energy-efficient road transport vehicles. The CO_2 tax is based on lifecycle CO_2 emissions relating to the fuel to which it is applied. The CO_2 emissions of each fuel are determined using the fuel classification established by the IEA and the Eurostat. Finland applies different CO_2-tax rates for transport fuels and heating fuels, which currently stand at EUR 50 per tonne and EUR 30 per tonne respectively. The CO_2 tax is levied on both fossil fuels and biofuels.[3] Biofuels are classified into three categories, which

1 Tall oil is a fuel obtained as a by-product of pulping (mainly coniferous) trees.

2 All fuels are also subject to a strategic stockpile fee, which aims at ensuring energy security in Finland.

3 The tax system is fuel-neutral in the sense that it supports those fuels (fossil or bio-derived) that are most environmentally friendly, i.e. it does not promote biofuels *per se*. Consumption of

are based on the RES Directive division: those that achieve less than 35% CO_2-emission savings relative to equivalent fossil fuels are subject to the full CO_2-tax rate that is levied on fossil fuels; those that achieve between 35% and 60% of CO_2-emission savings are subject to half of the full CO_2-tax rate; second-generation biofuels (their CO_2-emission savings exceed 60%) are not taxed. Also, a flat-rate reduction of 50% applied to all combined heat and power (CHP) plants. The energy taxation does not apply to solid or gaseous biofuels (e.g. wood and biogas). Peat is subject to a specific energy tax that does not follow the current energy-taxation rules, which implies a much smaller tax rate on a per-unit-of-energy basis in comparison to coal or natural gas. The energy tax levied on peat, however, will be increasing gradually until 2015. Peat used in small plants that produce less than 5 000 MWh annually is exempt from the energy tax.[4] Moreover, to cover the expenses incurred by the state to secure the supply of energy, a strategic stockpile fee is levied on liquid fuels, electricity, coal and natural gas.

Fuels used for electricity production are all exempt from the energy tax. The general tax rate for electricity is EUR 17.03/MWh, while the lower rate for the industry and agricultural sectors is EUR 7.03/MWh. Large scale condensing power generation using peat was supported by a feed-in tariff from 2007 through 2010. This peat feed-in tariff payment was not fixed, but adjusted monthly, based on the market prices for electricity, peat, coal and ETS credits. It was paid directly by the owner of the national transmission grid, Fingrid, which in turn charged all users of the transmission grid. In addition, the Act on Energy Peat Storage provides for the non-commercial long-time (up to three years) stockpiling of harvested peat in order to smooth the impact of annual fluctuations in peat production. Payments are worth EUR 0.03 per MWh per month and are made by the National Emergency Supply Agency.

Data documentation

General notes

The fiscal year in Finland coincides with the calendar year. The Ministry of Finance reviewed the collected estimates and provided calculations of missing estimates where necessary.

Producer Support Estimate

Electricity Production Subsidy for Peat Used in Small CHP Plants (data for 1998-2005)

This measure supporting the production of electricity generated using peat was worth EUR 2.5 per MWh for small and medium-sized combined heat and power (CHP) plants. It was introduced in 1998 and expired at the end of 2005.

Since this measure makes peat extraction more economically viable, we allocate annual payments to the PSE.

Sources: Act on Excise Duty on Electricity and Certain Fuels (1260/1996); Finnish Customs (2011); Ministry of Finance.

Tag: FIN_dt_01

biofuels in the transport sector is encouraged through an obligation of the fuel suppliers to provide a legally specified share of biofuels in the total fuels that they sell, as stipulated by the Act on Promotion of Biofuels in Transport (446/2007).

4 The government's rationale for this exemption is that the administrative burden associated with collecting the tax from small peat plants would be high compared with the revenue collected.

Feed-In Tariff for Peat-Based Condensing Power Production (data for 2007-2010)

This feed-in tariff was introduced in 2007 and supported four peat-fired large power plants having a power production capacity of at least 120 million volt-ampere. The amount of support (up to EUR 4.5 per MWh) was based on prices for electricity, coal, peat and CO_2 emissions permits as set under the EU Emission Trading Scheme. The tariff was financed through a charge levied on all users of Finland's transmission grid by the national transmission-grid operator Fingrid. This charge varied between EUR 0.002 and EUR 0.08 per MWh. This feed-in tariff scheme expired at the end of 2010.

Since this measure makes peat extraction more economically attractive, we allocate annual payments to the PSE.

Sources: Act on Feed-in Tariff for Peat Used in Large Condensing Power Plants (322/2007), Fingrid (2011).

Tag: FIN_dt_02

Consumer Support Estimate

Reduced Energy-Tax Rate on Diesel Used in Transport (data for 2002-)

This measure relates to the reduced energy-tax rate on diesel fuel used in transport. Until 1 January 2011, the benchmark against which this tax expenditure used to be calculated was based on the sole energy content of the fuel. Between 2003 and 2007, the previous benchmark — the energy-tax rate on gasoline — amounted to EUR 66.1 per MWh, while the reduced energy-tax rate for diesel was set at EUR 34.2 per MWh. Between 2008 and 2010, the energy-tax rate on diesel was then EUR 34.1 per MWh lower than the benchmark for transport fuels, which was the new energy-tax rate on gasoline (EUR 70.5 per MWh).

As of 1 January 2011, the benchmark against which this tax expenditure has been calculated is based on energy content, CO_2 emissions, and local emissions. The reduced energy-tax rate has increased from EUR 0.364 per litre to EUR 0.4695 per litre in 2012.

The annual propelling-force tax is levied on all vehicles using fuels that are taxed at a lower energy-tax rate, i.e. diesel fuel, natural gas and electricity. On average, the propelling-force tax for a diesel-driven vehicle amounts to EUR 420 per annum.

Sources: Act on Excise Duty on Liquid Fuels (1472/1994), Energy Taxation in Finland (2012), Statistics Finland (2011, Table 5.1), Ministry of Finance, VATT (2010, 2011).

Tag: FIN_te_01

Reduced Energy-Tax Rate on Natural Gas Used in Transport (no data available)

This measure relates to the reduced energy-tax rate applied to natural gas used in transport. The benchmark against which this tax expenditure used to be calculated was based only on energy content of a fuel: Between 2008 and 2010, the energy-tax rate on natural gas used in transport was EUR 68 per MWh lower than the benchmark for transport fuels, which was the energy-tax rate on gasoline. As of 1 January 2011, the benchmark against which this tax expenditure is calculated is based on energy content, CO_2 emissions and local emissions.

The annual propelling-force tax is levied on all vehicles using fuels that are taxed at a lower energy-tax rate, i.e. diesel fuel, natural gas and electricity.

Annual payments are not calculated as their value is too low (less than EUR 0.5 million per year).

Sources: Act on Excise Duty on Electricity and Certain Fuels (1260/1996), Energy Taxation in Finland (2012), Ministry of Finance; VATT (2011).

Reduced Energy-Tax Rate for Fuels Used in Private Leisure Flights (data for 2007-2010)

This tax expenditure relates to the reduced energy-tax rates on kerosene-type jet fuel and aviation gasoline used in domestic recreational aviation. The measure was introduced in 2008 — prior to that year, all aviation fuels purchased in Finland were exempt from the energy tax. The benchmark against which this tax expenditure was calculated was based on energy content of a fuel: Between 2008 and 2010, the energy tax rates on aviation kerosene (jet fuel) and aviation gasoline were respectively EUR 30.1 per MWh and EUR 20.1 per MWh lower than the benchmark for transport fuels, which is the energy-tax rate on conventional gasoline.

Annual payments are allocated to kerosene-type jet fuel and aviation gasoline by the Ministry of Finance.

This tax expenditure was removed at the end of 2011 as the energy-tax rates on fuels used in domestic recreational aviation were equalised with the benchmark. Fuels used in aviation other than private leisure flights continue to be exempt from both the energy tax and the strategic stockpile fee. These exemptions, however, are not considered to be tax expenditures.

Sources: Act on Excise Duty on Liquid Fuels (1472/1994), Energy Taxation in Finland (2012), Ministry of Finance, VATT (2010, 2011).

Tag: FIN_te_03

Reduced Energy-Tax Rate for Light Fuel Oil Used in Mobile Machinery (data for 2008-)

This measure relates to the reduced energy-tax applied to light fuel oil used in mobile machinery. Until 1 January 2011, the benchmark against which this tax expenditure was calculated was based on energy content of a fuel. Between 2003 and 2007, the energy-tax rate on gasoline amounted to EUR 66.1 per MWh, while the reduced energy-tax rate on light fuel oil amounted to EUR 59 per MWh. Between 2008 and 2010, the energy-tax rate on light fuel oil was EUR 61.8 per MWh lower than the benchmark for transport fuels, which is the energy-tax rate on gasoline (EUR 70.5 per MWh).

As of 1 January 2011, the benchmark against which this tax expenditure has been calculated is based on energy content, CO_2 emissions and local emissions. As a consequence, the reduced energy-tax rate has increased by about 84%.

Sources: Act on Strategic Stockpile Fee (1280/2003), Energy Taxation in Finland (2012), Ministry of Finance, VATT (2010, 2011).

Tag: FIN_te_04

Reduced Energy-Tax Rate for Heavy Fuel Oil Used in Heating (data for 2002-)

This measure relates to the reduced energy-tax rate applied to heavy fuel oil used for heating purposes. The benchmark against which this tax expenditure was calculated used to be based only on energy content of a fuel: Between 2008 and 2010, the energy-tax rate for heavy fuel oil was EUR 2.8 per MWh lower than the benchmark applied to fuels used for heating purposes, which was the energy-tax rate for light fuel oil.

As of 1 January 2011, the benchmark against which this tax expenditure was calculated was based on both the energy content and the CO_2 emissions. This tax expenditure was removed at the end of 2011.

A reduced energy-tax rate on heavy fuel oil still applies to its use in road transport and shipping, but only the estimates pertaining to the latter are available (see "FIN_te_14").

Sources: Act on Excise Duty on Electricity and Certain Fuels (1260/1996), Energy Taxation in Finland (2012), Ministry of Finance; VATT (2011).

Tag: FIN_te_05

Reduced Energy-Tax Rate for Coal Used in Heating (data for 2002-)

This measure relates to the reduced energy-tax rate applied to consumption of coal. Until 1 January 2011, the benchmark against which this tax expenditure used to be calculated was based only on energy content of a fuel. Between 2008 and 2010, the energy-tax rate for coal was EUR 1.6 per MWh lower than the benchmark applied to fuels used for heating purposes, which was the energy-tax rate for light fuel oil.

As of 1 January 2011, the benchmark against which this tax expenditure was calculated was based on both the energy content and the CO_2 emissions. This tax expenditure was removed at the end of 2011.

Sources: Act on Excise Duty on Electricity and Certain Fuels (1260/1996), Energy Taxation in Finland, Ministry of Finance, VATT (2010, 2011).

Tag: FIN_te_06

Reduced Energy-Tax Rate for Natural Gas Used in Heating (data for 2008-)

This measure relates to the reduced-energy tax rate applied to natural gas used in heating. Until 1 January 2011, the benchmark against which this tax expenditure was calculated was based on energy content of a fuel. Between 2008 and 2010, the energy-tax rate for natural gas was EUR 6.6 per MWh lower than the benchmark applied for heating purposes, which is the energy-tax rate on light fuel oil. As of 1 January 2011, the benchmark against which this tax expenditure is calculated has been based on both the energy content and the CO_2 emissions. The new tax preference will thus be reduced to EUR 4.7 per MWh.

This measure will be entirely phased out by the end of 2015.

Sources: Act on Excise Duty on Electricity and Certain Fuels (1260/1996), Energy Taxation in Finland (2012), Ministry of Finance, VATT (2010, 2011).

Tag: FIN_te_07

Reduced Energy Tax for Heavy and Light Fuel Oils Used in Greenhouses (data for1998-)

Commercial greenhouses are entitled to energy-tax rebates on using heavy and light fuel oils for heating purposes.

Annual payments are allocated to heavy and light fuel oils by the Ministry of Finance.

Sources: Act on Excise Duty on Liquid Fuels (1472/1994), Energy Taxation in Finland (2012), Finnish Customs (2011), Ministry of Finance.

Tag: FIN_te_08

Energy-Tax Refund for Energy-Intensive Enterprises (data for1999-)

This measure provides certain energy-intensive industries with an energy-tax refund on their consumption of electricity, coal, natural gas, tall oil, light fuel oil and heavy fuel oil, and biofuel oil.

Since 2012, annual estimates are expected to rise to the level of EUR 200 million due to the structural change in this programme (many more companies are expected to participate).

Annual payments are allocated to coal, natural gas, light fuel oil and heavy fuel oil by the Ministry of Finance. Since 2011 payments are also allocated to peat as it is no longer exempt from energy-tax payments. The share of payments pertaining to light fuel oil has been excluded from reporting as it accounts for only about 0.5% of the total.

Sources: Act on Excise Duty on Electricity and Certain Fuels (1260/1996), Energy Taxation in Finland (2012), Finnish Customs (2011), Ministry of Finance.

Tag: FIN_te_09

Energy-Tax Rebates for Certain Fuels Used in Agriculture (data for 2005-)

This measure provides the agricultural sector with an energy-tax rebate on its consumption of light and heavy fuel oil, and electricity. The measure was introduced in 2006 and is still in operation. Its scope was increased in 2011, when a reduced energy-tax rate was also applied to biofuel oil used for heating.

Annual payments are allocated to light and heavy fuel oils by the Ministry of Finance. The share of payments pertaining to heavy fuel oil has been excluded from reporting as it accounts for less than 0.5% of the total.

Sources: Act on Tax Rebates for Certain Fuels Used in Agriculture (603/2006), Energy Taxation in Finland (2012), Ministry of Finance, VATT (2011).

Tag: FIN_te_10

Reduced Energy-Tax Rate on Peat Used in Heating (data for 2010-)

From 2005 until 2010, peat was exempted from the energy tax that is normally levied on all energy products. As of 1 January 2011, an energy-tax rate on peat amounting to EUR 1.90 per MWh was introduced. The energy-tax rate applied to peat is thus lower that the energy-tax rate applied to light fuel oil, which is the benchmark applied for heating purposes. This energy-tax rate will be increased in the coming years: to EUR 4.90 per MWh in 2013 and EUR 5.90 per MWh in 2015.

Peat used in small plants in quantities below 5 000 MWh annually continues to be exempted from the energy tax. Estimates in this case are not available.

Sources: Act on Excise Duty on Electricity and Certain Fuels (1260/1996), Energy Taxation in Finland (2012), Ministry of Finance.

Tag: FIN_te_11

Reduced CO_2-Tax Rate for Combined Heat and Power Production (data for 2011-)

From 2011, a 50% CO_2-tax reduction is applied to all light-fuel-oil-, biofuel-oil-, heavy-fuel-oil-, coal- or natural-gas-fired combined heat and power (CHP) production.

Annual payments are allocated to coal, natural gas, light and heavy fuel oils by the Ministry of Finance. The share of payments pertaining to light fuel oil has been excluded from reporting as it accounts for less than 0.5% of the total.

Sources: Act on Excise Duty on Electricity and Certain Fuels (1260/1996), Energy Taxation in Finland (2012), Ministry of Finance, VATT (2011).

Tag: FIN_te_12

Energy-Tax Exemption for LPG (data for 2010-)

The use of LPG is exempted from the energy tax that is normally levied on all other energy products.

Sources: Act on Excise Duty on Electricity and Certain Fuels (1260/1996), Energy Taxation in Finland (2012), Ministry of Finance, VATT (2011).

Tag: FIN_te_13

Strategic-Stockpile-Fee Exemption for Peat (no data available)

Users of peat are exempt from the strategic-stockpile fee payments. Estimates for this measure are unavailable as it is impossible to estimate them.

Sources: Act on Excise Duty on Electricity and Certain Fuels (1260/1996), Energy Taxation in Finland (2012), Ministry of Finance.

Energy-Tax Exemption for Fuels Used in Vessel Traffic (data for 2003-)

The domestic use of fuels in commercial vessels (i.e. other than private leisure boating) is exempt from the energy tax that is normally levied on all energy products.

We allocate the annual amounts reported in the tax-expenditure reports to different fuels on the basis of the IEA's Energy Balances for the domestic navigation and fishing sectors. Only those payments that pertain to light and heavy fuel oils are considered.

Sources: Act on Excise Duty on Liquid Fuels (1472/1994), Energy Taxation in Finland (2012), Finnish Customs (2011).

Tag: FIN_te_14

General Services Support Estimate

Peat-Storage-Support Coverage (data for 2008 and 2009)

In 2008 and 2009 a monthly fee worth EUR 0.03 per MWh was paid to peat producers by the National Emergency Supply Agency to cover the costs of non-commercial stockpiling part of the peat harvested in a given year.

Sources: Act on Peat Storage (321/2007), NESA (2011).

Tag: FIN_dt_03

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Table 10.1. Summary of fossil-fuel support to coal – Finland

(Millions of EUR, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Producer support								
Support to unit returns								
Feed-in-tariff for peat-based condensing power production	Central	n.a.	n.a.	1	0.2	3	1	n.a.
Electricity production subsidy for peat used in small CHP plants	Central	1	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Consumer support								
Reduced CO_2 tax for combined heat and power production	Central	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	29
Reduced energy-tax rate for coal used in heating	Central	6	7	7	13	13	13	n.a.
Peat storage support coverage	Central	n.a.	n.a.	n.a.	3	0.2	0.2	0.2
Reduced energy-tax rate on peat used in heating	Central	..	..	..	..	..	109	126
Energy tax refund for energy-intensive enterprises	Central	1	1	0.3	0.2	0.1	0.2	2

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was kindly provided by the Ministry of Finance.

Table 10.2. Summary of fossil-fuel support to petroleum - Finland

(Millions of EUR, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Consumer support								
Energy tax rebates for certain fuels used in agriculture	Central	7	8	9	10	13	14	30
Reduced energy-tax rate on diesel used in transport	Central	819	869	899	908	883	870	969
Reduced energy-tax rate for heavy fuel oil used in heating	Central	15	18	14	26	20	21	n.a.
Energy tax refund for energy-intensive enterprises	Central	0.5	0.4	0.2	0.2	0.1	0.2	2
Reduced CO_2-tax for combined heat and power production	Central	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	1
Energy tax exemption for LPG	Central	..	..	..	..	..	6	10
Reduced energy tax for heavy and light fuel oils used in greenhouses	Central	2	2	2	1	2	2	4
Energy tax exemption for fuels used in vessel traffic	Central	39	34	38	39	24	26	43
Reduced energy-tax rate for light fuel oil used in mobile machinery	Central	..	..	..	535	465	500	470
Reduced energy tax rate for fuels used in private-leisure flights	Central	n.a.	n.a.	n.a.	2	1	1	0.5

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was kindly provided by the Ministry of Finance.

Table 10.3. Summary of fossil-fuel support to natural gas - Finland

(Millions of EUR, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Consumer support								
Energy-tax refund for energy-intensive enterprises	Central	3	2	1	1	1	1	5
Reduced CO_2 tax for combined heat and power production	Central	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	27
Reduced energy-tax rate for natural gas used in heating	Central	..	..	..	129	117	126	75

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was kindly provided by the Ministry of Finance.

Chapter 11.

FRANCE

This chapter identifies, documents, and provides estimates of the various budgetary transfers and tax expenditures that relate to the production or use of fossil fuels in France. An overview of the country's energy economy is first given to place the measures listed into context. A data-documentation section then describes those measures in a systematic way. Whenever possible, the description details a measure's formal beneficiary, its eligibility criteria and functioning, and the fuels whose production or use stand to benefit from the measure. The chapter ends with a set of tables that provide, subject to availability, quantitative information and estimates for the various measures listed.

Energy resources and market structure

France has very limited fossil-energy resources and imports most of its oil and natural gas and all of its coal. Since even before the oil crises of the 1970s, France has pursued a policy of developing its nuclear energy industry to reduce its dependence on fossil energy imports, though almost all of the uranium needed to fuel its nuclear power plants is imported. In 2009, nuclear power accounted for more than three-quarters of France's electricity generation and 41% of its total primary energy supply. Oil accounts for 30% of energy use, having dropped steadily from nearly two-thirds in the 1970s. Natural gas accounts for 16% and hydro-electric power and other renewable energy sources (including municipal waste) for most of the rest. Treating nuclear power as domestic supply, indigenous production meets just over half of the country's energy use.

Historically, France has had a strong tradition of state involvement in the energy sector. In recent years, however, government ownership of energy companies has diminished somewhat. The oil industry is now entirely in private hands. The privatisation of the previously partially state-owned international oil company, Total, which merged with the former state-owned company Elf in 2000, was completed in the late 1990s. A number of other private companies, many of them foreign-based multinationals, are active in the French refining, distribution and marketing businesses.

The state retains substantial ownership stakes in electricity and natural gas. In November 2004, the two incumbent monopoly companies, Electricité de France (EDF) and Gaz de France, both of which were 100% state-owned, became limited companies with a board of directors. The next year, minority stakes in the two companies were sold to private investors. The state retains an 85% stake in EDF, and holds a 36% stake in GDF Suez as a consequence of the merger of Gaz de France with Suez in 2008. AREVA, the primary manufacturer of nuclear-power systems in France, remains majority-owned by the state (primarily though the *Commissariat à l'énergie atomique et aux énergies alternatives*) although private investors can now hold up to 4% of the capital. The government has created Pluri-annual Investment Plans to evaluate investment choices and to ensure that they align with objectives for desired future developments in the energy sector.

France has liberalised its electricity and gas sectors progressively to comply with EU directives, eliminating the monopoly rights of the two state companies. Transmission and distribution of natural gas and electricity have been unbundled; negotiated third-party access to underground storage of natural gas introduced; and a regulator, the *Commission de Regulation de l'Énergie* (CRE), and a mediator to protect electricity and gas consumers, were established.

Despite recent moves to liberalise the sector, EDF still accounts for the bulk of power generation. The French transmission network is 100% owned and operated by the French transmission system operator, RTE, or *Gestionnaire du réseau*, a subsidiary of EDF. The distribution network is owned by local authorities (*collectivités territoriales*). RTE is mandated to ensure connection and non-discriminatory access to transmission networks to third parties. Eligibility to choose supplier was first offered in France in 2000 to the largest consumers. Since July 2007, all electricity consumers in France are eligible to choose their supplier. However, EDF still has a dominant market position, and consumer switching rates are very low: as of March 2012, 94% of residential customers and 93% of non-residential customers (by number of sites supplied) were still supplied by EDF.

GDF Suez is similarly still the dominant player in the natural-gas sector, importing the bulk of the country's gas needs and operating, through GRTgaz, a 100% subsidiary, the national transmission system which covers most of the country. In the south-west, there is a separate network operated by Total Infrastructures Gaz France, which is a 100% subsidiary of

Total. GDF Suez also owns the majority of the local distribution networks; the remainder are owned by local authorities. GDF Suez and the other incumbent gas suppliers have retained most of the retail market (90% of residential customers and 79% of non-residential customers as of March 2012).

Prices, taxes and support mechanisms

The prices of all forms of energy other than electricity and natural gas are set freely by the market. Electricity and gas customers have a choice of supply from incumbent suppliers at regulated tariffs or from alternative suppliers at market rates. Social tariffs for electricity and natural gas are available to residential customers on low incomes. The social tariff for electricity only applies to rates offered by EDF and local, non-nationalised distributors; the social rate for gas is to be applied by all natural-gas suppliers (including new entrants). The CRE is responsible for proposing changes to regulated tariffs, but the government still has the final say over whether to approve or refuse the change (but not modify it). The CRE is also responsible for regulating tariffs for access by third parties to gas and electricity infrastructure.

Energy products and services are subject to VAT at the rate of 19.6%, with the exception of the fixed component of contracts for the distributed supply of electricity, natural gas and liquefied petroleum gas, for which the rate is 5.5%. Excise duties are payable on all sales of oil products (at varying rates according to the fuel, the sector, and the *région*) and a domestic consumption tax is levied on deliveries of coal and natural gas to non-residential consumers. Biofuels benefit, under certain conditions, from a lower rate of excise duty than conventional petroleum transport fuels. The General Tax on Polluting Activities, established in 1999, was extended in 2005 to distributors of automotive fuels that do not meet annual biofuels targets. At the national level, electricity tariffs include a tax called CSPE (*contribution au service public de l'électricité*), which aims to offset the additional costs resulting from electricity production by co-generation, contract purchases of renewable energy, charges resulting from the application of uniform tariffs in areas that are not interconnected, and social provisions. In recent years, the revenues raised by the CSPE tax have not been sufficient to fully offset the additional costs.

There are a number of different mechanisms and arrangements for directing support at some specific fuels and categories of end user. These mainly take the form of partial or full exemptions or refunds on VAT or excise duties on oil products. Examples include a reduced rate of excise duty on fuel used by taxis and specific types of machinery used in farming and construction, and a tax exemption on fuel used by certain boats. In addition, grants are available under certain conditions for upgrading service stations in remote areas. Other incentives include total or partial exemptions on car registration fees and company car taxes for LPG-fuelled vehicles. In most cases, the total annual monetary value of the different forms of support is modest, though it can still represent a substantial transfer from the perspective of the recipient.

Data documentation

General notes

The fiscal year in France coincides with the calendar year. Following OECD convention, amounts prior to 1999 are expressed as 'euro-fixed series', meaning that we applied the fixed EMU conversion rate (1 EUR = 6.559 FRF) to data initially expressed in the French Franc (FRF).

Producer Support Estimate

France used to support production of coal through *Charbonnages de France* (CdF), a state-owned enterprise. Support was at the time deemed necessary owing to the low competitiveness of the French coal industry. By 1990, production had already ceased in the North of the country. An agreement between trade unions and CdF, the *Pacte Charbonnier*, was therefore concluded in October 1994 to organise the progressive dismantling of the remaining production sites. The agreement provided for the end of all production by 2005. This was to be achieved through a series of measures meant to address the social costs associated with mine closures. One such measure, the *congé charbonnier de fin de carrier,* allowed coal miners to stop working at the age of 45 while remaining entitled to payments worth 80% of their previous wages.

The last remaining mine was closed in 2004, ahead of schedule. CdF was liquidated in 2007 and its debt transferred to the French state, along with the responsibility for all inherited social and environmental liabilities. France does not produce coal any more.

Residual Financial Charges of CdF (data for 1990-1996)

This measure provided Charbonnages de France (CdF) with annual payments aimed at relieving the company from some residual financial charges it had inherited from the past. Not much information is available regarding this item but we put it under the 'capital' incidence category as suggested by the measure's title.

Sources: Cour des Comptes (2000), Charbonnages de France (various years), Sénat (various years).

Tag: FRA_dt_04

General Research & Development Grant CdF (data for 1990-1996)

Charbonnages de France (CdF) used to receive annual Research & Development grants whose object remains unclear given the lack of details found in official documents. The fact that the grants were, however, firm-specific directs them to the PSE category rather than the GSSE category.

Sources: Cour des Comptes (2000), Charbonnages de France (various years), Sénat (various years).

Tag: FRA_dt_05

Direct State Aid to CdF (data for 1990-1996)

Charbonnages de France (CdF) had been receiving income support from the French government since the aftermath of the Second World War before the company was eventually liquidated in 2007. This item comprises direct aid that was not earmarked for any specific purpose. Aid stopped in the late 1990s after which it was replaced by annual capital contributions.

Sources: Cour des Comptes (2000), Charbonnages de France (various years), Sénat (various years).

Tag: FRA_dt_06

Interest Payments on 1997-99 Debt of CdF (data for 2000-2007)

This item comprises annual payments made to Charbonnages de France (CdF) in order to cover the interest payments on debt the company contracted in the years 1997 to 1999. Reporting ends with CdF's liquidation in 2007.

Sources: Cour des Comptes (2000), Charbonnages de France (various years), Sénat (various years).

Tag: FRA_dt_07

Capital Contribution to CdF (data for 1997-2007)

Following the termination of direct state aid to Charbonnages de France (CdF) in 1997, it was then decided to provide the company with annual capital grants meant to cover for insufficient equity. Payments went on until CdF's liquidation in 2007.

This item is put under the "income" incidence category because it does not require additional investment on the part of the company. As such, its actual effect is more to support income rather than to finance additional capital investment.

Sources: Cour des Comptes (2000), Charbonnages de France (various years), Sénat (various years).

Tag: FRA_dt_08

Partial Tax Deduction for Exploration Costs (data for 1999-2010)

This tax provision was known as the *Provisions pour reconstitution des gisements d'hydrocarbures* (Provisions for reconstituting oil and gas fields) before it was phased out in 2010. It allowed oil and gas companies operating in France to deduct a fixed percentage of their revenues from their income tax base, provided this amount was later reinvested in exploration. Given that France does not possess abundant petroleum and natural-gas resources, the amounts reported for this provision were fairly small. Recipients were very few, ranging between five and ten per year.

We use production data from the IEA's *Energy Balances* to allocate the annual amounts reported in budget documents to oil and natural-gas extraction.

Sources: Ministère de l'Économie et des Finances (various years), IEA.

Tag: FRA_te_02

Excise Tax Exemption for Natural-Gas Producers (data for 2007-)

Natural-gas extraction and production activities in France are exempted from paying any excise tax on the energy products they use as process energy (i.e. not as feedstock). The scale of oil and natural-gas production being small in France, the reported amounts do not add up to significant annual tax expenditures, but we nonetheless include the concession for the sake of completeness. Moreover, the very small number of beneficiaries makes transfers per recipient quite significant (two recipients only in 2010).

Sources: Ministère de l'Économie et des Finances (various years).

Tag: FRA_te_11

Excise Tax Exemption for Refiners (data for 1999-)

The petroleum products and natural gas used by refiners as process-energy (i.e. not as feedstock) are exempted from the excise tax that is normally levied on most sales of such products in France. This measure dates back to 1956 and is described as a normal feature of France's tax code in budget documents.

We allocate the annual amounts reported in budget documents to LPG, natural gas, petroleum coke, refinery gas, heavy fuel oil, and other non-specified oil products on the basis of the IEA's Energy Balances for the oil refining sector.

Sources: Ministère de l'Économie et des Finances (various years), IEA.

Tag: FRA_te_24

VAT Exemption for Offshore Drilling Equipment (no data available)

This measure was introduced in 1971 to encourage the exploration for and development of natural resources located on France's continental shelf. It exempted from the regular value-added tax (19.6%) some purchases of equipment by exploration and development companies before it was abolished at the end of 2011. Starting on 1 January 2012, purchases of equipment by oil and gas companies operating on France's continental shelf are now subject to the regular rate of value-added tax.

No estimates of the revenue foregone due to this measure are available.

Sources: Ministère de l'Économie et des Finances (various years).

Consumer Support Estimate

Prime à la Cuve (data for 2005-2009)

This programme was created in 2005 to provide low-income households with grants to help them pay their heating bills. Only those households whose income is not taxable under France's personal income tax were eligible for the subsidy. Following submission of their heating-fuel bills, recipients would receive a lump-sum transfer ranging between EUR 75 and EUR 200. The measure being only transient, it was phased-out in 2009 after the last round of payments was made.

No payments were made in the year 2007 so that a zero value for that particular year is reported.

Sources: DG Trésor.

Tag: FRA_dt_01

Aid to Gas Stations (data for 1999-)

This programme provides certain gas stations in remote areas with annual subsidies aimed at upgrading infrastructure and helping small, declining businesses. It is managed by an *ad hoc* committee—the *Comité Professionnel de la Distribution des Carburants* (Professional Committee for Fuel Retailing)—that was set up in March 1991 to oversee applications and payments.

The measure was allocated to the CSE as it most directly benefits consumers rather than producers. Data could not be found for the years prior to 1999. We allocate the annual amounts reported in budget documents to the different fuels sold in French gas stations (i.e. gasoline and diesel fuel since the shares for other fuels are negligible) on the basis of the IEA's Energy Balances for the road-transport sector.

Sources: Ministère de l'Économie et des Finances (various years), IEA.

Tag: FRA_dt_09

Overseas VAT Exemption for Petroleum Products (data for 1999-)

Petroleum products consumed in certain French overseas *départements* (Guadeloupe, Guyane, Martinique, and La Réunion) have been exempted since 1951 from the VAT that is normally levied on most sales of such products. This concession is meant to help those territories that are both geographically and economically disadvantaged.

Because this measure applies to a few other goods in addition to petroleum products (e.g. rice), the reported tax expenditures may overestimate the part of the exemption that effectively benefits fossil fuels. We allocate the annual amounts reported in budget documents to gasoline, fuel oil, kerosene-type jet fuel, and diesel fuel on the basis of data from the *Direction Générale des Douanes et Droits Indirects* on annual imports of petroleum products into French overseas *départements*. Shares for petroleum products other than the four mentioned above (e.g. naphtha, aviation gasoline, paraffin waxes, white spirit) are negligible and are therefore omitted.

Sources: Ministère de l'Économie et des Finances (various years), Direction Générale des Douanes et Droits Indirects.

Tag: FRA_te_03

VAT Reduction for Petroleum Products in Corsica (data for 2007-)

A reduced rate of VAT (13%) applies to petroleum products consumed in Corsica, whereas most other goods and services remain subject to the standard continental rate of 19.6%.

Data prior to 2007 are not available.

Sources: Direction Générale des Douanes et Droits Indirects.

Tag: FRA_te_04

Reduced Rate of Excise for Taxi Drivers (data for 1999-)

Since 1982, taxi drivers in France have benefitted from a reduced rate of excise tax on their purchases of gasoline and diesel fuel. The concession takes the form of an annual, capped refund based on the amounts of fuel effectively consumed.

We allocate the annual amounts reported in budget documents to gasoline and diesel fuel on the basis of the IEA's Energy Balances for the road transport sector.

Sources: Ministère de l'Économie et des Finances (various years), IEA.

Tag: FRA_te_05

Excise Tax Exemption for Certain Merchants (data for 1999-2008)

This tax provision applied to those merchants that operate from a fixed selling point (i.e. that are not itinerant) located in a town counting less than 3 000 inhabitants, while also engaging in small-scale deliveries. The concession was capped at 1 500 litres a year and was phased out at the end of 2008 following a request to this effect by the European Commission.

We allocate the annual amounts reported in budget documents to gasoline and diesel fuel on the basis of the IEA's Energy Balances for the road transport sector.

Sources: Ministère de l'Économie et des Finances (various years), IEA.

Tag: FRA_te_06

Excise Tax Exemption for Co-generation (data for 1999-)

This measure exempts both mineral oils and natural gas burnt for the purpose of co-generation from the excise tax that is normally levied on fuel consumption in France. It applies only to those plants that were built before 31 December 2007, and for no more than five years. The latter period can, however, be extended to ten years in the case of certain plants using heavy fuel oil and flue-gas desulfurization equipment.

We allocate the annual amounts reported in budget documents to heavy fuel oil, refinery gas, and natural gas on the basis of the IEA's Energy Balances for the combined heat-and-power generation sector.

Sources: Ministère de l'Économie et des Finances (various years), IEA.

Tag*:* FRA_te_07

Excise Tax Exemption for the Ministry of Defence (data for 2006-2009)

The French Ministry of Defence was until recently exempted from paying the excise tax normally levied on most sales of petroleum products in France. The measure proved short-lived, since it was introduced in 2006 and phased out in 2009.

Given that this measure applied for the most part to heavy ground-vehicles such as tanks and trucks, we allocate it entirely to diesel fuel.

Sources: Ministère de l'Économie et des Finances (various years).

Tag*:* FRA_te_08

Excise Tax Exemption for Local Administrations (data for 2007)

This one-off measure exempted some local and regional administrations from paying the excise tax on natural gas that normally applies in such cases.

Sources: Ministère de l'Économie et des Finances (various years).

Tag: FRA_te_09

Excise Tax Exemption for Biomass Producers (data for 2007-)

This measure is fairly small and exempts some biomass producers (e.g. producers of alfalfa) from paying the regular excise tax on coal products, which are sometimes used for dehydrating biomass. Eligible biomass producers are those for whom energy purchases represent at least 3% of their annual revenues.

We allocate this measure entirely to bituminous coal.

Sources: Ministère de l'Économie et des Finances (various years).

Tag: FRA_te_10

Excise Tax Exemption for Households (data for 2007-)

This measure exempts households from the excise tax that is normally levied on purchases of natural gas in France. Budget documents indicate that this tax concession was introduced in 2007 to remove distortions in the tax treatment of those households that are directly provided with natural gas and those that receive reticulated heat.

Sources: Ministère de l'Économie et des Finances (various years).

Tag: FRA_te_12

Reduced Rate for Fuel Oil Used as Diesel Fuel (data for 1999-)

This concession dates back to 1970 and allows users in the farming and construction sectors to benefit from the lower rate of excise tax that applies to heating oil when using the latter in diesel engines. Those two types of fuel are very close and can sometimes be used interchangeably.

Since 1 October 2011, the use of fuel oil as propellant is no longer allowed in farming and other off-road activities. Instead, there is now a specific off-road diesel fuel that must be used in lieu of heating oil. This off-road diesel fuel still attracts a reduced rate of fuel tax of EUR 7.20 per hectolitre (instead of EUR 5.66 per hectolitre for heating oil).

Sources: Ministère de l'Économie et des Finances (various years).

Tag*:* FRA_te_13

Reduced Rate for Natural Gas Used as Fuel (data for 2007-)

A 100% reduction in the rate of excise tax applies to natural gas when used as a transport fuel. Budget documents indicate that the concession was introduced in 2007.

Sources: Ministère de l'Économie et des Finances (various years).

Tag: FRA_te_15

Reduced Rate of Excise for LPG (data for 1999-)

The use of liquefied petroleum gas in France has attracted a reduced rate of excise tax since 1996. Budget documents indicate that this tax reduction aims to promote the use of LPG and to contribute to the improvement of air quality.

A further reduction in the rate of excise tax applicable to liquefied butane and propane used as fuels (EUR 4.68 per 100 kg instead of EUR 10.76 per 100 kg) is also available to certain specific off-road users.

Sources: Ministère de l'Économie et des Finances (various years).

Tag*:* FRA_te_16

Reduced Rate for Stationary Engines (data for 2007-)

Users of certain machines that are equipped with diesel-fired stationary engines are not subject to the regular excise tax on diesel fuel. The sectors most concerned by this measure are agriculture and construction.

Sources: Ministère de l'Économie et des Finances (various years).

Tag: FRA_te_17

Reduced Rate for Gasoline in Corsica (data for 1999-)

The use of gasoline in Corsica is subject to a reduced rate of excise tax. This reduction applies on top of an existing arrangement that allows regional authorities (*Conseils Régionaux* and the *Assemblée de Corse*) to vary the rate of excise within agreed limits. Only the former provision is reported here in order to be consistent with federal countries that apply varying rates of excise tax among sub-national units.

Sources: Ministère de l'Économie et des Finances (various years).

Tag*:* FRA_te_18

Refund for Public Transportation and Garbage Collection Using LPG or CNG (data for 1999-2010)

This measure was introduced in 1997 to provide public transportation and garbage collection with a capped refund (40 000 litres per year and vehicle) of excise tax for compressed natural gas and liquefied petroleum gas. It was phased out in 2008, following a request to this effect by the European Commission.

We allocate the annual amounts reported in budget documents to natural gas and LPG on the basis of the IEA's Energy Balances for the road-transport sector.

Sources: Ministère de l'Économie et des Finances (various years), IEA.

Tag*:* FRA_te_19

Refund for Diesel Used in Road Transport (data for 1999-)

The excise tax levied on diesel fuel used in road freight vehicles weighing at least 7.5 tonnes is, under this tax provision, partly refunded to targeted users. This concession was introduced in 1999 and is meant to support France's road freight sector. Freight companies registered in other EU countries can benefit from this measure provided they are able to attest having purchased diesel fuel in France for use in eligible vehicles.

Sources: Ministère de l'Économie et des Finances (various years).

Tag*:* FRA_te_20

Refund for Diesel Used in Public Transportation (data for 2001-)

This measure gives certain providers of public road transportation a partial refund of the excise tax that is normally levied on most sales of diesel fuel in France. Budget documents indicate that this concession was introduced in 2001 to promote public transportation.

Sources: Ministère de l'Économie et des Finances (various years).

Tag*:* FRA_te_21

Refund for Fuel Oil Used in Agriculture (data for 2006-2011)

Farmers have been attracting since 2004 partial refunds of the excise tax that is normally levied on most sales of fuel oil in France. This adds to the fact that fuel oil is often used as diesel fuel in agriculture, and that, as such, farmers already benefit from a lower rate of excise tax than would otherwise be the case (see "Reduced Rate for Fuel Oil Used as Diesel Fuel" above). The present measure explicitly aims at helping the agricultural sector cope with high energy prices. Although refunds were initially meant to be both discretionary and transitory, they have been reinstated every year since their first inception in 2004, and were again voted in 2012.

Estimates for the years 2004 and 2005 are not available.

Sources: Ministère de l'Économie et des Finances (various years).

Tag*:* FRA_te_22

Excise Tax Exemption for Certain Boats (data for 1999-)

This tax concession exempts the fuel used in certain boats from the excise tax that normally applies to most sales of petroleum products in France. The boats concerned by the exemption are those that are engaged in maritime navigation (including fishing) while

not being used for private, leisure purposes. This measure seems to date back to 1928 and is described as a normal feature of France's tax code in budget documents.

We allocate the annual amounts reported in budget documents to gasoline, heavy fuel oil, and diesel fuel on the basis of the IEA's Energy Balances for the domestic-navigation sector.

Sources: Ministère de l'Économie et des Finances (various years), IEA.

Tag*:* FRA_te_23

Excise Tax Exemption for Domestic Aviation (data for 2000-)

Domestic aviation in France is exempt from the excise tax that is normally levied on most sales of petroleum products. This provision does not apply to aircrafts used for private, leisure purposes, nor does it include international flights. The measure seems to date as far back as 1928 and is described as a normal feature of France's tax code in budget documents.

Although the data we report do not include flights between mainland France and its overseas *départements* (*DOM*), estimates from the French *Commissariat Général au Développement Durable* suggest that their inclusion would increase the value of annual revenue foregone from about EUR 300 million to about EUR 550 million.

We allocate this measure entirely to kerosene-type jet fuel.

Sources: Commissariat Général au Développement Durable based on data from CITEPA.

Tag: FRA_te_25

Excise Tax Exemption for Fluvial Navigation (data for 2011-)

This measure was introduced in 2011 to exempt the transportation of freight on internal waterways from the excise tax that is normally levied on most purchases of petroleum products in France.

We allocate this measure entirely to diesel fuel and light fuel oil.

Sources: Ministère de l'Économie et des Finances (various years), CGDD (2012).

Tag: FRA_te_26

General Services Support Estimate

Benefits to Former Miners CdF (data for 1990-2004)

Charbonnages de France (CdF) used to receive annual grants meant to help the company pay for benefits provided to former miners. The latter mostly consisted of benefits related to housing and heating. Responsibility over their payment was transferred to the *Agence Nationale pour la Garantie des Droits des Mineurs* (ANGDM) following the closure of the last coal mine in 2004. Given that CdF was the sole producer of hard coal in France, subsequent payments by the ANGDM are not included in the present inventory.

Sources: Cour des Comptes (2000), Charbonnages de France (various years), Sénat (various years).

Tag*:* FRA_dt_02

Management of Old Mining Sites CdF (data for 1990-2000)

This item consists of annual grants to Charbonnages de France (CdF) that were meant to finance the company's management and rehabilitation of its old mining sites.

Payments are allocated to the GSSE as they do not increase current production or consumption of hard coal.

Sources: Cour des Comptes (2000), Charbonnages de France (various years), Sénat (various years).

Tag: FRA_dt_03

Sources

Policies or transfers

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Table 11.1. Summary of fossil-fuel support to coal - France

(Millions of EUR, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Producer support								
Income support								
Capital contribution to CdF	Central	940	2880	60	n.a.	n.a.	n.a.	n.a.
Support for capital formation								
Interest payments on 1997-99 debt of CdF	Central	32	32	32	n.a.	n.a.	n.a.	n.a.
Consumer support								
Excise tax exemption for biomass producers	Central	n.a.	n.a.	0	0	3	3	3

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances and on other data as specified in the chapter for France.

Table 11.2. Summary of fossil-fuel support to petroleum - France

(Millions of EUR, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Producer support								
Income support								
Partial tax deduction for exploration costs	Central	3	3	11	0	6	0	n.a.
Support for intermediate inputs								
Excise tax exemption for refiners	Central	106	94	95	94	100	100	100
Consumer support								
Reduced rate of excise for LPG	Central	6	6	9	45	47	53	53
Reduced rate of excise for taxi drivers	Central	80	82	90	17	15	21	21
Refund for diesel used in road transport	Central	240	196	217	295	288	292	300
Refund for public transportation and garbage collection using LPG or CNG	Central	2	1	1	1	0	1	n.a.
Refund for diesel used in public transportation	Central	17	21	21	26	26	30	30
Reduced rate for gasoline in Corsica	Central	1	1	1	1	1	1	1
VAT reduction for petroleum products in Corsica	Central	..	..	13	14	14	14	14
Excise tax exemption for the Ministry of Defense	Central	n.a.	36	30	30	10	n.a.	n.a.
Excise tax exemption for domestic aviation	Central	315	314	314	315	300	300	300
Excise tax exemption for cogeneration	Central	5	0	0	1	1	1	1
Prime à la Cuve	Central	28	36	0	125	191	n.a.	n.a.
Overseas VAT exemption for petroleum products	Central	118	79	79	79	64	156	157
Reduced rate for fuel oil used as diesel fuel	Central	1500	1470	1100	1100	1100	1000	1000
Refund for fuel oil used in agriculture	Central	..	143	85	165	101	134	140

Table 11.2. Summary of fossil-fuel support to petroleum – France (*continued*)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Consumer support								
Excise tax exemption for fluvial navigation	Central	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	3
Reduced rate for stationary engines	Central	n.a.	n.a.	0	0	0	0	3
Aid to gas stations	Central	8	8	8	8	6	8	5
Excise tax exemption for certain boats	Central	200	142	110	101	98	200	350
Excise tax exemption for certain merchants	Central	5	4	4	3	0	0	n.a.

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances and on other data as specified in the chapter for France.

Table 11.3. Summary of fossil-fuel support to natural gas - France

(Millions of EUR, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Producer support								
Income support								
Partial tax deduction for exploration costs	Central	2	2	9	0	5	0	n.a.
Support for intermediate inputs								
Excise tax exemption for natural-gas producers	Central	n.a.	n.a.	0	1	2	2	2
Excise tax exemption for refiners	Central	4	4	6	11	5	5	5
Consumer support								
Reduced rate for natural gas used as fuel	Central	n.a.	n.a.	0	3	9	4	4
Excise tax exemption for households	Central	n.a.	n.a.	0	200	237	245	253
Excise tax exemption for local administrations	Central	n.a.	n.a.	n.a.	37	n.a.	n.a.	n.a.
Excise tax exemption for cogeneration	Central	30	0	0	9	9	9	9
Refund for public transportation and garbage collection using LPG or CNG	Central	0.5	1	1	1	0	0.4	n.a.

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances and on other data as specified in the chapter for France.

Chapter 12.

GERMANY

This chapter identifies, documents, and provides estimates of the various budgetary transfers and tax expenditures that relate to the production or use of fossil fuels in Germany. An overview of the country's energy economy is first given to place the measures listed into context. A data-documentation section then describes those measures in a systematic way. Whenever possible, the description details a measure's formal beneficiary, its eligibility criteria and functioning, and the fuels whose production or use stand to benefit from the measure. The chapter ends with a set of tables that provide, subject to availability, quantitative information and estimates for the various measures listed.

Energy resources and market structure

Germany's proven reserves of oil and natural gas are modest and have been dwindling in recent years after decades of production. In 2010, Germany relied on imports of over two thirds of its overall energy needs. Recent technological advances, however, hold out the prospect of new discoveries of unconventional gas, which could lead to a revival of production. In 2010, indigenous production met almost 60% of the country's coal use, about 12% of its natural gas use and less than 3% of its crude-oil use. Hard-coal mining began in earnest in the 18th century and the country still produces hard coal, meeting almost one quarter of its total hard-coal needs. But hard-coal mining is uneconomic and the remaining mines will close by 2018 as subsidies are phased out. Lignite is produced from opencast mines that do not attract direct support measures. Germany has a relatively balanced mix of fuels in its primary energy mix. In 2010, oil made up the largest share of primary supply, at about one-third, followed by natural gas (24%), hard coal (12%), lignite (11%) and nuclear power (11%). Compared with other OECD countries, Germany has a very high share of renewables in its energy mix, accounting for about 9% of primary supply, with more than 80%-coming from combustible renewables and waste. Over 17% of German electricity in 2010 was generated from renewable energy and waste. Currently this figure stands at above 20%.

The German energy industry has traditionally been mainly privately owned, though there are still a large number of small electricity and gas distribution companies that are either wholly or partially owned by municipalities. The oil industry is fully liberalised, with no government ownership. Despite the takeovers of DEA Mineralöl AG by Shell in Germany and Veba Oel AG by German BP in 2002, which created two dominant players, Germany's oil-refining and retail sectors retain a relatively large number of operators.

All production of hard coal is carried out by RAG Deutsche Steinkohle AG (DSK AG), a wholly owned subsidiary of Ruhrkohle AG (RAG). In 2007, the shareholders, including E.ON and RWE, transferred their shares for a symbolic EUR 1 to the RAG Stiftung (foundation). In 2011, DSK AG operated five deep coal mines at sites in the Ruhr and Saar regions and in Ibbenbüren in North Rhine-Westphalia. As production costs remain well above revenues, the company gets substantial government subsidies. Lignite is produced from opencast mines, primarily by five companies, including Vattenfall and RWE.

Germany has implemented market reforms in the electricity and gas sectors in line with EU directives. Grid operators are now subject to regulation by the newly established Federal Network Agency (*Bundesnetzagentur*, BNetzA) and by regulatory authorities in the individual German states (*Länder*), some of whom have elected to transfer these powers to the BNetzA. The Federal Cartel Office (*Bundeskartellamt*) is responsible for approving mergers and monitoring anti-competitive behaviour. Despite these reforms, the incumbent operators in the wholesale and retail markets have retained large market shares. E.ON and RWE are among the dominant players in both the natural-gas and the electricity markets.

A central pillar of German energy policy is the phase-out of nuclear power, which was decided by the government in 1999. A 2001 agreement between the German government and energy utilities, as well as resulting amendments to the Nuclear Power Act in 2002, sets out the terms of the planned phase-out. Changes to the Atomic Energy Act enshrined the nuclear phase-out in German law. The legislation sets a time limit for commercial electricity generation for each existing power station based on an average 32-year lifetime. The nuclear law was changed in 2011 as a result of the Fukushima nuclear power plant accident in Japan. All nuclear-power stations in Germany will now be placed out of service by 2022.

Prices, taxes and support mechanisms

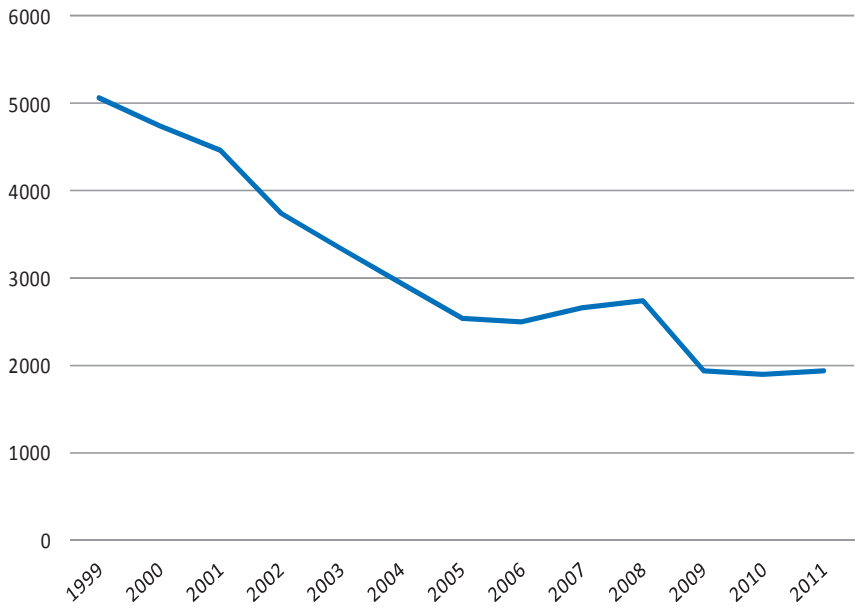
The prices of all forms of energy are set freely by the market, as required by EU competition law. Electricity and natural gas supply is regulated by the BNetzA. In principle, suppliers are allowed to pass through all costs, including the wholesale cost of buying the gas and network-related costs and charges.

All forms of energy are subject to value-added tax at 19%. Excise tax and a special tax to fund the emergency storage fund (EBV) are applied (at different rates) to oil products. An ecological tax, introduced in 1999, is levied on oil products, natural gas and electricity. The eco-tax is levied at different rates according to the fuel and the customer category (households pay a higher charge than industry). Households were exempt from eco-tax payments on coal they use for heating until the end of 2009. The "eco-tax" refers in this context only to the tax increase since April 1999, in addition to the mineral-oil tax from before that time. One of the reasons put forward for introducing the eco-tax in Germany was that the increase in the costs of energy products would have a steering effect, encouraging the efficient use of natural resources.

By far the most important subsidy in Germany is the financial assistance to the hard-coal industry. The cost of producing coal in Germany is far higher than the price of imported coal; the difference is made up by a subsidy to RAG. RAG also receives support for closing down its mines. The cost of these combined subsidies stood at EUR 1.9 billion in 2011, even though both production and support measures had been declining for many years (as reflected in Figure 12.1). In mid-2007 the federal government, the governments of the states with mines, the unions and RAG agreed on a detailed road map to end all subsidies in a socially acceptable manner by the end of 2018. As of 2013, coal production in Germany will be undertaken in three remaining active coal mines in North Rhine-Westphalia: Prospel-Haniel in Bottrop, Auguste Victoria in Marl, and Ibbenbürren on the border with Lower Saxony. Under the deal, production is being gradually scaled back, limited by the retirement dates of miners. Subsidies for production will continue to be paid jointly by the federal government and the coal-producing states until 2014, after which time the federal government will assume payment of all production subsidies. Subsidies for closing down mines will be paid jointly until 2018. Mining costs that remain after the closure of the pits will primarily be paid out of a fund, which will be filled with the proceeds of a public sale of the equity-investment assets of RAG, now directly owned by the RAG Stiftung. If financing by the foundation falls short, the states of North Rhine-Westphalia and Saarland will guarantee two-thirds of the costs, and the federal government one-third. In addition, another programme provides older coal miners with early retirement payments until they become eligible for regular pension payments. Funding is split between the federal government and the states that possess mines.

Figure 12.1. Total Producer Support Estimates for coal, Germany (1999-2011)

(Million EUR, nominal)



The main features of the tax code relating to energy consumption involve tax exemptions, reductions, rebates and (partial) refunds for particular fuels and sectors. These include an exemption from energy taxes normally applied to the use of electricity, coal, natural gas, and petroleum products enjoyed by energy companies that use energy for processing purposes; tax privileges on heating oil, natural gas and LPG for certain users in the agriculture, forestry and manufacturing sectors; tax relief on diesel used in agriculture; an energy-tax exemption on fuels used in power stations of more than 2 MW and in efficient co-generation plants, as well in commercial aviation and in barges carrying freight on inland waterways; reduced energy taxes on fuels used in public transport; and reduced rates of eco-tax on fuels used in energy-intensive processes and techniques, mainly in the steel and chemical industries to protect their competitiveness. Those tax exemptions do not reduce energy prices below world-market prices.

Data documentation

General notes

The fiscal year in Germany coincides with the calendar year. Following OECD convention, amounts prior to 1999 are expressed as "euro-fixed series," meaning that we applied the fixed EMU conversion rate (1 EUR = 1.956 DEM) to data initially expressed in the Deutsche Mark (DEM). In a few cases[1], the conversion into EUR was already made in official government documents.

Since Germany is a federal country, the data collection exercise was also conducted for those two German states (*Länder*) that are still producing coal, North Rhine-Westphalia (NW) and Saarland (SR), as they have been providing financial support to their coal mines. Also included are payments for the rehabilitation of Lignite Mining Sites in East Germany (see DEU_dt_13), which have been made by the federal government and the states of Saxony (SN), Brandenburg (BR), Saxony Anhalt (ST), and Thüringen (TH).

[1] This applies to the support measures for which the source is Landtag des Saarlandes (2005).

Federal payments can be found in the subsidy reports (Subventionsberichte) that the federal government publishes every year. Data in these subsidy reports date back to 1991. Payments by the government of North Rhine-Westphalia can be found in the budget reports (*Haushaltspläne*) that the Ministry of Finance of North Rhine-Westphalia publishes every year on its website. Data in these reports date back to 1998. Payments by the government of Saarland can be found in the budget reports that the Ministry of Finance of Saarland publishes every year on its website. While data in these reports date back to 2000, some of the programmes listed in the Inventory have not been reported in the budgetary reports of Saarland. There may be two reasons for exclusion of budget payments for certain programmes by Saarland. First, coal mining in Saarland accounted for only about 10% of the coal production in Germany in the period between 1958 and 2002. The payments thus may be very small. Second, the federal government exempted Saarland from most of its assumed support to the coal-mining sector.

Producer Support Estimate

Hard-coal mining in Germany has traditionally attracted support for geological, historical and political reasons. Since production of hard coal remains largely uneconomic, most mines are due to close by 2018 when subsidies to the industry are planned to be removed.

Over the years, production of hard coal has been scaled back through numerous government policies. In the 1990s, the industry underwent various capacity-adjustment plans. Funding for these programmes was usually provided jointly by the coal-mining Land and the federal government, with the former accounting for two-thirds of the total.

The industry also received substantial government aid to remain in operation. Hard-coal production was supported through a combination of debt relief schemes, mining-royalty exemptions, and reduced pension contributions for miners.

Germany follows European Commission regulations regarding state aid. The federal government does not provide subsidies to coal-mining under Article 5-3 (current production aid). In preparation for the closure of mines, most of the subsidies are now early-retirement schemes for coal workers.

RAG Debt Claims in North Rhine-Westphalia (data for 1991-1998)

This item (*Schuldbuchforderung der Ruhrkohle AG)* comprised annual payments made to *Ruhrkohle AG* (RAG) in order to cover part of its debt. RAG is Germany's biggest hard coal producer. Funding was split between the federal government and the government of North Rhine-Westphalia. The federal government committed to covering two thirds of the total debt of RAG, while the government of North Rhine-Westphalia committed to the remaining third of the payments.

Sources: Bundesministerium der Finanzen (various years), Finanzministerium des Landes Nordrhein-Westfalen (various years), Storchmann (2005).

Tag: DEU_dt_02

Adjustment Aid to EBV in North Rhine-Westphalia (data for 1991-1993)

This item (Zuschüsse an den Eschweiler Bergwerksverein zum Ausgleich von Belastungen infolge von Kapazitätsanpassungen und zur Stabilisierung des Unternehmes) comprised annual payments made to Eschweiler Bergwerksverein (EBV) in order to help the company adjust its production capacity. Funding was split between the federal government and the government of North Rhine-Westphalia, with the former accounting for two-thirds of the total.

Sources: Bundesministerium der Finanzen (various years), Finanzministerium des Landes Nordrhein-Westfalen (various years), Storchmann (2005).

Tag: DEU_dt_03

Adjustment Aid to RAG in North Rhine-Westphalia (data for 1989-1994)

This item (*Zuschüsse an die Ruhrkohle AG zum Ausgleich von Belastungen infolge von Kapazitätsanpassungen*) comprised annual payments made to Ruhrkohle AG (RAG) in order to help the company adjust its production capacity. Funding was provided in six equal instalments in the period between 1989 and 1994; it was split between the federal government and the North Rhine-Westphalia Land, with the former accounting for two-thirds of the total.

Sources: Bundesministerium der Finanzen (various years); Finanzministerium des Landes Nordrhein-Westfalen (various years); Storchmann (2005).

Tag: DEU_dt_04

Aid to Cover Revenue Losses in Certain Areas in North Rhine-Westphalia and Saarland (data for 1991-1998)

This programme (Zuschüsse zur Verrinerung der Belastungen infolge Wegfalls von Revierausgleich und Erschwerniszuschlag für niederflüchtige Kohle) formed part of the so-called Kohlepfennig (Coal Penny), which was Germany's largest coal subsidy. The Revierausgleich component that is reported here was meant to compensate certain producers for revenue shortfalls arising from the sale of high-cost or low-quality coal to thermal power stations. Funding was supposed to be split between the federal government and the coal-mining states of North Rhine-Westphalia and Saarland, with the states accounting for a third and a sixth of their funding respectively.

The programme started in 1990 and was supposed to stop at the end of 1995. Federal payments seem to have stopped in 1996, while payments provided by the North Rhine-Westphalia Land and by Saarland seem to have stopped in 1998 and 1996 respectively. Payments by the Saarland are available only since 1995.

Sources: Bundesministerium der Finanzen (various years), Finanzministerium des Landes Nordrhein-Westfalen (various years), Landtag des Saarlandes (2005), Storchmann (2005).

Tag: DEU_dt_05

Coking Coal Aid in North Rhine-Westphalia and Saarland (data for 1991-1997)

This programme, Zuschüsse and die Unternehmen des deutschen Steinkohlenbergbaus zur Erleichterung des Absatzes von Kohle und Koks an die Stahlindustrie (otherwise known as the Kokskohlenbeihilfe) was created in 1967 and allowed the steel industry to buy domestic coking coal at a price equal to that of imported coal. Payments went on for several decades until they eventually ceased in 1998. Funding of the gap between production prices and market prices was split between the federal government and the coal-mining states of North Rhine-Westphalia and Saarland, with the former accounting for two-thirds of the total payments until the end of 1994 and for 60% since 1995. The federal government eventually decided to cover all payments that were meant to be funded by Saarland.

Although the scheme was approved to run until July 2002, last payments seem to be paid in out 1997.

Since data from the Land budget are less disaggregated than are federal data, annual amounts mentioned under the heading "683 20 – 631" in the Land budget papers are allocated to Coking Coal Aid before 1998 and to Combined Aids after that. This approach yields numbers that are consistent with those reported in Storchmann (2005).

Sources: Bundesministerium der Finanzen (various years), Finanzministerium des Landes Nordrhein-Westfalen (various years), Storchmann (2005).

Tag: DEU_dt_06

Third Power Generation Act (data for 1991-2002)

This programme formed the bulk of what was otherwise known as the *Kohlepfennig* (Coal Penny). Under this agreement, power plants were required to burn fixed amounts of domestic coal in exchange for financial compensation covering the cost difference between domestic coal and oil (or imported coal depending on the quantities of input). Such compensation was paid out of a separate federal fund called the *Ausgleichsfonds zur Sicherung des Steinkohleneinsatzes*, which in turn was financed through a levy imposed on electricity consumers (the so-called *Kohlepfennig*). The whole scheme was eventually abolished in the late 1990s.

The amounts we report are those appearing as *Zuschüsse an Kraftwerksunternehmen* in the federal fund's annual report to the Bundestag.

Sources: Deutscher Bundestag (various years).

Tag: DEU_dt_09

Fifth Power Generation Act (data for 1996-1997)

This measure proved short-lived in that it was introduced in 1996 before being phased out in 1998, at which time it was replaced by a package of Combined Aids (see below). It was meant to maintain the provision of subsidies to domestic coal usage during the transition from the Third Power Generation Act to the new system of combined aids that subsequently gathered several old programmes into one overarching budgetary framework.

Sources: Bundesministerium der Finanzen (various years).

Tag: DEU_dt_10

Combined Aids in North Rhine-Westphalia (data for 1998-)

This aid package, Zuschüsse für den Absatz deutscher Steinkohle zur Verstromung und an die Stahlindustrie sowie zum Ausgleich von Belastungen infolge von Kapazitätsanpassungen, has been replacing and combining previous programmes such as the different versions of the Power Generation Act (see above) since 1998. It provides general support to the hard coal industry in order to ease its gradual decline. The programme still gives rise to significant federal and state annual payments. It is due to expire at the end of 2018.

Since data from the North Rhine-Westphalia's budget are less disaggregated than are federal data, annual amounts mentioned under the heading "683 20 – 631" in the Land budget papers are allocated to Coking Coal Aid before 1998 and to Combined Aids after that. This approach yields numbers that are consistent with those reported in Storchmann (2005).

Sources: Bundesministerium der Finanzen (various years), Finanzministerium des Landes Nordrhein-Westfalen (various years), Storchmann (2005).

Tag: DEU_dt_11

Aids for Capacity Reduction in North Rhine-Westphalia (data for 1997-2001)

This programme, *Zuschüsse and Unternehmen des deutschen Steinkohlenbergbaus zum Ausgleich von Belastungen infolge von Kapazitätsanpassungen*, started in 1997 to provide income support to coal-mining companies affected by the decline of the industry. It was meant to help firms adjust their production capacities. Funding was split between the federal government and the North Rhine-Westphalia Land, with the former accounting on average for about two thirds of the total. Since the measure was only a temporary one, payments ended following 2001.

Sources: Bundesministerium der Finanzen (various years), Finanzministerium des Landes Nordrhein-Westfalen (various years).

Tag: DEU_dt_12

Aid to Saarbergwerke AG (data for 1997-2001)

In 1992, Saarland decided to provide financing for the management of *Saarbergwerke AG* in five instalments over the years between 1997 and 2001.

Sources: Landtag des Saarlandes (2005).

Tag: DEU_dt_14

Capital Injections into Saarbergwerke AG (data for 1996-1998)

Saarland committed to "cleaning up" *Saarbergwerke*'s debt due to the fact that the state participated in the *Kokskohlebeihilfe* programme (see DEU_dt_06) for the years 1995 – 1997. *Saarbergwerke AG* was injected with capital in three instalments in the years 1996 – 1998.

Sources: Landtag des Saarlandes (2005).

Tag: DEU_dt_15

Miners' Bonus (data for 1991-2008)

This measure provides miners with an income-tax deduction, thereby making wages in the mining industry more attractive. Although it targets labour inputs, the miners' bonus is specifically aimed at boosting hard-coal production and therefore constitutes a production subsidy. Its creation dates back to 1956 and payments seem to have stopped around 2008.

Sources: Bundesministerium der Finanzen (various years).

Tag: DEU_te_03

Mining Royalty Exemption for Hard Coal (data for 1982-)

German mining companies are subject to a two-layered royalty system in which the federal government sets a guideline that *Länder* can decide to follow or not. The Federal Mining Act (BBergG) of 1982 sets the said guideline at 10% of the market value of production. The state of North-Rhine Westphalia which accounts for about 90% of Germany's hard coal production maintains royalties on hard coal at 0%.

Some fiscal measures related to coal production may not constitute tax expenditures under an alternative baseline where royalties (or production taxes) vary with market conditions and production costs.

Even though sub-national royalty rates vary between 0 and 40%, we use the federal guideline (10%) as the benchmark for our subsequent calculations. Production data at market value were not readily available so we use coal-import prices from the IEA to estimate the market value of North-Rhine Westphalia's production of hard coal. Production data at the subnational level do not, however, distinguish between the different types of hard coal that are extracted. We therefore apply a weighted average of prices for coking coal and steam coal, with the former accounting for approximately 60% of hard coal production in Germany. It follows that our estimate is on the lower side for at least two reasons: (i) it relies on a low benchmark for royalty rates; and (ii) import prices for coal may well be lower than domestic prices.

Sources: Statistik der Kohlenwirtschaft e.V., IEA, UBA (2008).

Tag: DEU_te_06

Manufacturer Privilege (data for 1991-)

Coal, natural gas, and petroleum products used by energy companies as process energy (i.e. not as feedstock) are, under this measure, exempted from the energy tax that normally applies to final consumption of fossil fuels.

For more information on manufacturer privilege, see Box 1.3 of the introductory section of the Inventory.

We use data from the IEA's Energy Balances for the transformation sector to allocate annual amounts reported in the *Subventionsbericht* (Subsidy Report) to the different fuels. These are predominantly refinery gas and fuel oil.

Sources: Bundesministerium der Finanzen (various years), UBA (2008).

Tag: DEU_te_07

Mining Royalty Exemption for Lignite (data for 1982-2008)

Coal-mining companies in Germany are subject to a two-layered royalty system in which the federal government sets a guideline that *Länder* can decide to follow or not. The Federal Mining Act (BBergG) of 1982 sets the said guideline at 10% of the market value of production. Most of Germany's *Länder* do not, however, levy such a charge on production of lignite.

Some fiscal measures related to coal production may not constitute tax expenditures under an alternative baseline where royalties (or production taxes) vary with market conditions and production costs.

Even though sub-national royalty rates vary between 0 and 40%, we use the federal guideline (10%) as the benchmark for our subsequent calculations. Production data at market value were not readily available so we use production volumes from *Statistik der Kohlenwirtschaft*. Obtaining prices for lignite is complex since it is not openly traded. Hence, there is no market price for it. We thus take the average of the prices reported by *Rheinbraun Brennstoff GmbH* and in both *Lausnitz* and *Mitteldeutschland*. This yields price estimates of about EUR 10 per tonne that are consistent with the values reported in UBA (2008). Data are not available after 2008.

Sources: Statistik der Kohlenwirtschaft e.V., UBA (2008).

Tag: DEU_te_14

Consumer Support Estimate

Energy-Tax Breaks for Agriculture and Manufacturing (data for 1999-)

This programme, *Energiesteuerbegünstigung für Unternehmen des Produzierenden Gewerbes und Unternehmen der Land und Fortwirtschaft*, provides certain users in the agriculture, forestry and manufacturing sectors with a lower rate of tax on heating fuels. The latter include heating oil, natural gas and LPG. The measure was introduced in 1999 along with the so-called *Ökologische Steuerreform* (Environmental Tax Reform) and has since gone through some changes regarding the rates that apply to each fuel.

We use data from the IEA's Energy Balances for the agricultural and manufacturing sectors to allocate annual amounts reported in the *Subventionsbericht* (Subsidy Report) to natural gas, diesel oil and LPG. Since both this measure and the "Tax Relief for Fuels Used in Power Generation" were reported under the same budget line prior to 2005, we use their respective shares of the total budgetary amount in 2005 to separate them into two different items.

Sources: Bundesministerium der Finanzen (various years), IEA, UBA (2008).

Tag: DEU_te_01

Peak Equalisation Scheme (data for 2001-)

This measure is closely related to the Energy Tax Breaks for Agriculture and Manufacturing (see above) in that it targets the same fuels and sectors. Following the introduction of a new "ecotax" in 1999, pension contributions were reduced as a way to compensate German companies for the higher taxes paid on energy inputs. The measure therefore provides certain companies with an additional refund on their energy tax bills in cases where the decrease in pension contributions does not prove large enough to offset the new tax burden. We only consider here the refunds that pertain to heating fuels as opposed to those that pertain to electricity, that is, we report the *Mineralölsteuer* (or the *Energiesteuer*) part and not the *Stromsteuer* part.

We use data from the IEA's Energy Balances for the agricultural and manufacturing sectors to allocate annual amounts reported in the *Subventionsbericht* (Subsidy Report) to natural gas, diesel oil and LPG. Tax expenditures data prior to 2001 are not available.

Sources: Bundesministerium der Finanzen (various years), IEA, UBA (2008).

Tag: DEU_te_02

Energy-Tax Relief for Energy-Intensive Processes (data for 2006-)

This tax expenditure exempts certain energy-intensive processes and techniques from the energy tax that has been levied since 1999. The measure itself was, however, only introduced in August 2006 as part of the *Energiesteuergesetz* (Energy Tax Act). It applies mostly to particular processes in the steel and chemical sectors and is meant to maintain the competitiveness of those industries. We only consider here the refunds that pertain to fossil fuels as opposed to those that pertain to electricity, that is, we report the *Mineralölsteuer* (or the *Energiesteuer*) part and not the *Stromsteuer* part).

We use detailed IEA estimates (unpublished) to allocate annual amounts reported in the Subventionsbericht (Subsidy Report) to all different fuels. These are mostly natural gas and coal.

Sources: Bundesministerium der Finanzen (various years), IEA, UBA (2008).

Tag: DEU_te_05

Energy-Tax Exemption for Fuels Used in Commercial Aviation (data for 1991-)

Since 1953, commercial air carriers in Germany have been exempted from the energy tax that is usually levied on consumption of mineral fuels. The concession is explicitly listed in the Ministry of Finance's *Subventionsbericht* (Subsidy Report) and refers only to domestic flights given that international aviation remains subject to the Chicago convention of 1956 restricting taxation of jet fuel.

Sources: Bundesministerium der Finanzen (various years), UBA (2008).

Tag: DEU_te_08

Energy-Tax Exemption for Fuels Used in Internal Waterway Transportation (data for 1991-)

This concession exempts internal waterway transportation from paying the fuel tax that normally applies to consumption of diesel. The measure in its current version dates back to 1962 and is still active as of 2010.

Payments have been allocated to diesel oil.

Sources: Bundesministerium der Finanzen (various years), UBA (2008).

Tag: DEU_te_09

Energy-Tax Relief for Public Transportation (data for 2000-)

Not much information is available in the Subventionsbericht (Subsidy Report) for this measure. It was introduced in 2000 and apparently reduces the fuel tax levied on public passenger transportation. The legal basis for it can be found in *EnergieStG § 56* where it is stated that the measure applies not only to motor fuels but also to natural gas and LPG.

Accordingly, we allocated the annual amounts on the basis of the IEA's Energy Balances for the road transport sector.

Sources: Bundesministerium der Finanzen (various years), IEA, UBA (2008).

Tag: DEU_te_10

Energy-Tax Relief for LPG and Natural Gas Used in Engines (data for 1996-)

LPG and natural gas used in engines are, under this measure, subject to relief from the fuel tax. Although the concession was introduced in 1995 and initially targeted vehicles used in public transportation only, it was subsequently broadened in April 1999 to include all vehicles.

We allocated the measure entirely to LPG given the very low share of natural gas used as fuel. Indeed, natural gas does not even enter the IEA's balances for road transport.

Sources: Bundesministerium der Finanzen (various years), UBA (2008).

Tag: DEU_te_11

Energy-Tax Refund for Diesel Used in Agriculture and Forestry (data for 1991-)

This measure was created in 1951 and provides both agriculture and forestry with a tax rebate on diesel fuel. It was renamed in 2001 when it was moved from the transfers category (*Gasölverbilligung*) to the tax expenditure category (*Agrardieselvergütung*) in

the *Subventionsbericht* (Subsidy Report). Since 2005, refunds have been capped at 10 000 litres and a maximum refund of EUR 350 per year, thereby limiting annual payments. It is also important to note that the energy tax in Germany is distinct from the road tax.

Sources: Bundesministerium der Finanzen (various years), UBA (2008).

Tag: DEU_te_12

Energy-Tax Rebate for Fuels Used in Horticultural Work (data for 2001-2004)

This measure was introduced for a period of four years only, starting in 2001 and ending in 2004. It provided the German horticultural sector with a fuel tax rebate on the heating fuel used in greenhouses.

Payments have been allocated to diesel oil.

Sources: Bundesministerium der Finanzen (various years).

Tag: DEU_te_13

General Services Support Estimate

Aid for Water Contamination in North Rhine-Westphalia and Saarland (data for 1991-1999)

This programme, *Erstattung der Erblasten des Steinkohlenbergbaus,* started in 1969 and finished at the end of 2002. It provided significant annual expenditure for undertaking rehabilitation works at old mining sites. These mainly aimed at treating contaminated ground-water. Funding was split between the federal government and the governments of the coal-mining states of North Rhine-Westphalia and Saarland. Contributions from North Rhine-Westphalia were growing over time from about a third in the first three years to about half of the total by the time the scheme ended, while contributions from Saarland seem to have consistently accounted for about a third of the payments to that Land.

Payments by Saarland are available only since 1995. Payments by both North Rhine-Westphalia and Saarland seem to have stopped after 1998, while the federal- payments seem to have stopped after 1999.

The measure is allocated to the GSSE as it does not increase current production or consumption of coal.

Sources: Bundesministerium der Finanzen (various years), Finanzministerium des Landes Nordrhein-Westfalen (various years), Landtag des Saarlandes (2005), Storchmann (2005).

Tag: DEU_dt_01

Early Retirement Payments for Hard-Coal Miners in North Rhine-Westphalia and Saarland (data for 1991-)

This programme, *Anpassungsgeld für Arbeitnehmer des Steinkohlenbergbaus*, provides older, unemployed hard-coal miners with early retirement payments until they become eligible for regular pension payments. Some of the payments are also earmarked for covering health-insurance contributions for those working in the hard-coal-mining sector. It goes back to 1972 and is still giving rise to significant annual expenditure. The programme is expected to continue until the end of 2018, while the payments are assumed to continue until the end of 2027.

Funding is split between the federal government and the governments of the coal-mining states of North Rhine-Westphalia and Saarland, with the coal-mining states accounting for two-thirds of the total.

Payments by the federal government and North Rhine-Westphalia are available since 1991, while payments by Saarland are available since 1995 (data for the period 1995-99 can be found in one of the government interpellations, data since 2000 is available in the budgetary reports).

The measure is allocated to the GSSE as it does not increase current production or consumption of coal.

Sources: Bundesministerium der Finanzen (various years), Finanzministerium des Landes Nordrhein-Westfalen (various years), Landtag des Saarlandes (2005), Ministerium für Finanzen und Europa des Saarlandes (various years), Storchmann (2005).

Tag: DEU_dt_07

Re-Adaptation Aid, Art. 56 ECSC (data for 1991-2006)

This measure, *Soziale Hilfsmaßnahmen für Arbeitnehmer der Kohle- und Stahlindustrie sowie des Eisenerzbergbaus,* was introduced in 1960 to help workers affected by the decline of the coal industry (along with the ore and steel industry) in the context of Art. 56 of the European Coal and Steel Community (ECSC) Treaty of Paris. It aims at reallocating the workforce away from these declining sectors through the use of training programmes and various allowances. Payments from the federal government ceased a few years after the Treaty of Paris had expired back in 2002.

Although specific breakdown of these payments is unavailable, the 13th federal subsidy report states that about half of the payments pertain to the coal sector. We thus allocate only this share of total payments to coal. The measure is allocated to the GSSE as it does not increase current production or consumption of coal.

Sources: Bundesministerium der Finanzen (various years).

Tag: DEU_dt_08

Rehabilitation of Lignite Mining Sites in East Germany (data for 1993-)

Rehabilitation of lignite mining sites (*Braunkohlesanierung*) began in 1990 and was undertaken together by the federal government and East-German "Lignite states" (*Braunkohleländer*) — Saxony, Brandenburg, Saxony-Anhalt, and Thüringen — which all provided substantial financial resources for the programme.

The programme will be in operation at least until the end of 2012, as stipulated by the current federal document regarding the financing of rehabilitation of lignite mining sites in the years between 2008 and 2012 (*VA IV Braunkohlesanierung*). The scheme encompasses a wide range of activities, including rehabilitating over 200mining pits in 31 lignite mining areas, the vast majority of which were turned into lakes; securing over 1 000 km of embankment; liquidating the assets of briquette factories, power plants and industrial boilers; restoring water balances in regions affected by mining; dealing with the consequences of mine flooding; collecting and evaluating information on about 1 230 potentially contaminated mining sites, and undertaking necessary remedial measures.

As stated by the federal government, the total cost of running the rehabilitation of lignite mining sites programmes in the years between 1991 and 2007 amounted to over EUR 8 billion paid jointly by the federal government and the abovementioned

East-German *Länder*. The federal government and the "Lignite states" committed to securing over EUR 1 billion for the programme for the years between 2008 and 2012.

Aggregate data estimates for *Braunkohlesanierung* are available for the years between 1993 and 2012. Data estimates for the period between 2008 and 2012 are appropriations. In 1993, financing came solely from spending earmarked for job creation (*Arbeitsbeschaffugsmaßnahmen*). Estimates for the period between 1993 and 2007 cover the total cost of running the rehabilitation programme, whereas the appropriations are computed excluding the cost of labour (*Lohnkostenzuschüsse*) as it is said to be difficult to forecast.

Since this measure does not increase current production or consumption of coal, we allocate it to the GSSE.

Sources: Bundesregierung (2008), Bundesregierung (2009).

Tag: DEU_dt_13

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Table 12.1. Summary of fossil-fuel support to coal - Germany

(Millions of EUR, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Producer support								
Income support								
Combined aids in North-Rhine Westphalia	NW	2139	2130	2288	2332	1781	1727	1778
Support for intermediate inputs								
Manufacturer privilege	Federal	12	11	8	8	6	6	7
Support for land and natural resources								
Mining royalty exemption for hard coal	NW	151	141	141	191	140	153	153
Mining royalty exemption for lignite	NW SR	201	200	204	199	..	..	..
Support for labour								
Miners' bonus	Federal	25	21	11	1	n.a.	n.a.	n.a.
Consumer support								
Energy tax relief for energy-intensive processes	Federal	n.a.	41	192	204	204	206	218
General services support								
Re-adaptation aid Article 56 ECSC	Federal	1	1	n.a.	n.a.	n.a.	n.a.	n.a.
Rehabilitation of lignite mining sites in East Germany	BR SN ST TH	330	290	231	213	218	192	163
Early-retirement payments for hard-coal miners in North-Rhine Westphalia and Saarland	NW SR	188	196	194	183	169	172	179

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Table 12.2. Summary of fossil-fuel support to petroleum - Germany

(Millions of EUR, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Producer support								
Support for intermediate inputs								
Manufacturer Privilege	Federal	358	365	247	242	260	260	303
Consumer support								
Energy-tax refund for diesel used in agriculture and forestry	Federal	410	180	135	135	320	395	395
Energy-tax breaks for agriculture and manufacturing	Federal	47	44	24	33	34	34	16
Energy-tax relief for LPG and natural gas used in engines	Federal	57	85	100	120	160	190	210
Energy-tax exemption for fuels used in internal waterway transportation	Federal	129	129	129	118	157	166	170
Energy-tax relief for public transportation	Federal	69	63	57	67	67	70	70
Energy-tax exemption for fuels used in commercial aviation	Federal	397	395	395	640	660	680	680
Energy-tax relief for energy-intensive processes	Federal	n.a.	27	137	143	143	144	152
Peak equalisation scheme	Federal	33	34	17	17	16	18	21

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Table 12.3. Summary of fossil-fuel support to natural gas - Germany

(Millions of EUR, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Producer support								
Support for intermediate inputs								
Manufacturer privilege	Federal	28	21	13	17	29	29	34
Consumer support								
Energy-tax breaks for agriculture and manufacturing	Federal	295	269	212	282	283	284	134
Peak equalisation scheme	Federal	207	206	153	145	130	155	174
Energy-tax relief for energy-intensive processes	Federal	n.a.	47	217	223	223	224	237

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Chapter 13.

GREECE

This chapter identifies, documents, and provides estimates of the various budgetary transfers and tax expenditures that relate to the production or use of fossil fuels in Greece. An overview of the country's energy economy is first given to place the measures listed into context. A data-documentation section then describes those measures in a systematic way. Whenever possible, the description details a measure's formal beneficiary, its eligibility criteria and functioning, and the fuels whose production or use stand to benefit from the measure. The chapter ends with a set of tables that provide, subject to availability, quantitative information and estimates for the various measures listed.

Energy resources and market structure

In 2010 total primary energy supply (TPES) in Greece was 29 Mtoe, down almost 28% from a peak of 32 Mtoe in 2007. The main domestic source of energy is lignite, which is used almost entirely for the production of electricity. Petroleum provides about 53% of total energy supply. Greece imports oil mainly from Russia (about 36%), Libya (14%) and Iran (14%), and exports significant quantities of refined petroleum products. The most important change in recent years has been the increase in the use of natural gas, which Greece has been importing since 1995 and which has stabilised the use of lignite. Lignite use was the same in 2010 as in 1990 (at around 7 Mtoe), but its importance in TPES has declined to 26%, down from 33% in 1990, while that of natural gas — 75% of which is used to generate electricity — has grown to almost 12%. The contribution of renewable energy sources and waste combustion to Greece's TPES has climbed gradually over the last decade, reaching 7.5% in 2010.

The transportation sector represents about 41% of the country's final energy consumption and 60% of its oil consumption, and is still growing. Household use is the second-largest sector. Together with the public, tertiary and agricultural sectors, it accounts for about 36% of final energy consumption. Final energy consumption is dominated by oil (making up approximately two-thirds of the total). The government of Greece has embarked on a strategy to expand its natural-gas use, in order to both diversify the energy sources and reduce CO_2 intensity of its economy. The use of natural gas has been experiencing the fastest growth rate of all fuels consumed in Greece. This situation is expected to continue, also due to significant deposits of natural gas that have recently been discovered in the Greek waters south of Crete. The natural-gas supply in Greece is diversified as the country relies on two pipelines: the natural gas from Russia is imported through the Greek-Bulgarian entry point, while the Greek-Turkish entry point allows Greece to import gas from the Middle East and the Caspian region. In 2010, about three-quarters of the country's natural gas was supplied through pipelines, while the rest was supplied through the LNG terminal. Although Russia remains the main supplier of natural gas, its share of the total natural-gas imports to Greece has been sharply declining over the past few years — from about 85% in 2005 to about 54% in 2010. At the same time, natural-gas imports from Algeria and Turkey have substantially increased — in 2010 they accounted for around 30% and 17% of imports respectively. Natural-gas imports are considered an important policy issue, and efforts are being made to further diversify the sources of natural-gas imports, to expand the LNG terminal and to build new gas interconnections.

Greece is endowed with large quantities of lignite of low calorific value. The country's lignite reserves are estimated at 3.5 Gt, and are exploitable through surface mines. However, no future expansion of the lignite-mining industry is likely to take place, due to environmental and land-use constraints.

In 2010, renewable energy provided 7.5% of TPES in Greece. While the share of TPES has been stable for renewable energy for the past two decades and amounted to about 5-6%, it started increasing in 2010. In 2010, 0.7% TPES was provided by solar energy, which is the highest share for solar energy in TPES among the IEA countries, ahead of Spain, Austria and Germany. While using solar energy for directly heating water is very popular in Greece (solar water heaters have long been used in many buildings), its use for electricity generation is negligible. The share of wind power in TPES is seven-highest among the IEA member states. Greece has abundant wind-power potential, which is estimated to amount up to 10 GW and the government expects that the wind-power capacity in Greece will increase more rapidly than other renewable-energy technologies combined by 2020. The country's hydro-electric potential is also large. In 2010, electricity generated from hydro power accounted for about 13% of total electricity generation. The 2010 National Renewable Energy Plan projects 250 MW of small hydro plants to be deployed. Moreover, Greece has set a target of achieving

the 20% share of renewable energy in total gross final energy consumption by 2020, which is 2% higher than the obligation imposed on Greece by the European Union.

The electricity sector remains dominated by the state-controlled Public Power Corporation (PPC) and its subsidiaries, although legal reforms and new entrants in the electricity sector have gradually been weakening PPC's position. The fiscal austerity measures that the Greek parliament adopted in June 2011 include reducing the state's shareholding in PPC from 51% to 34% in 2012, although the state may retain control of the company's management. The PPC's share in total installed capacity in the interconnected system has declined from 98.6% in 2003 to 83.7% at the end of 2009 and below 77% at the end of 2010. The company continues to control almost all electricity supply on the non-interconnected islands. Moreover, the PPC owns all lignite, oil and large hydropower plants in Greece. New entrants to electricity generation have mostly built gas-fired plants. The PPC dominates the wholesale electricity market, although its market share has declined from 87% in 2008 to 85.6% in 2009 and 77.3% in 2010. Law 4001/2011, adopted on 22 August 2011, transposes into national law the EU Directives 2009/72/EC and 2009/73/EC. These laws stipulate that the independent transmission system operator is designated as the only administrator and the owner of the assets. In the retail market, all customers in the interconnected system have been free to choose their electricity supplier since July 2007, but retail competition remains very limited. Since the adoption of the Network Code and the Supply Licence Code in April 2010, independent suppliers and large energy consumers have been allowed to import natural gas. By the end of May 2011, more than a dozen new players have entered the Greek natural-gas market.

The vertically integrated Public Gas Corporation, DEPA, dominates the industry and controls imports and supply to large customers. DEPA is 65%-controlled by the state with the rest belonging to the semi-state oil company ELPE (Hellenic Petroleum). As part of the privatisation programme adopted in June 2011, the State has pledged to reduce its ownership of DEPA to a minimum of 10%. The development and operation of the high-pressure transmission network was legally unbundled in 2006. Nonetheless, tariffs for natural-gas transportation and LNG remain far more expensive than in the rest of the European Union due to Greece's geographical conditions and the fact that the natural-gas infrastructure is new and the depreciation of the main components is yet to occur.

Greece has an ambitious target of achieving a 40% share of electricity generated from renewable energy by 2020, which is supported by feed-in tariffs (FITs) available for producers of renewable-based electricity (except for electricity produced by large hydro-electric dams). FITs in Greece differ considerably across technologies. While they are very generous for some (e.g. solar PV), they are at almost grid parity for wind and not sufficient to attract investment in other technologies (e.g. off-shore wind). Incentives are also available for energy-efficiency investments.

Prices, taxes and support mechanisms

Liberalisation of the oil sector began in 1992 (Law 2008/1992) and prices are currently set by the market. Prices of oil products are determined at three levels: the ex-factory price, the wholesale price and the retail price. Starting with the ex-factory price at the refinery, the wholesale price is obtained by adding taxes and wholesale margins, and finally retail prices are freely determined in a competitive market. There are two refineries, the semi-state-owned ELPE and the privately-owned Motor Oil. Both refineries have an obligation to inform the government and the regulatory authority on a regular basis about ex-factory prices. Indicative prices are announced weekly by the government as a guide to the final consumer. Fuels are taxed with VAT, the rate of which has been increased in recent years (from 19% in 2009 to 23% in 2010). Excise tax and other fees and charges are also levied on fuels. However, a

refund of excise-tax payments is currently provided for diesel fuel used in agriculture. A refund of excise-tax payments for diesel fuel used for heating households in winter was abolished on 15 October 2012.

Electricity prices, regarding low-voltage users, are still regulated, but not directly subsidised. Household electricity prices are among the lowest in the European Union. In 1999, the PPC's monopoly of the electricity market was abolished and the energy market has since been regulated by the Regulatory Authority of Energy (RAE) (Law No. 2773/1999 and Law No. 3175/2003). On 5 March 2008, the European Commission adopted a Decision finding that Greece had infringed Article 86(1) in conjunction with Article 82 of the EC Treaty by maintaining the preferential access to lignite in favour of the PPC, thus conferring a competitive advantage on the PPC in the wholesale electricity market. In 2009, Greece proposed to grant lignite-exploitation rights to deposits located in Drama, Elassona, Vegora and Vevi to companies other the PPC and to ensure that those companies that win the tender would not sell lignite to the PPC. As a result, competitors of PPC will potentially access about 40% of all exploitable Greek lignite deposits. The EC welcomed and approved these proposals.

Small customers (those consuming less than 10 million cubic metres annually) are supplied by three regional monopolies. DEPA has a 51% stake in these companies, while private investors have the remaining 49%. These regional monopolies supply small customers located within their concession area for a period of 30 years from the beginning of their concession license in 2002. Natural gas has also long benefited from a lower rate of VAT.

Documentation

General notes

The fiscal year in Greece coincides with the calendar year. Following OECD convention, amounts prior to 1999 are expressed as "euro-fixed series", meaning that the fixed EMU conversion rate (1 EUR = 340.750 GRD) was applied to data initially expressed in the Greek drachma (GRD).

Consumer Support Estimate

Subsidy for Suppliers of Fuels to Remote Areas (2004-)

A subsidy is paid to those oil companies that supply fuels to remote areas (islands, border areas, etc.).

We allocate the annual amounts reported in the Greece's budgetary data to diesel oil and motor gasoline on the basis of the IEA's Energy Balances for the road sector.

Sources: Budget of Greece (Budget Line 2134).

Tag: GRC_dt_01

Excise Tax Refund for Fuels Used in the Production of Energy Products for Intra-EU Use (2004-)

There is not much data available on this excise-tax refund. The refund is probably given mainly to the producers of energy products, which are then sold internally within the EU market.

We allocate the annual amounts reported in the Greece's budgetary data to crude oil, natural gas, lignite and refinery feedstocks on the basis of the IEA's Energy Balances for the inputs to energy-transformation processes.

Sources: Act 2960/2001, Budget of Greece (Budget Line 3122), IEA.

Tag: GRC_te_01

Excise Tax Refund for Diesel Oil (2004-2007)

As stipulated in the Act 2386/1996 and the Act 2873/2000, certain uses of diesel oil are granted a refund.

Data are available for the period 2004-7. Although the scheme is ongoing, the estimates have ceased to be provided in the budget line 3125 after 2007 due to the change in reporting of excise tax refunds for fuels used in agriculture — the estimates for these particular refunds are now provided separately (see GRE_te_03). For the same reason, the estimates provided for 2007 exclude these estimates that pertain to agriculture.

Sources: Budget of Greece (Budget Line 3125), IEA.

Tag: GRC_te_02

Excise Tax Refund for Fuels Used in Agriculture (2008-)

As stipulated in a number of acts on excise tax rates and other charges on fuel products (Act 2386/1996, Act 2873/2000, Act 2960/2001 and Act 3634/2008), fuels used in agriculture are granted a partial refund from a special fund operated by the Greek Payment Agency. Each year, the refund has to be approved by a relevant Ministerial Decision that delineates the details of the procedure. The following Ministerial Decision provides details for 2011: ΔΕΦΚ Α 5031950 ΕΞ 2011 (ΦΕΚ 1644 Β, 22/7/2011).

We allocate the annual amounts reported by the Greek Payment Agency (O.P.E.K.E.P.E.) to fuel oils and motor gasoline used in the agriculture and forestry on the basis of the IEA's Energy Balances.

Sources: Act 2386/1996, Act 2873/2000, Act 2960/2001, Act 3634/2008, IEA, O.P.E.K.E.P.E.

Tag: GRC_te_03

Excise Tax Refund for Fuels Used in Domestic Shipping Including Fishing (2004-)

As stipulated by the Act 2960/2001 (Articles 73, 75 and 78), an excise-tax refund is provided for fuels used in domestic shipping, including fishing boats.

We allocate the annual amounts reported in the Greece's budgetary data to fuel oils used in the domestic navigation sector and the fishing sector on the basis of the IEA's Energy Balances.

Sources: Act 2960/2001, Budget of Greece (Budget Line 3126), IEA.

Tag: GRC_te_04

Excise Tax Refund for Fuels Used in Tourist Boats (2004-)

As stipulated by the Act 438/1976 (Article 14, Paragraph 2) and the Act 2386/1996, an excise-tax refund is provided for fuels used by boats for tourist purposes.

We allocate the annual amounts reported in the Greece's budgetary data to fuel oils used in the domestic navigation sector on the basis of the IEA's Energy Balances.

Sources: Act 438/1976, Act 2386/1996, Budget of Greece (Budget Line 3127), IEA.

Tag: GRC_te_05

Excise Tax and Other Tax Refunds for Fuel Used by Hospitals, Social Solidarity Institutions and Hotels (2004-)

As stipulated by Act 2386/1996 (article 15, paragraph 15) and Act 2753/1999 (Article 19, paragraph 7), a refund of any excise tax and other tax levied on fuels applies to any fuels used for social purposes, e.g. in hospitals, social solidarity institutions, and hotels.

We allocate the annual amounts reported in the Greece's budgetary data to fuel oils, natural gas and LPG used in the commercial and public services sector on the basis of the IEA's Energy Balances.

Sources: Act 2386/1996, Act 2753/1999, Budget of Greece (Budget line 3128), IEA.

Tag: GRC_te_06

Reduced Rate of VAT on Natural Gas (no data available)

A reduced VAT rate applies to natural gas in comparison to other energy sources: Through 2004 the reduced rate amounted to 8% (the general VAT rate at the time was 18%). In 2011 the VAT rate on natural gas was raised to 13% (the general VAT rate has also been raised to 23%).

Sources

Policies or transfers

Act 2127/1993, Excise tax rates for petroleum products.

Act 2960/2001, Articles 73, 75 and 78. This Law is the Greek Customs Code and provides detailed excise tax rates on the use of petroleum products.

Act 3828/2010, Article 1 (February 2010). Article 1 of this Law amends Article 73, paragraph 1 of Law 2960/2001, increasing significantly excise tax rates.

Act 3833/2010, Article 15 (March 2010 – Measures to combat the economic crisis). Article 15 of this Law amends further paragraph 1, Article 73 and article 109 of Act 2690/2001, increasing further excise tax rates.

Act 3845/2010, Article 4 (May 2010 – Measures relating to the activation of the support mechanism for the Greek economy by the euro area member states and the International Monetary Fund). Article fourth of this Law amends further paragraph 1, article 73 of Law 2960/2001, increasing further excise tax rates.

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Various fees and charges on petroleum products (Article 19, Law 3054/2002, Article 9, paragraph 5, Law 2093/1992, Articles 6 and 7, Ministerial Decision D5/591/21-5-2001).

Energy statistics

IEA (2011), *Energy Balances of OECD Countries*, International Energy Agency, Paris.

Table 13.1. Summary of fossil-fuel support to coal - Greece

(Millions of EUR, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Consumer support								
Excise tax refund for fuels used in the production of energy products for intra-EU use	Central	4	6	1	0.5	0.8	0.8	0.8

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Table 13.2. Summary of fossil-fuel support to petroleum - Greece

(Millions of EUR, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Consumer support								
Excise tax refund for fuels used in tourist boats	Central	5	3	1	1	1	2	2
Excise tax refund for fuels used in domestic shipping including fishing	Central	25	47	11	10	11	13	13
Excise tax refund for fuels used in agriculture	Central	n.a	n.a	n.a	116	120	160	160
Excise tax and other tax refunds for fuel used by hospitals, social-solidarity institutions and hotels	Central	3	42	22	18	15	16	16
Excise tax refund for fuels used in the production of energy products for intra-EU use	Central	10	17	3	1	2	2	2
Excise tax refund for diesel oil	Central	35	68	0.4	n.a	n.a	n.a	n.a
Subsidy for suppliers of fuels to remote areas	Central	6	6	6	7	4	7	7

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Table 13.3. Summary of fossil-fuel support to natural gas - Greece

(Millions of EUR, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Consumer support								
Excise tax and other tax refunds for fuel used by hospitals, social-solidarity institutions and hotels	Central	0.4	8	6	6	8	8	8
Excise tax refund for fuels used in the production of energy products for intra-EU Use	Central	0.7	1	0.4	0.2	0.2	0.2	0.2

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Chapter 14.

HUNGARY

This chapter identifies, documents, and provides estimates of the various budgetary transfers and tax expenditures that relate to the production or use of fossil fuels in Hungary. An overview of the country's energy economy is first given to place the measures listed into context. A data-documentation section then describes those measures in a systematic way. Whenever possible, the description details a measure's formal beneficiary, its eligibility criteria and functioning, and the fuels whose production or use stand to benefit from the measure. The chapter ends with a set of tables that provide, subject to availability, quantitative information and estimates for the various measures listed.

Energy resources and market structure

Hungary has modest resources of oil and natural gas, but production has peaked and is expected to continue to decline. Well over 80% of the country's requirements of oil, and almost 80% of its natural gas, are imported, with virtually all of these imports coming from Russia. Almost 60% of the coal used in Hungary is produced indigenously, though coal accounts for only 11% of the country's total primary energy supply. Natural gas is the leading fuel in the energy mix, accounting for 38%, followed by oil (25%) and nuclear power (16%). Combustible renewables account for another 7%; modern renewable technologies, such as wind and solar energy, make a negligible contribution. Nuclear energy and natural gas each account for about a third of Hungary's electricity generation, and coal for another fifth. Over 15% of the country's electricity supply is imported, mainly from the Slovak Republic.

There is a mixture of public and private ownership of energy assets in Hungary. MOL, the former national oil company, which was privatised in the 1990s, dominates the upstream oil and gas industry and operates the national gas transmission system. Natural-gas sales to captive customers are undertaken by five regional monopolies, all of which are foreign-owned (by E.On, Gaz de France and Italgas). The municipality of Budapest owns half of the Budapest Supply Company, while the other half is owned by RWE.

MVM, a fully state-owned company, is the central institution in the Hungarian electricity market. It controls approximately 80% of electricity production and sales in Hungary, either directly or indirectly. It also holds 99.95% of Paks NPP, which operates the country's sole nuclear power plant; 99.7% of the former transmission system operator, National Powerline; 100% of the system operator and transmission network owner and operator, MAVIR; and 80% of the Vértes power plant, of which local authorities hold the remaining shares. MVM also owns 25% plus one share of all power-generating companies privatised in the mid-1990s; is the majority owner of several co-generation companies and, through a subsidiary, operates the reserve power plants that are meant to ensure reliable power supply. An MVM subsidiary is also one of the leading trading companies on the competitive power market.

The government has transposed all relevant EU directives on opening up electricity and gas markets to competition, but has done little to restrict the power of the incumbents. As a result, the development of effective competition in both sectors is below that which would be possible under the changed legislation.

Prices, taxes and support mechanisms

Oil product and coal prices in Hungary are deregulated and are set by the market. The regulator, the Hungarian Energy Office, sets prices for transportation tariffs in electricity and natural-gas networks, regulated retail prices for electricity, gas and heat to households and small business consumers, and wholesale electricity prices paid to generators operating under a long-term power-purchase agreement or eligible for feed-in tariffs. Small consumers are allowed to move back and forth between the regulated and the open market. Regulated natural-gas end-user prices are the same throughout the country, regardless of distance from the main supply points. They are set according to a formula that takes account of import prices plus 8.5% for the operation of the system and other non-gas-supply costs. This effectively keeps regulated prices well below those in the open market.

All fuels and energy services are subject to the regular value-added tax (VAT) of 25%. Excise taxes are levied on sales to industry of transport fuels, natural gas and electricity; households pay excise taxes on transport fuels and LPG.

Gas and heat prices to end-users are subsidised both through the regulated pricing formula and through an explicit subsidy paid to public gas suppliers who must credit it explicitly on

the bills to households they supply, or credit it to the account of district heat suppliers who supply heat to households, in proportion to the number of households served. The subsidy is paid on a per-household basis, with no consideration for the status of occupancy.

Since 2000, no direct government aid has been extended to coal production. However, indirect aid was given through a very favourable power-purchase agreement, under which the Oroszlány power station was operating. Until 2006, these subsidies were implicit in the power prices paid to the station's owner, which also operates the Márkushegy mine that supplies lignite coal to the station. In 2005, the European Commission authorized a restructuring package under which grants to coal mines were to be phased out by 2010. A direct support system for coal is now in operation, under which funds are paid by final electricity consumers through an electricity tariff, and through a levy modelled on the former German "Coal Penny" that was added to the transmission tariff on 6 January 2006. In addition, direct government assistance continues to be given to support mine closures and rehabilitate mining areas.

Data documentation

General notes

The fiscal year in Hungary coincides with the calendar year.

Producer Support Estimate

Coal Penny (data for 2004-)

This scheme consists of levies that are paid by final electricity consumers to finance purchases of high-cost, coal-generated power by electricity companies. The original aim of the coal penny (*szénfillér rendszer*) was to subsidise the unprofitable Márkushegy mine, which produces lignite for the Vértes power plant. The Márkushegy site is now the last underground mine still in activity in Hungary.

The provisions governing the coal penny are subject to EU rules on state aid to the coal sector, which require—among other things—aid to be "in connection with coal for the production of electricity" and to be part of plan for closing mines by 2018. Aid is therefore expected to continue in the coming years until the Márkushegy mine and the associated power plant stop operating.

The levy paid by final electricity consumers is currently HUF 0.23 per kWh, which corresponds to support worth about HUF 7 billion in 2011.

Sources: Government of Hungary [Government Decisions No. 3329/1990, 3530/1992, 3439/1993], Ministry of National Development.

Tag: HUN_dt_01

Consumer Support Estimate

Fuel-Tax Refund for Railways (data for 2007-)

Railways operating in Hungary are refunded the excise tax they pay on their purchases of diesel fuel. This scheme is administered by Hungary's National Tax and Customs Administration (NAV).

Sources: Ministry for National Economy (various years), National Tax and Customs Administration.

Tag: HUN_te_01

Fuel-Tax Refund for Agriculture (data for 1990-)

The off-road use of diesel fuel in farming activities is subject to refunds for up to 70% of the excise tax normally levied on sales of petroleum products in Hungary.

Sources: Ministry for National Economy (various years), OECD.

Tag: HUN_te_02

Household Maintenance-Cost Subsidy (data for 2008-)

This programme is now known as the "household maintenance-cost subsidy" (*lakásfenntartási támogatás*) though it was initially created in 2003 to subsidise the consumption of natural gas by low-income households. Since most district heating in Hungary makes an extensive use of natural gas, it was decided at the time that the programme would also cover the residential consumption of heat. Starting in 2010, support is now restricted to heat only. Payments are made to gas and heat suppliers who are then required to pass them on to final consumers.

Estimates for 2011 are for the period from January to August only. We allocate the measure entirely to natural gas in the years prior to 2010. Starting in 2010, we then use data from the IEA's Energy Balances on fuel use in the heat-generation sector to allocate the annual spending reported to the different types of fuel concerned (coal, natural gas, fuel oil, etc.).

Sources: Government of Hungary [Government Orders No. 113/2003, 289/2007, 238/2008], Hungarian Energy Office Order No. 238/2008, Ministry for National Economy (various years), IEA.

Tag: HUN_dt_02

Reduced Rate of VAT for District Heating (data for 2009-)

Sales of district heat in Hungary are subject to a preferential rate of VAT. Since about 98% of the country's heat is generated using fossil fuels, we consider this measure to be supporting the consumption of these fuels.

We allocate the reported amounts of revenue foregone to the different types of fuel concerned (coal, natural gas, fuel oil, etc.) on the basis of the IEA's Energy Balances for the heat-generation sector.

Sources: Ministry for National Economy, National Tax and Customs Administration, IEA.

Tag: HUN_te_03

General Services Support Estimate

Support for Mine Decommissioning (data for 2011-)

The Government of Hungary provides direct support for the decommissioning of certain state-owned coal mines. Budgetary transfers range between HUF 1 and 2 billion a year.

We allocate this measure to the GSSE since it does not support current production or consumption of coal. Estimates are only available starting in 2011. We use production data from the IEA's Energy Balances to allocate the annual amounts reported in budget documents to the various types of coal concerned (hard coal, sub-bituminous coal, lignite, etc.).

Sources: Government of Hungary (2011), Ministry for National Economy (various years), IEA.

Tag: HUN_dt_03

Early-Retirement Payments for Coal Miners (data for 2011-)

This measure (*átmeneti bányászjáradék*) comprises a number of social transfers benefitting coal miners in Hungary. These include wage subsidies, early-retirement payments, and "coal emolument supplements." The transfers are meant to alleviate the social costs associated with the closure of several coal-mining sites.

We allocate this measure to the GSSE since it does not support current production or consumption of coal. Estimates are only available starting in 2011. We use production data from the IEA's Energy Balances to allocate the annual amounts reported in budget documents to the various types of coal concerned (hard coal, sub-bituminous coal, lignite, etc.).

Sources: Government of Hungary (2011), Ministry for National Economy (various years), IEA.

Tag: HUN_dt_04

Sources

Policies or transfers

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OECD, *Producer and Consumer Support Estimates database*, Monitoring Farm Support and Evaluating Policy, Available at: *www.oecd.org/topic/0,3699,en_2649_33797_1_1_1_1_37401,00.html*.

Energy statistics

IEA (2011), *Energy Balances of OECD Countries*, International Energy Agency, Paris.

Table 14.1. Summary of fossil-fuel support to coal - Hungary

(Billions of HUF, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Producer support								
Support to unit returns								
Coal Penny	Central	11	10	10	9	7	7	7
Consumer support								
Household maintenance cost subsidy	Central	..	..	..	0	0	2	2
Reduced rate of VAT for district heating	Central	n.a.	n.a.	n.a.	n.a.	0.2	1	2
General Services Support								
Early-retirement payments for coal miners	Central	..	..	..	..	..	..	8
Support for mine decommissioning	Central	..	..	..	..	..	..	1

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Table 14.2. Summary of fossil-fuel support to petroleum - Hungary

(Billions of HUF, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Consumer support								
Reduced rate of VAT for district heating	Central	n.a.	n.a.	n.a.	n.a.	0.4	3	5
Household maintenance cost subsidy	Central	..	..	..	0	0	4	3
Fuel-tax refund for railways	Central	..	..	7	7	7	5	5
Fuel-tax refund for agriculture	Central	20	21	21	18	21	22	24

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Table 14.3. Summary of fossil-fuel support to natural gas - Hungary

(Billions of HUF, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Consumer support								
Reduced rate of VAT for district heating	Central	n.a.	n.a.	n.a.	n.a.	2	13	22
Household maintenance cost subsidy	Central	..	..	..	82	62	19	15

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Chapter 15.

ICELAND

This chapter identifies, documents, and provides estimates of the various budgetary transfers and tax expenditures that relate to the production or use of fossil fuels in Iceland. An overview of the country's energy economy is first given to place the measures listed into context. A data-documentation section then describes those measures in a systematic way. Whenever possible, the description details a measure's formal beneficiary, its eligibility criteria and functioning, and the fuels whose production or use stand to benefit from the measure. The chapter ends with a set of tables that provide, subject to availability, quantitative information and estimates for the various measures listed.

Energy resources and market structure

Iceland is a mountainous island straddling the mid-Atlantic ridge. These geographic features have endowed it with an abundance of renewable energy. Currently, around 85% of its primary energy supply, and almost 100% of its electricity, is obtained from hydro-electric power or geothermal heat. The country produces no fossil fuels, and hence imports all its petroleum-derived transport fuels. Only a small amount of fossil fuels are used for industrial processes.

Iceland converted from oil to geothermal district heating during the period 1940 to 1975. Today, 94% of space heating comes from geothermal resources and most of the rest is provided by renewable electricity. The government continues to support the increased direct use of geothermal heat for district heating in small communities (some 130 of which operate outdoor swimming pools), through long-term, low-interest loans.

Private companies supply Iceland with petroleum products; state-owned companies dominate the rest of Iceland's energy economy. Landsvirkjun (the National Power Company), the largest electricity producer in Iceland, is owned by the Icelandic State (50%) and two of the country's largest municipalities, Reykjavík (45%) and Akureyri (5%). The company sells its production wholesale to local utilities and directly to power-intensive industries. It also owns and operates the national grid. Reykjavík Energy, which is municipally owned, provides hot water to half of Iceland's population, and also generates electricity using turbines powered by geothermal steam.

At 50 000 kWh a year, Iceland's per-capita electrical consumption is by far the highest in the world. More than 85% of this consumption is by industry, dominated by aluminium smelting. Less than one-fifth of Iceland's economically and environmentally viable potential for electrical production from renewable energy resources (estimated at over 50 TWh/year) is currently being harnessed, however. A major aim of the government is to displace fossil fuels used for transport with electrical energy, either directly (through, for example, battery-powered vehicles) or indirectly through the production of hydrogen. In 1998 the Icelandic Parliament set a specific target of converting the country's vehicle and fishing fleets to hydrogen produced from renewable energy by no later than 2050. (In 2011 the target date was moved forward, to 2020.) With this aim in mind, Icelandic New Energy (INE) was founded in 1999 to promote the use of hydrogen fuel in Iceland. The company is 51% owned by VistOrka—a consortium of investment funds, the Ministry of Industry and Commerce, Iceland's major energy companies, and the University of Iceland—with the remainder owned by Daimler, Norsk Hydro, and Shell Hydrogen.

Prices, taxes and support mechanisms

With the exception of petroleum products, energy prices are set by government-owned utilities in Iceland. Electricity for general users is sold by licensed traders (of which there are currently seven), who are selected by the users and buy the energy from production companies, most on fixed agreement of 1 to 12 years duration from Landsvirkjun, or from their own production companies. Electricity contracts for power-intensive projects are concluded on a long-term basis (frequently of 20 years duration or more), and in many cases the price component of such contracts indexes the price of electricity to the price of the output of the business in question, e.g. the price of aluminium. These contracts are frequently structured on a "take-or-pay" basis, and a special tariff applies to the fee for transmitting electricity to power-intensive industries. Energy prices for power-intensive industries are not publicly available but all power contracts with such industries are notified to the EFTA (European Free Trade Association) Surveillance Authority, which in 2010 concluded that the contracts were in line with the market investor principle and did not involve state aid.

The use of petroleum fuels in transport is taxed directly and indirectly through several taxes. Motor vehicles are charged an excise duty at the port of import. Starting in January 2010, the *ad valorem* excise duty levied on private cars is now based on a vehicle's CO_2 emissions, with rates ranging from 0% for vehicles emitting between 0 and 80 grams of CO_2 per km, to 65% for vehicles emitting 250 grams and more. Reduced rates are levied on vehicles intended for use as taxis and rental cars, and for cars that are capable of being partially fuelled with electricity or methane. Excise taxes are completely waived for most large buses, goods trucks and off-road vehicles; cars exclusively used for motor sport and for rescue operations; and cars exclusively fuelled with electricity or hydrogen. Owners of all vehicles, no matter how fuelled, also pay a semi-annual weight tax and disposal charge. The weight tax is ISK 6.83 for the first 1 000 kg of vehicle weight, ISK 9.21 for the next 2 000 kg and ISK 2 277 for each tonne above 3 000 kg. A disposal charge of ISK 350 is levied on each vehicle twice a year, payable for fifteen years from the date of the first registration of the vehicle in the country. Once the vehicle is delivered for scrap, a ISK 15 000 refund is paid to the owner. There is also a weight-distance tax on large vehicles.

All motor fuels used by road vehicles are subject to a general excise tax (ISK 24.46 per litre) and a supplementary road tax, which amounts to ISK 39.51 per litre for unleaded fuel and ISK 54.88 per litre for diesel, as well as the normal VAT (*virðisaukaskattur*) of 25.5%. Off-road uses and diesel used for space heating or in stationary engines are exempt from the road tax. Liquefied petroleum gas (LPG), as well as compressed natural gas and aviation fuel, receives a complete exemption from the excise tax. A carbon tax applicable to liquid fuels, electricity, and hot water was also enacted in 2009; current rates are ISK 5.75 per litre for diesel fuel, ISK 5 per litre for gasoline, ISK 4.10 per litre for aviation fuel and kerosene, and ISK 7.10 per kilogram for fuel oil.

A reduced rate of VAT applies to most foodstuffs and a number of other items, including hot water delivered by pipes, electricity, oil for space heating, and water for swimming pools. As of 1 March 2007, this lower rate was reduced to 7%.

Data documentation

General notes

The fiscal year in Iceland coincides with the calendar year.

Consumer Support Estimate

Lower VAT Rate on Oil for Space Heating (no data available)

A reduced rate of VAT (7%) applies to oil used for space heating and swimming pools in Iceland. Most sales of goods and services are, however, subject to the standard 25.5% rate.

No estimates are available for this scheme.

Sources: Ministry of Finance (2009).

Sources

Policies or transfers

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Ministry of Finance (2009), *Principal tax rates*, Government of Iceland, Available at: *eng.fjarmalaraduneyti.is/customs-and-taxes/principaltaxrates/nr/11977*.

Chapter 16.

IRELAND

This chapter identifies, documents, and provides estimates of the various budgetary transfers and tax expenditures that relate to the production or use of fossil fuels in Ireland. An overview of the country's energy economy is first given to place the measures listed into context. A data-documentation section then describes those measures in a systematic way. Whenever possible, the description details a measure's formal beneficiary, its eligibility criteria and functioning, and the fuels whose production or use stand to benefit from the measure. The chapter ends with a set of tables that provide, subject to availability, quantitative information and estimates for the various measures listed.

Energy resources and market structure

Ireland has few fossil-energy resources and is highly dependent on energy imports. The only indigenously produced energy sources are peat, combustible renewables and waste, and small volumes of natural gas. Oil accounts for half of the country's primary energy supply, all of which is imported, while gas contributes another 32%. All but 7% of the gas consumed is imported via an interconnector with the United Kingdom; domestic production has been declining for several years with the depletion of mature fields and delays to the start-up of the Corrib field, which was discovered in 1997. Imported coal and indigenously-produced peat, which is used for electricity generation and heating purposes, each meet 7% of the country's energy needs. The share of renewable energy is currently relatively small, but the government plans to increase production substantially to reduce dependence on imported energy and lower greenhouse-gas emissions.

The energy sector is characterised by a mixture of private and public ownership. The oil industry, which is fully deregulated, is entirely in private hands, with several companies competing in the retail sector. For several decades, the state-owned Irish National Petroleum Company operated Ireland's sole petroleum refinery, in Cork. In 2001, however, the 75 000 bpd Whitegate refinery, and the associated oil terminal on Whiddy Island, were sold to Tosco Corporation (now a subsidiary of Conoco-Phillips) for USD 100 million. As part of the deal, the company promised to maintain or expand production at the refinery through 2016, and to keep on all the staff with no redundancies. The refinery today supplies around 41% of the Republic's demand for petroleum products.

State-owned companies dominate the electricity, natural-gas and peat sectors. The Electricity Supply Board (ESB) holds two-thirds of generating capacity, though its share has been falling as new power producers have entered the market. It also owns the transmission system, the operation of which is the responsibility of another state-owned body, EirGrid, as well as the distribution network. Bord Gáis Éireann (BGE) owns the gas transmission and distribution network, operating the transmission system through a subsidiary company. Retail competition has developed to only a relatively small degree. Bord na Móna, a partially state-owned company, is the country's main peat producer.

Prices, taxes and support mechanisms

The prices of all forms of energy are deregulated, with the exception of electricity and natural gas. All customers can opt to switch supplies from incumbent to competing suppliers, who offer prices freely determined by the market. The electricity and gas tariffs of ESD and BGE for small and medium-sized customers, as well as network charges, are regulated by the Commission for Energy Regulation (CER) on a cost-of-service basis. Fuels and energy services are subject to VAT at a special rate of 13.5%, with the exception of gasoline and diesel fuel used on roads, for which the standard rate of 23% is applied. Excise taxes (including a national oil-reserve levy) are levied on all oil products. There are no excise taxes on natural gas, peat, coal or electricity.

The main form of public support to fossil energy other than the low rate of VAT is a subsidy to peat production. This takes the form of a Public Service Obligation (PSO) levy to support the higher cost of ESB's purchases of electricity generated from peat, which are mandated by the government. The mechanism has been approved by the European Commission through to 2019. The costs recovered through the PSO levy, calculated by the CER, correspond to the additional costs of the power purchases over and above the cost of electricity purchased at market prices.

Data documentation

General notes

The fiscal year in Ireland coincides with the calendar year. Following OECD convention, amounts prior to 1999 are expressed as "euro-fixed series," meaning that we applied the fixed EMU conversion rate (1 EUR = 0.788 IEP) to data initially expressed in the Irish Pound (IEP).

Producer Support Estimate

Public Service Obligation for Peat (data for 2004-)

The Public Service Obligation (PSO) is a levy charged on all final electricity consumers to finance purchases of peat-generated power by the Electricity Supply Board (ESB). The costs of generating electricity using peat usually exceed the market price. ESB is therefore compensated through PSO-financed transfers for its mandatory purchases of peat-generated electricity. The value of the PSO is set on an annual basis by the Commission for Energy Regulation (CER) to meet the additional costs incurred by ESB. The legal basis for the PSO scheme is set out in the Electricity Regulation Act of 1999. Support to peat-fired power plants is expected to cease by 2020.

Although the PSO scheme applies to certain renewable energy sources too, we only report here the part that concerns peat-fired power plants such as the Lough Ree and Edenderry plants.

We allocate this measure to the PSE since it guarantees demand for peat produced in Ireland, thereby providing higher returns to peat producers. While the fiscal year in Ireland matches the calendar year, PSO periods run from 1 October to 30 September of the following year. Accordingly, data reported for the year 2010 cover the period running from 1 October 2009 to 30 September 2010. The PSO levy was exceptionally negative for the period running from October 2008 to September 2009.

Sources: CER (various years).

Tag: IRL_dt_01

Expensing of Exploration and Development Costs (no data available)

The upstream oil and gas sector in Ireland attracts a specific corporate income-tax rate of 25%, as compared to the 12.5% rate that applies to most other sectors. Full deductions are, however, allowed for exploration, development, and field-abandonment costs in the year in which they are incurred. Unclaimed deductions can be carried forward for an unlimited amount of time. Petroleum activities in Ireland are also subject to a ring fence, which acts to prevent losses from extraction activities to be set off against profits arising from non-petroleum-related activities for tax purposes. In addition, the Irish government does not levy any royalties, nor does it participate in projects through production-sharing contracts.

Starting in January 2007, licenses issued after that date are now also subject to a Petroleum Resource Rent Tax (PRRT) as provided for in the 2008 Finance Act. The PRRT is a progressive tax on the profits from oil and gas extraction. Its rates range from 5% to 15% depending on field profitability.

No estimates of the revenue foregone due to the expensing of exploration and development costs are available.

Sources: Department of Communications, Energy and Natural Resources (2011).

Consumer Support Estimate

Reduced VAT Rate for Certain Energy Products (no data available)

A reduced rate of VAT (13.5%) is applied to sales of certain fuels in Ireland. Eligible products include coal, peat, natural gas, electricity, kerosene-type jet fuel, dyed diesel, and hydrocarbon oils used for domestic or industrial heating purposes. The on-road use of gasoline, diesel, and LPG remains taxed at the standard 23% rate.

No estimates of the revenue foregone due to the reduced rate of VAT are available.

Sources: Revenue (2008).

Sources

Policies or transfers

CER (various years), *Public Service Obligation Levy – Decision Paper*, Commission for Energy Regulation, Available at: *www.cer.ie/en/renewables-decision-documents.aspx#PSODecisions*

Department of Communications, Energy and Natural Resources (2011), *Petroleum Taxation in Ireland*, Government of Ireland, Available at: *www.dcenr.gov.ie/NR/rdonlyres/E226421F-47B6-42DB-9458-C5EF0EE61930/0/PetroleumTaxationinIreland.pdf*

Revenue (2008), *VAT Guide*, Indirect Taxes Division, Irish Tax and Customs, Available at: *www.revenue.ie/en/tax/vat/leaflets/index.html*

Table 16.1. Summary of fossil-fuel support to coal - Ireland

(Millions of EUR, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Producer support								
Support to unit returns								
Public service obligation for peat	Central	62	44	10	47	-39	94	78

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic.

Chapter 17.

ISRAEL

This chapter identifies, documents, and provides estimates of the various budgetary transfers and tax expenditures that relate to the production or use of fossil fuels in Israel. An overview of the country's energy economy is first given to place the measures listed into context. A data-documentation section then describes those measures in a systematic way. Whenever possible, the description details a measure's formal beneficiary, its eligibility criteria and functioning, and the fuels whose production or use stand to benefit from the measure. The chapter ends with a set of tables that provide, subject to availability, quantitative information and estimates for the various measures listed.

Energy resources and market structure[1]

Apart from about 5% of its total primary energy that is obtained from renewable energy sources, Israel depends almost totally on fossil fuels for its energy supply. Around a third of its energy comes from imported coal, which is used entirely to generate electricity. About half of its energy comes from imported crude oil and products. The rest comes from natural gas which is both imported via a pipeline from Egypt and produced domestically. The gas is mainly used to generate electricity. Small amounts of natural gas are also used for water desalinisation.

Israel's consumption of natural gas is expected to triple by 2020, to 15 billion cubic meters a year. In 2004, Israel began producing natural gas from deposits in the Yam Tethys field, from which around 17 billion cubic metres have already been extracted and around 10-15 billion cubic metres remain. More recently exploration has revealed significant additional deposits. Another field (Tamar) contains 250 billion cubic metres of confirmed reserves and is expected to begin production in 2013; this field could supply all of Israel's current domestic requirements for at least 20 years. In December 2010, Tamar was dwarfed by the discovery of Leviathan — the largest deepwater gas reservoir found anywhere in the world over the past decade (it is estimated to have 450 cubic metres of natural gas). Therefore in total, the undersea gas fields explored to date are estimated to contain about 700 billion cubic metres of gas. The potential for further discoveries is considerable: the US Geological Survey estimates that there are 3.5 trillion cubic meters of gas in the whole Levant Basin, approximately two-thirds of which lies within Israel's jurisdiction. Geologically, it is likely that there are oil resources in the vicinity of the natural gas fields but at the time of writing there had been no significant findings.

Oil shale is another resource being explored in Israel. The World Energy Council reported in November 2010 that Israel's underground oil shale (marinite) deposits, which underlay some 15% of the country at a depth of about 300 meters, could yield the equivalent of 4 billion barrels of oil using traditional open-cast mining techniques. Most of Israel's shale resources are located in the Rotem basin region of the northern Negev desert, near the Dead Sea. According to Israel's Ministry of National Infrastructures, the total geological endowment of the country's oil shale may well exceed several hundred billion barrels, but mineable reserves form only a tiny fraction of that figure. Traditionally, mining oil-shale requires tremendous amounts of water and energy, inputs not available in Israel in abundance.

Israel's energy sector is yet to become fully competitive. Electricity production and distribution remain dominated by the state-owned Israel Electricity Corporation. Progress in reforming this sector has been slow. Private-sector production is set to expand but the "network" component is yet to be separated from other activities and distribution remains fully operated by the incumbent. Development of the offshore gas fields is being conducted by the private sector, much of it by a consortium of companies headed by a US oil company (Noble Energy). The transmission of natural gas, however, is carried out by the Israel Natural Gas Lines Company (INGL), a government subsidiary established in 2004 to construct and operate a national high-pressure gas transmission system. Currently, INGL operates purely as a transmission carrier, serving large customers.

[1] The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Prices, taxes and support mechanisms

Over the last decade, Israel has advanced reforms to deregulate its oil sector, particularly the gasoline industry. Among other changes, a cost-plus basis system was abolished, some price controls for end users of petroleum products were eliminated and the two oil refineries have been privatised. The retail price of gasoline (excluding tax and excise) remains based on a formula linked to crude oil prices but this does not appear to result in markedly different (ex-tax) prices from elsewhere. However, relatively high excise duties mean the full price of vehicle fuels is similar to that in a number of European countries; at the beginning of 2012 the price for a litre of 95 octane fuel was approximately ILS 7.23 (about USD 2). Transport fuels are subject to both a VAT of 17% and excise taxes of ILS 2.99 (USD 0.77) per litre for gasoline and ILS 2.86 (USD 0.75) per litre for diesel. The government raised the excise tax on gasoline by ILS 0.20 (USD 0.05) per litre on 1 January 2011, but removed it a month later in the face of public protest at rising fuel prices. Plans remain to add ILS 0.20 per litre to the excise in January 2012.

In September 2009, a five-year fuel tax reform was concluded, as a result of which the excise-tax rates on diesel and gasoline were almost matched and the diesel annual car licensing fee was reduced to match the fee on gasoline engine cars. The reform intended to reduce economic distortions influencing the choice between diesel- and gasoline-powered cars. As of April 2011, the tax on diesel, at ILS 2.76 per litre, was only 5% lower than the excise tax on gasoline. However, large businesses and industries that depend on diesel fuel for income generation (including agriculture, construction, and fishing) are entitled to apply for diesel tax refunds. Buses and taxies are also included in this refund scheme.

Excise duties are also imposed on fuels used for stationary purposes. The tax on coal, which was increased at the beginning of 2011 from ILS 8.6 (USD 2.24) to ILS 43.3 (USD 11.28) per tonne, is now substantially higher than the excises on heavy oil and natural gas — respectively, ILS 14.84 and ILS 16.9 per tonne — and may further encourage a shift away from coal-fired electricity production.

In August 2009 Israel approved a tax reform which seeks to improve vehicle efficiency and reduce emissions. The purchase tax on private cars in Israel, at 83% plus VAT is one of the highest in developed countries. The reform set tax rebates according to the degree of reduced vehicular air pollution emissions, taking into account local pollutants (CO, HC, NO_X, and PM) as well as CO_2 emissions. Vehicles in the lowest emission category, after the refund, pay a 45% tax; hybrid-electric cars are charged only 30% and fully electric vehicles 8% (in all cases plus VAT).

The prices of electricity are regulated by the Electricity Authority, and are not directly subsidized. Israel's natural-gas market is relatively immature, and gas prices are set by long term supply contracts for large customers, dominated by the contracts between the pipeline importer, domestic producers and the IEC. Future prices for natural gas in Israel are expected to be set by what independent power producers can afford to pay, and by the fuel-substitution possibilities of the major consumers. It is expected that natural gas will become the dominant fuel used in new power plants (mainly CCGTs) and in existing steam turbines converted from heavy fuel oil. Energy security and flexibility considerations are likely to ultimately constrain expansion of gas-fired electricity production.

Israel's concession-based regime for taxing hydrocarbon production, dating from 1952, was revised in April 2011. The new law provides that royalties on hydrocarbon discoveries will remain at 12.5%, while a special profits levy (in addition to regular corporate tax) will begin after the developers have paid back investment outlays plus a return allowance. The tax will start at 20% of taxable income after a payback of 150% on the investment has been

reached, and will rise in incremental steps, reaching 50% after a return of 230% on the investment. The total take by the state (including the 12.5% royalty) will therefore not exceed 62.5%. Any change in the rate of corporate income tax will trigger a corresponding change in the profits levy. The maximum profits levy has been reduced to 45.5% due to a change in the regular corporate tax rules as of 2012. The new regime is being applied to existing development projects and in these cases transitional provisions have been made to soften the tax burden and encourage production and development. The Tamar field is notably expected to benefit from these concessions. In broad terms the new fiscal regime has raised the effective tax on resources significantly to a level that is much closer to those typical elsewhere.

Data documentation

General notes

Israel's fiscal year coincides with the calendar year.

Producer Support Estimate

The oil and gas industry in Israel is regulated by a system of fees, royalty payments and tax deductions developed in the 1950s. The fiscal provisions that are unique to the oil and gas industry are the Oil Law (1952), Oil Regulations (1953), Income Tax Ordinance (1961) and some parts of the income tax legislation, especially the Deductions from the Income of Holders of Oil Rights (1956) and the Rules for Calculating Tax for the Holding and Sale of Participation Units in an Oil Exploration Partnership (1988).

Israel started producing natural gas in 2004. As this is a relatively recent development, the issues of producer taxation and royalty payments are currently under review by the government (*Knesset*), the Ministry of Finance and participants representing the civil society. In April 2010, the Minister of Finance appointed a committee to examine the fiscal framework for the oil and gas resources in Israel, headed by Professor Eytan Sheshinski. The Sheshinski Committee submitted its final conclusions in January 2011. It recommended that the 12.5% rate of royalty payments should remain unchanged since increasing it could have a negative impact on the development of relatively less profitable gas fields. The depletion deduction, however, should be cancelled as it leads to a considerable reduction of the amount of taxable income which has no economic justification, the Committee concluded. The Committee also instituted a progressive oil and gas levy on profits. Its initial rate will be 20% and it will gradually rise to 50% according to the amount of the excess profits. The new levy-calculation formula will give incentives for increasing exploration expenditure. In addition, as per income tax calculations, costs that accumulated during the lease stage of the oil-and-gas-asset development will be awarded accelerated depreciation at a rate of 10%. Investments made by the end of 2013 will be given a maximum of amount of accelerated depreciation rate of 15%.

Reduced Royalty Payments (data for 2004-2009)

The Oil Law (1952) stipulates that the rate of royalty payments that the holder of a lease is required to pay is 12.5% of gross income.[2] The value of natural gas produced from the

[2] Gross income is the market value of the oil at the wellhead. If a market price for the price of oil at the wellhead is not available at the time of royalty-payment calculation, costs of the resource transportation from the wellhead to the selling point should be deducted from the selling price. When it comes to royalty payments for natural gas based on offshore deposits, there is

Tethys concession (operated by a consortium of Noble Energy and the Delek Group) is calculated by taking into account 70% of the expenses for the construction of the production platform, 60% of the operating expenses and 100% of the expenses for the gas pipeline and other facilities not connected to the platform. For the 2004-2010 period, total royalty payments amounted to 10.6% of gross income.

Data are available for the 2004-2009 period from the Sheshinski Report. They comprise calculations of the amounts of total tax breaks (the sum of the reduction in royalty payments and the depletion deduction) and the total royalty payments. In order to estimate both the reduction in royalty payments and the depletion deduction, we compute the amounts of royalties that should be paid according to the Oil Law. We then calculate the amounts that constitute the reduction in royalty payments as the difference between the royalty payments that ought to have been paid and those that were actually paid. The difference between the total tax breaks and the reduction in royalty payments is the depletion deduction.

We use production data from the IEA to allocate the annual amounts reported in the Sheshinski report to oil and natural gas extraction.

Sources: Sheshinski Report (2011), IEA.

Tag: ISR_te_01

Depletion Deduction (data for 2004-2009)

Tax arrangements for the oil and gas industry are detailed in the Deductions from the Income of Holders of Oil Rights Regulations of 1956 which allow for special deductions that reduce the taxable income of companies operating in the sector. In 1988, the benefits were expanded and the state allowed for the transfer of the tax breaks listed in the abovementioned document to the outside investors through the trading of securities. Eligible tax benefits include the following items: depletion deduction, recognition of exploration and development expenses as operating expenses, deductions due to the abandonment of an oil asset, depreciation in respect of the acquisition of land, and exemption from the payment of customs duty and other import taxes.

The Deductions from the Income of Holders of Oil Rights Regulations grants the holder of oil rights an annual imputed deduction that amounts to 27.5% of gross income[3] in a given tax year but no more than 50% of net income.[4] The Sheshinski Report states that the rationale behind the depletion deduction is that its amount should reflect the depletion of the resource in the deposit and, as such, the impairment in the value of an asset. Since no payment has been made for the resource in the deposit in first place and the depleted asset is owned by the state, this depletion deduction constitutes a producer-support measure, Report concludes. Based on the Sheshinski Report, the Knesset abolished the depletion deduction in May 2011.

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uncertainty as to the definition of the wellhead and the costs that should be attributed to the selling point. Hence, it is difficult to determine the exact amount of the royalty.

3 Gross income is defined as the amount received from the sale at the wellhead of the crude oil produced and utilised from the benefit or income less royalties. The *Sheshinski Report* states that there is another method of calculating the depletion deduction but since this method is only applicable if an acquisition of an asset had been affected, we do not discuss it here.

4 Net income is defined as gross income less the deductions that may be attributed to the production of oil and gas, with the exception of the depletion allowance.

Data are available for the 2004-2009 period. See "Reduced Royalty Payments" for explanation of the calculation method. We use production data from the IEA to allocate the annual amounts reported in the Sheshinski report to oil and natural gas extraction.

Sources: Sheshinski Report (2011), IEA.

Tag: ISR_te_02

Consumer Support Estimate

Excise Tax Exemptions on Diesel (data for 2007-)

The *Excise Tax on Fuel Order of 2005* provides for tax rebates on diesel fuel if used for income-generation purposes in the following commercial vehicles: buses, taxis, fishing boats, and working vehicles such as tractors. The tax rebate for commercial vehicles varies between 45% and 50% on a capped amount of diesel equivalent to the "average consumption" for a given use.

In September 2009, the excise tax on diesel was set to match the excise tax on gasoline as a result of a five-year government reform aiming at reducing economic distortions influencing the choice between diesel- and gasoline-powered cars. During the reform process in May 2009, the government raised the tax rate on gasoline by ILS 0.3, which created a further discrepancy between the tax rates on gasoline and diesel. However, large businesses and industries that depend on diesel fuel for income generation, can still apply for diesel tax rebates.

Data are available for the period 2007-2010.

Sources: Customs Authority, Ministry of Environment, Ministry of Finance (2005), Ministry of National Infrastructures.

Tag: ISR_te_03

General Services Support Estimate

National Coal Ash Board Funding (no data available)

The National Coal Ash Board (NCAB) is a governmental agency was established in 1993 by the Ministry of Energy and Infrastructures (now the Ministry of National Infrastructures), in co-operation with the Ministry of the Environment, the Interior Ministry, the Israel Electric Company (IEC), and the National Coal Supply Company (NCSC). Its aim is to promote more economic uses for coal ash accumulating at Israel's coal-fired power stations through investing state resources in research and development related to economic and environmental issues concerning coal-fired power stations, through co-operative initiatives with potential users.

No estimates are available for this programme.

Sources: NCAB (2011).

Sources

Policies or transfers

Ministry of Finance (2005), *Excise Tax on Fuel Order of 2005*, Government of Israel, Available at: *www.finance.gov.il/customs/tsav_solar2005.pdf*.

NCAB (2011), *Israeli National Coal Ash Board, NCAB Mission,* Available at: *www.coal-ash.co.il/english/index.html*.

Sheshinski Report (2011), *Conclusions of the Committee to Examine the Policy on Oil and Gas Resources in Israel, Headed by Professor Sheshinski*, State of Israel, January 2011, *www.financeisrael.mof.gov.il/FinanceIsrael/Docs/En/publications/02_Full_Report_Nonincluding_Appendixes.pdf*.

Energy statistics

IEA (2011), *Energy Balances of OECD Countries*, International Energy Agency, Paris.

Table 17.1. Summary of fossil-fuel support to petroleum - Israel

(Millions of ILS, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Producer support								
Support for land and natural resources								
Reduced royalty payments	Central	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1
Support for capital formation								
Depletion deduction	Central	0.1	0.1	0.1	0.3	0.2	0.1	n.a.
Consumer support								
Excise tax exemption on diesel	Central	n.a.	..	1300	1500	1700	2000	2000

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Table 17.2. Summary of fossil-fuel support to natural gas - Israel

(Millions of ILS, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Producer support								
Support for land and natural resources								
Reduced royalty payments	Central	13	18	21	26	27	27	27
Support for capital formation								
Depletion deduction	Central	79	104	109	123	118	118	n.a.

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Chapter 18.

ITALY

This chapter identifies, documents, and provides estimates of the various budgetary transfers and tax expenditures that relate to the production or use of fossil fuels in Italy. An overview of the country's energy economy is first given to place the measures listed into context. A data-documentation section then describes those measures in a systematic way. Whenever possible, the description details a measure's formal beneficiary, its eligibility criteria and functioning, and the fuels whose production or use stand to benefit from the measure. The chapter ends with a set of tables that provide, subject to availability, quantitative information and estimates for the various measures listed.

Energy resources and market structure

Italy produces small volumes of natural gas and oil and virtually no coal, so most of the country's fossil-fuel supplies—as well as a significant share of its electricity—are imported. They are augmented by local production of energy from renewable sources. Import dependence has been increasing in recent years. Oil and natural gas each account for around 40% of Italy's total primary energy supply, the rest coming from coal (8%), combustible renewables and waste (4%), hydro and geothermal energy (both 3%) and imported electricity (2%). In total, indigenous production meets only 16% of the country's primary energy needs.

The role of the state in the Italian energy sector has been greatly reduced by a programme of privatisation that was launched in the 1990s. Until 1995, Eni, the dominant oil and gas company in Italy, was fully state-owned; by 2001, the state's share of the company had been reduced to just over 30%. The company has retained a dominant position in the Italian upstream oil and gas sector, although a number of privately owned Italian and foreign companies have also established a significant presence. Eni remains the leading refining and marketing company, with about 30% of the market. The Italian oil market is fully liberalised. The government intervenes only to protect competition and to avoid abuse of dominant position.

Eni is also a leading player in the downstream gas market, through its 50% ownership of the main gas group, Snam Rete Gas, which controls most of the physical gas infrastructure in Italy. This includes almost the entire transmission network (Snam Rete Gas), a liquefied natural gas import business (GNL Italia), almost all the underground gas storage capacity in Italy (Stogit), and the leading local distribution network operator (Italgas). These businesses are functionally and legally unbundled.

The state has retained a 31% stake (21% directly and 10% through the majority state-owned bank, *Cassa Depositi e Prestiti*) in the former national electricity company, Enel, which continues to enjoy a dominant position in the national market. Despite government measures to encourage wholesale competition, the company is still Italy's largest power generator, controlling just over half of total capacity, and is among Europe's largest generators measured by installed capacity. The other leading generators are Edison (in which the French company, EDF, has a majority stake), E.On Produzione (formerly Endesa Italia, majority owned by Germany's E.On) and Enipower (a subsidiary of Eni). Terna, in which Cassa Depositi e Prestiti holds a near 30% stake, is the primary owner and operator of the national high-voltage transmission grid. There are a large number of distribution companies, many of them owned by municipalities. Enel remains by far the largest distribution network operator, distributing approximately 86% of total distributed volumes.

Italy has liberalised its electricity and gas sectors progressively in conformance with EU directives. Transmission and distribution of natural gas and electricity have been unbundled and a regulator, *Autorità per l'Energia Elettrica e il Gas* (AEEG), set up to supervise access to networks and regulate tariffs. Since July 2007, all electricity consumers are free to choose their supplier, while retaining the right to be supplied at regulated prices. Switching rates are low among household customers: Enel and Eni still account for the bulk of electricity and gas sales.

Prices, taxes and support mechanisms

The prices of all forms of energy other than electricity are set freely by the market. Electricity consumers have a choice of supply from incumbent suppliers at regulated tariffs or from alternative suppliers at market rates. There are no regulated tariffs for gas, but the AEEG has put in place a public service reference price for gas for all domestic customers and small businesses, based on the actual price of gas at entry points to the Italian transmission system.

Italy applies different rates of VAT and excise tax on energy at the national level. Oil products are subject to excise tax and VAT (at a rate of 21%) for gasoline, diesel fuel, light fuel oil and LPG. Natural gas is subject to excise tax and VAT, as well as additional taxes at the regional level. A lower rate of VAT, currently 10%, is applied to sales of natural gas up to 480 cubic metres a year, and 21% for the remaining consumption. Different rates of excise tax are levied on gas according to whether the consumer is a business or a household and to the level of consumption (higher taxes are applied to higher consumption levels for households and vice versa for industry). The household tax rates are lower in the south of the country. For electricity, households pay a 11% rate of VAT; excise tax is not charged on the first 150 kWh per month of consumption (where capacity is up to 3 kW). For consumption above that volume, excise tax is charged at a fixed rate, which is slightly higher for secondary residences. For industrial consumers, excise tax is charged at a fixed rate on consumption over 200 kWh per month.

There are a number of excise-tax exemptions, reductions and rebates for specific fuels and sectors. These include (but are not limited to) shipping (inland and maritime); rail transport; certain end users in the agriculture, horticulture, aquaculture and forestry sectors; diesel fuel used in public passenger transportation and by ambulances; fuel used by trucking companies; and LPG and heating oil sold in certain regions, such as those not served by a natural-gas distribution network. There is also an excise-tax rebate on automotive fuels for people living in oil-producing areas.

Support to energy production includes cheap loans and grants to encourage natural gas production in depressed regions and relief from royalty payments on the first tranche of production of oil and gas.

Data documentation

General notes

Following OECD convention, amounts prior to 1999 are expressed as "euro-fixed series", meaning that we applied the fixed EMU conversion rate (1 EUR = 1 936.27 ITL) to data initially expressed in the Italian Lira (ITL).

The fiscal year in Italy runs from 1 July to 30 June. Following OECD convention, data are allocated to the starting calendar year so that, for example, data covering the period July 2005 to June 2006 are allocated to 2005.

Producer Support Estimate

Royalty-Free Thresholds (no data available)

Italy's royalty regime is set out in a legal act which was adopted in November 1996 (*Decreto Legge* No.625) but rates have recently been increased for onshore production (10% as of January 2009). The additional revenues thus collected are meant to finance a reduction in fuel prices for those consumers living in areas where oil and gas extraction takes place. Meanwhile, the overall royalty framework remains characterised by lower rates applicable to offshore production (4% for oil and 7% for natural gas). Royalty revenues are generally divided between different jurisdictions with the central government retaining between 30% and 45% of the total.

The 1996 act also provides for a royalty relief on the first 20 000 tonnes of oil produced onshore per year (50 000 tonnes in the case of offshore production). A similar provision

applies to natural gas for the first 25 million cubic meters (80 million cubic meters in the case of offshore production).

No estimates of the revenue foregone due to the royalty relief are available.

Sources: Ministero dello Sviluppo Economico (2011), Parlamento Italiano (1996).

Consumer Support Estimate

Fuel-Tax Exemption for Shipping (data for 2005-)

This provision exempts the use of fuel for navigation purposes from the excise tax that is normally levied on sales of petroleum products in Italy. It applies specifically to the transportation of goods and passengers along national waterways and within EU waters. The measure also encompasses the use of fuel in the fisheries sector.

We allocate the annual amounts reported by Italy's Department of Finance to diesel fuel and heavy fuel oil on the basis of the IEA's Energy Balances for the fisheries and domestic-navigation sectors.

Sources: Dipartimento delle Finanze, IEA.

Tag: ITA_te_01

Fuel-Tax Reduction for Rail Transport (data for 2005-)

Rail transport in Italy benefits from a 70% reduction in the rate of excise tax that normally applies to sales of diesel fuel.

Sources: Dipartimento delle Finanze.

Tag: ITA_te_02

Energy Tax Breaks for Agriculture (data for 2005-)

The agriculture, horticulture, forestry, and aquaculture sectors in Italy benefit from a reduced rate of excise tax for their use of diesel fuel and gasoline. The reduction with respect to the benchmark rate amounts to 78% for diesel and 51% for gasoline.

Data from the IEA's Energy Balances for the agriculture and forestry sectors indicate that the use of diesel dwarfs that of gasoline, with the latter accounting for less than 1% of total energy use in those sectors. For that reason, we allocate this measure entirely to diesel fuel.

Sources: Dipartimento delle Finanze.

Tag: ITA_te_03

Tax Relief for Public Transport (data for 2005-)

This measure provides public transportation in Italy with a reduction in the rate of excise tax normally levied on sales of petroleum products. This rate varies according to the energy product used and refunds correspond to fixed amounts of fuel. The reduction also applies in a few instances to boat transfers whenever road transport is not available. Rail transport is, however, excluded (see "ITA_te_02" above). Various caps are set on the amounts of fuel to which the reduction applies, with these caps depending on population density on a regional basis.

We allocate this measure entirely to diesel fuel.

Sources: Dipartimento delle Finanze.

Tag: ITA_te_04

Tax Relief for Ambulances (data for 2005-)

This provision grants ambulances providing assistance or first-aid a reduction in the excise tax normally levied on sales of petroleum products. Refunds correspond to fixed amounts of fuel.

We allocate this measure entirely to diesel fuel.

Sources: Dipartimento delle Finanze.

Tag: ITA_te_05

Tax Relief for Certain LPG Users (no data available)

The use of LPG in certain industrial plants and buses used for public transportation purposes is subject to a 90% reduction in the excise tax levied on sales of petroleum products.

No estimates of the revenue foregone due to this reduction are available.

Sources: Dipartimento delle Finanze.

Tax Relief for Trucking Companies (data for 2005-)

Trucking companies operating in Italy can obtain partial refunds on the amount of excise tax paid for their fuel purchases. Refunds usually correspond to a fixed amount of fuel.

We allocate this measure entirely to diesel fuel.

Sources: Dipartimento delle Finanze.

Tag: ITA_te_06

Tax Relief for Industrial Users of Natural Gas (data for 2005-)

Large industrial users of natural gas can benefit from a reduction in the rate of excise tax usually levied on sales of natural gas in Italy. The reduction equals 60% and applies to those users whose consumption volumes exceed 1.2 million cubic meters per year.

Sources: Dipartimento delle Finanze.

Tag: ITA_te_07

Tax Relief for Users Living in Disadvantaged Areas (data for 2005-)

This provision is meant to benefit those users of fuel who reside in poor, remote areas where provision of natural gas can prove challenging. Relief is provided by means of a set of reductions on the excise tax that normally applies to sales of petroleum products.

We allocate the annual amounts reported by Italy's Department of Finance to LPG and diesel fuel on the basis of the IEA's Energy Balances for the residential sector.

Sources: Dipartimento delle Finanze, IEA.

Tag: ITA_te_08

Sources

Policies or transfers

Ministero dello Sviluppo Economico (2011), *Gettito Royalties Anno 2010*, Direzione Generale per le Risorse Minerarie ed Energetiche, Italian Government, Available at: *unmig.sviluppoeconomico.gov.it/unmig/royalties/royalties.asp*.

Parlamento Italiano (1996), *Decreto Legislativo 25 novembre 1996, n. 625*, Leggi, Available at: *www.parlamento.it/parlam/leggi/deleghe/96625dl.htm*.

Energy statistics

IEA (2011), *Energy Balances of OECD Countries*, International Energy Agency, Paris.

Table 18.1. Summary of fossil-fuel support to petroleum - Italy

(Millions of EUR, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Consumer support								
Fuel tax reduction for rail transport	Central	10	12	10	5	1	1	2
Tax relief for trucking companies	Central	69	94	149	148	144	144	346
Tax relief for public transport	Central	24	24	24	14	14	16	25
Energy tax breaks for agriculture	Central	860	854	829	807	816	817	908
Tax relief for ambulances	Central	4	4	4	2	2	2	5
Fuel tax exemption for shipping	Central	570	542	503	548	488	492	547
Tax relief for users living in disadvantaged areas	Central	62	62	62	62	233	231	231

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Table 18.2. Summary of fossil-fuel support to natural gas - Italy

(Millions of EUR, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Consumer support								
Tax relief for industrial users of natural gas	Central	89	89	89	60	60	60	60

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Chapter 19.

JAPAN

This chapter identifies, documents, and provides estimates of the various budgetary transfers and tax expenditures that relate to the production or use of fossil fuels in Japan. An overview of the country's energy economy is first given to place the measures listed into context. A data-documentation section then describes those measures in a systematic way. Whenever possible, the description details a measure's formal beneficiary, its eligibility criteria and functioning, and the fuels whose production or use stand to benefit from the measure. The chapter ends with a set of tables that provide, subject to availability, quantitative information and estimates for the various measures listed.

Energy resources and market structure

Japan has negligible fossil-energy resources and relies almost entirely on imported fuels and domestically produced nuclear power. The energy mix is reasonably well diversified. Oil is the leading fuel, accounting for 41% of total primary energy supply. Coal provides just under one-fifth, while nuclear power and natural gas contribute about 15% and 17% respectively. Renewables and combustible waste together account for the remaining 3%. The share of oil has fallen steadily since the 1970s, largely in favour of nuclear power and natural gas, virtually all of which is imported as LNG. Only 16% of the country's energy needs are met from indigenous sources (including nuclear power). Japan is the third-largest oil consumer in the world behind the United States and China, the third-largest net importer of crude oil and the largest importer of both LNG and coal.

Japan's energy sector is dominated by private, domestic companies, with public-sector ownership largely limited to some municipal gas and electricity utilities, most of which are small. Oil exploration and development are conducted by private-sector companies with the support of the Japan Oil, Gas and Metals National Corporation (JOGMEC) — a government agency set up in 2004 to, among other things, promote exploration and development of oil and natural gas deposits for use in Japan, taking over part of the operations of the now-defunct Japan National Oil Corporation (JNOC). New companies were formed out of the rest of JNOC's assets, including Inpex and Japex, and were then privatised, though the Japanese government maintains a small equity stake in each firm. All of Japan's oil refineries are privately owned. Distribution of oil products is conducted solely by private-sector companies, including foreign companies. The latter's share of the market has grown in recent years with the easing of regulatory restrictions.

The natural gas industry is also largely in private hands. The majority of gas is imported by Japan's electricity companies for power generation. These utilities, and some large industrial users, import their gas independently from the city gas industry. Electric utilities also supply LNG to other new entrants to the gas market. The city gas industry is fragmented into more than 200 vertically integrated regional companies, the bulk of which are privately owned. The four major gas utilities — Tokyo Gas, Osaka Gas, Toho Gas and Saibu Gas — supply about three-quarters of the total gas market. There are also over 1 600 small, community gas utilities. Although most pipelines in Japan are owned by gas utilities, some power utilities and domestic gas producers own pipelines as service providers.

Japan's electricity sector is comprised of ten vertically integrated electricity utilities (VIUs) covering all the geographic regions of Japan, one large wholesale supplier, J-Power, and numerous other wholesale suppliers, municipal utilities and auto-generators. The biggest generators are Tokyo Electric Power Company (TEPCO), Kansai, Chubu, Kyushu, Tohoku and J-Power.

Market reforms have been implemented progressively in the Japanese gas and electricity sectors since the mid-1990s, though at a slow pace compared with most other OECD countries. At present, around 60% of both markets have been liberalised, i.e. sales to final consumers who are free to choose their supplier. But actual switching rates remain very low, especially among medium-sized customers. There are some legal requirements on VIUs to unbundle their networks and system operation from other activities, but full structural unbundling is not required. Responsibility for governance of the electricity and gas sectors lies with the Ministry of Economy, Trade and Industry (METI); the Electric Power System Council of Japan (ESCJ) — an independent, private and non-profit body made up of the VIUs, independent power producers and suppliers (PPS), other wholesale electricity companies and representatives from the academic world — is responsible for establishing rules for access to the transmission grid and to enhance market transparency.

Prices, taxes and support mechanisms

There are no price controls on oil products or coal in Japan. Electricity and gas prices in the non-liberalised sector are regulated, as are network charges to suppliers in the liberalised sector. All fuels and energy services are subject to a general consumption tax (akin to a value-added tax) at a flat rate of 5% (4% national, and 1% prefectural), as well as excise and other taxes at different rates according to the fuel.

Table 19.1. Energy-related taxes in Japan, 2001 and 2009

Fuel	Formal incidence	Units	2001	2009	Exemptions
Tax on unleaded gasoline	National gasoline tax	per litre	48.6	48.6	Aviation, diplomats, heating, gasoline used as solvent
	Local gasoline tax	per litre	5.2	5.2	
Delivery tax	Light oil	per litre	32.1	32.1	Agriculture, forestry, fishing, mining.
LPG tax	LPG used for transport	per kg	17.5	17.5	Exports; LPG used as heating fuel or in manufacturing.
Petroleum and coal tax	Natural gas and imported LPG	per kg	0.72	1.08	Exports; fuel oil used in agriculture, forestry or fishing; naphtha and gaseous hydrocarbons used as raw materials for production of petrochemicals and ammonia.
	Crude oil, imported petroleum products	per litre	2.04	2.04	
	Coal	per kg	—	0.70	
Aviation fuel tax	Domestic use	per litre	26	26	Central and local governments, international air transport
Power-resource development tax	Sales of electricity	per kWh	0.445	0.375	None

Source: OECD, *Environmental Performance Review – Japan*, OECD Publications, Paris, November 2010, based on data from the Government of Japan.

A petroleum and coal tax is levied on sales of oil products, natural gas and coal in Japan (Table 19.1). Gasoline, diesel fuel, and LPG are subject to additional, specific excise taxes; a local road tax is also levied on gasoline, the revenues from which are used to finance road construction and maintenance.[1] In the case of diesel fuel, the consumption tax is applied to the price before a delivery tax is added. Domestic aviation fuel is also taxed to finance airport construction. Electricity sales to households and businesses carry a Power Source Development Tax, which is intended to finance measures to support new sources of power generation, nuclear power research and development and other activities. Tax rates on fossil fuels have remained unchanged in nominal terms since 2001, except for crude oil, natural gas, LPG, and coal. Exemptions apply to many end uses.

The government funds directly the costs of maintaining publicly owned emergency oil stocks, which are managed by JOGMEC. There is no levy on oil sales or on the oil industry to cover these costs.

Japan has long been a world leader in energy research and development. The government provides direct and indirect support to this activity, which is seen as a vital element in increasing the country's energy security and reducing carbon-dioxide emissions. Direct public spending on energy research as a percentage of its GDP is the largest in the OECD. The bulk of this funding goes to nuclear power.

1 Revenues from the national gasoline tax were also used to finance road construction and maintenance until FY2008.

Data documentation

General notes

The Japanese fiscal year runs from 1 April through 31 March of the following year. Following OECD convention, fiscal-year data are assigned to the closest calendar year; hence data covering the period April 2009 through March 2010 are reported as "2009" in the database.

Producer Support Estimate

Price Support on Sales to Electricity and Non-Ferrous Industries (data for 1982-1999)

For many years, large Japanese consumers of domestic thermal coal paid a price for that coal well above the world market price.

The value of the associated transfer was estimated by the IEA by multiplying the quantity of domestic thermal coal consumed (expressed in thermal-equivalent terms) by the difference between the imported thermal-coal price (obtained from customs statistics) and the average delivered price of domestic thermal coal delivered to electric power stations. We allocate the full value of the transfer to bituminous coal.

Sources: IEA (1988), IEA (various years).

Tag: JPN_dt_05

Price Support on Sales to Steel and Coke Industries (data for 1982-1990)

For many years, through 1990, large Japanese consumers of domestic coking coal paid a price for that coal well above the world market price.

The value of the associated transfer was estimated by the IEA by multiplying the quantity of domestic coking coal consumed (expressed in thermal-equivalent terms) by the difference between the imported coking-coal price (obtained from customs statistics) and the average delivered price of domestic coking coal delivered to steelmakers. We allocate the full value of the transfer to bituminous coal.

Sources: IEA (1988), IEA (various years).

Tag: JPN_dt_06

Grants for Modernising Coal Pits (data for 1982-1999)

These grants were given generally to help improve the efficiency and general working conditions in underground mines.

We allocate the value of the grants entirely to bituminous coal.

Sources: IEA (1988), IEA (various years).

Tag: JPN_dt_01

Grants for Stabilising the Coal Industry (data for 1982-1999)

These were given generally to help stabilise individual coal-mining companies' accounts, thereby smoothing contraction of the industry.

We allocate the value of the grants entirely to bituminous coal.

Sources: IEA (1988), IEA (various years).

Tag: JPN_dt_02

Grants to Improve Safety Conditions (data for 1982-1999)

These grants were given to coal-mining companies' to help them finance safety improvements in underground mines.

We allocate the value of the grants entirely to bituminous coal.

Sources: IEA (1988), IEA (various years).

Tag: JPN_dt_03

Grants for Paying Off Interest on Loans (data for 1987-1997)

These grants were given to coal-mining companies to help them meet the interest charges on loans used to finance stockpiles of surplus coal.

We allocate the value of the grants entirely to bituminous coal.

Sources: IEA (1988), IEA (various years).

Tag: JPN_dt_04

Natural-Gas Exploration Subsidy (data for 2007-)

This measure aims at promoting natural-gas exploration by mining companies.

Sources: IEA (2008), OECD.

Tag: JPN_dt_11

Oil-Prospecting Subsidy (data for 2007-)

This measure supports geological surveys abroad.

Sources: IEA (2008), OECD.

Tag: JPN_dt_12

Oil-Refining Rationalisation Subsidy (data for 2007-)

This programme assists the development of advanced oil-refining technologies.

Sources: IEA (2008), OECD.

Tag: JPN_dt_13

Oil Product Quality Assurance Subsidy (data for 2007-)

This measure supports the analysis of petroleum products and development of analytical techniques.

Sources: IEA (2008), OECD.

Tag: JPN_dt_14

Large-Scale Oil Disaster Prevention Subsidy (data for 2007-)

This programme supports the construction and maintenance of oil fences and their transport in emergencies.

Sources: IEA (2008), OECD.

Tag: JPN_dt_15

Consumer Support Estimate

Promotion of Natural-Gas Use Subsidy (data for 2007-)

This programme helps private firms convert coal-burning facilities to natural gas-burning ones.

Sources: IEA (2008), OECD.

Tag: JPN_dt_16

General Services Support Estimate

Regional Aid to Coal-Mining Districts (data for 1982-1999)

These grants were intended to help general economic development in depressed coal-mining districts.

We allocate the value of the grants entirely to bituminous coal.

Sources: IEA (1988), IEA (various years).

Tag: JPN_dt_07

Grants for Worker Retraining (data for 1982-1999)

These grants helped to pay for the retraining of coal miners made redundant by reductions in coal output.

We allocate the value of the grants entirely to bituminous coal.

Sources: IEA (1988), IEA (various years).

Tag: JPN_dt_08

Grants to Offset Costs of Closing Collieries (data for 1982-1999)

These refer to payments made to workers who were made redundant as a result of the closing of coal mines.

We allocate the value of the grants entirely to bituminous coal.

Sources: IEA (1988), IEA (various years).

Tag: JPN_dt_09

Grants to Help Pay for Subsidence Damage (data for 1982-1999)

These grants were given to the Coal Mine Damage Corporation for the purpose of dealing with the restoration of environmental damage arising from coal mining undertaken in the past.

We allocate the value of the grants entirely to bituminous coal.

Sources: IEA (1988), IEA (various years).

Tag: JPN_dt_10

Subsidy for Oil-Refining Technology Programmes (data for 2007-)

This measure promotes joint research with oil-producing countries on oil-refining technologies.

Sources: IEA (2008), OECD.

Tag: JPN_dt_17

Subsidy for Structural Reform Measures (data for 2007-)

This programme assists business diversification and other structural reform measures by oil distributors.

Sources: IEA (2008), OECD.

Tag: JPN_dt_18

Sources

Policies or transfers

IEA (various years), *Coal Information*, OECD Publishing, Paris.

IEA (1988) *Coal Prospects and Policies in IEA Countries: 1987 Review*, OECD Publishing, Paris.

IEA (2008) *Energy Policies of IEA Countries: Japan 2008 Review*, OECD Publishing, Paris.

Energy statistics

IEA (2011), *Energy Balances of OECD Countries*, International Energy Agency, Paris.

Table 19.2. Summary of fossil-fuel support to petroleum - Japan

(Millions of JPY, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Producer support								
Support for intermediate inputs								
Large-scale oil disaster prevention subsidy	Central	..	..	800	..	777	710	710
Support for knowledge creation								
Oil product quality assurance subsidy	Central	..	..	1898	..	1700	1650	1650
Oil-refining rationalisation subsidy	Central	..	..	12457	..	10942	9597	9597
Oil prospecting subsidy	Central	..	..	1812	..	1101	301	301
General services support								
Subsidy for structural reform measures	Central	..	..	12442	..	15207	9194	9194
Subsidy for oil-refining technology programmes	Central	..	..	9925	..	10761	11857	11857

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Table 19.3. Summary of fossil-fuel support to natural gas - Japan

(Millions of JPY, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Producer support								
Support for capital formation								
Natural-gas exploration subsidy	Central	..	..	907	..	800	400	400
Consumer support								
Promotion of natural-gas-use subsidy	Central	..	..	6005	..	700	124	124

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Chapter 20.

KOREA

This chapter identifies, documents, and provides estimates of the various budgetary transfers and tax expenditures that relate to the production or use of fossil fuels in Korea. An overview of the country's energy economy is first given to place the measures listed into context. A data-documentation section then describes those measures in a systematic way. Whenever possible, the description details a measure's formal beneficiary, its eligibility criteria and functioning, and the fuels whose production or use stand to benefit from the measure. The chapter ends with a set of tables that provide, subject to availability, quantitative information and estimates for the various measures listed.

Energy resources and market structure

Korea has minimal fossil-fuel resources and imports all but 1% of its coal supplies, 1% of its oil and 1% of its natural gas. Korea is the world's second-largest importer of liquefied natural gas (LNG) after Japan, and is the fifth-largest importer of oil. The country relies heavily on fossil energy, with oil accounting for 38% of primary energy supply, coal 29% and gas 15%. Nuclear power accounts for 16% and renewables for the rest. The share of oil has fallen sharply over the last decade, as supplies of coal, gas and nuclear power have increased. Overall, over 85% of Korea's energy is imported, even treating nuclear power as indigenous production (all its uranium fuel needs are imported).

There is significant state ownership in Korea's energy industry. While the downstream oil industry and coal mining have been largely privatised, the gas, electricity and district heating sectors remain primarily under public ownership. The state-owned Korea National Oil Corporation (KNOC) is responsible for Korea's strategic oil reserves, as well as for the exploration, development and production of oil and natural gas within and outside of the country. Private companies dominate refining, wholesale imports, distribution and retailing. The leading oil companies are SK, GS Caltex, S-Oil, and Hyundai Oil Bank.

Five of the country's eight anthracite mines (all bituminous coal is imported) are privately owned. The remaining three mines are run by the state-owned Korea Coal Corporation (KCC), which is also responsible for managing the supply of domestic anthracite and supporting the development of the domestic coal market, including the workforce and new technologies. Private-sector and other government-owned companies import coal from the world market for their own needs directly or through a private intermediary, mostly under medium- or long-term contracts. In support of the government's policy of developing overseas energy projects, private Korean companies and the Korea Resources Corporation (KORES) are currently involved in more than a dozen overseas bituminous-coal projects.

The Korea Gas Corporation (KOGAS), a state-owned and operated company, holds a monopoly on natural-gas imports, transmission and wholesale supply, though some companies are allowed to import gas directly for their own use. The retail market is made up of more than 30 city gas companies. The central government oversees the wholesale market; local governments and provinces oversee the retail market. Moves to privatise and deregulate the sector and open up the wholesale and retail markets to competition have largely stalled.

Korea's electricity industry is dominated by the Korea Electric Power Corporation (KEPCO), a 50% state-owned vertically integrated utility. In 2001, KEPCO was reorganised into six power-generation subsidiaries (gencos): Korea Hydro and Nuclear Power (KHNP), which owns the nation's nuclear plants and large hydroelectric dams, and five companies with thermal generation assets. KEPCO also retained the national transmission and distribution grids. At the same time, a power market, the state-owned Korea Power Exchange (KPX), was established. Currently the six power-generation companies, which control about four-fifths of capacity, and independent producers sell their output into a power pool, while KEPCO is the sole buyer. Plans in the early 2000s for the five thermal-generation companies to be privatised have been shelved. The state-owned Korea District Heating Corporation (KDHC) supplies about 60% of all heat sales in Korea; the rest of the market is supplied by around 20 other companies, approximately 15% of which are privately owned.

Prices, taxes and support mechanisms

The wholesale and retail prices of oil and bituminous coal are completely deregulated. The wholesale prices for domestically-produced anthracite coal and briquettes are set by the government as part of a subsidy to support uneconomic mining. Gas and heat prices are controlled directly by the Ministry of Commerce, Industry and Energy (MOCIE). The Korea

Electricity Commission (KOREC), a quasi-autonomous body within MOCIE, is responsible for regulating KPX and final electricity prices. Final decisions are made by MOCIE following the rulings or deliberations of KOREC; in practice, the minister does not usually overrule KOREC.

Korea imposes import duties on crude oil and refined products; the latter are taxed more heavily, providing a tax advantage for Korean refineries relative to product importers. Bituminous-coal imports also carry a duty. A flat-rate VAT of 10% is levied on all sales of fuels and energy services. Excise taxes are levied on oil products and gas sales to both households and businesses; transport fuels are also subject to additional taxes, including an education tax and an array of transport taxes (so-called traffic, energy, and environmental taxes).

Government support to fossil-energy production concerns mainly coal. Support to producers of anthracite coal has been in place for several decades, involving price support, subsidies for acquiring capital equipment, subsidies for exploration, and support of a more general nature. The price-support component was repealed at the end of 2010. Direct investments made by the government and public funding related to research and development by KCC and KORES were halted earlier. The government also provides support for the production of anthracite briquettes, mainly by setting prices below costs (to protect low-income households) and paying the difference to producers. Support is due to be phased out progressively and terminated by the end of 2020, though a scheme to provide vouchers to subsidise consumption is expected to be expanded to offset the impact of higher prices.

The government is also planning to introduce funding for a project to develop clean-coal technologies that is planned by SK Energy (Korea's largest oil refiner) and Pohang Iron and Steel Co (a domestic steel maker). The government already provides funding for research and development projects related to exploration technologies for oil and other mineral resources, as well as to integrated coal gasification combined-cycle (ICGCC) technology as part of its renewable-energy research programme. The Korean government also encourages private exploration and production overseas through tax benefits and the extension of credit lines to domestic companies by the Korea Export-Import bank.

Consumer support concerns mainly excise-tax exemptions for various fuels and categories of consumers. These include exemptions for farmers, fishing boats and certain types of coastal passenger ships from the various taxes that are usually levied on sales of oil products; exemptions on sales of anthracite coal and briquettes from VAT (as well as price controls as described above); and grants to disabled persons and so-called "state meritorious persons" to cover increases in fuel prices since 2001.

Data documentation

General notes

The fiscal year in Korea coincides with the calendar year.

Producer Support Estimate

Support to Coal Mining (data for 1989-)

The Korean government has been providing support to producers of anthracite coal for several decades. This support is usually provided in many different ways and reporting a complete breakdown would not be practical. For that reason, several measures are here bundled together under the same general heading of "Support to Coal Mining." This includes various forms of support such as price support, subsidies for acquiring capital equipment, subsidies for exploration, and support of a more general nature. Note that the

price-support component was repealed at the end of 2010as mentioned in Korea's last submission to the G-20 in the context of the 2009 Pittsburgh commitment to phase out fossil-fuel subsidies.

We aggregate the available data under this general heading by category of statutory incidence (output returns, capital, enterprise income, and knowledge). "Direct Support" thus includes bounties, deficiency payments, and subsidies covering freight costs. The "Capital and Facilities" category comprises support for mining enlargement, tunnelling, mining mechanisation, and acquisition of safety facilities. "Government Injection" refers to investments made directly by the government, and "Research Fund" contains funding related to company-specific R&D—the two beneficiaries were Korea Coal Corporation and Resources Corporation—and exploration. Support provided through the last two categories (government injection, R&D, and exploration) stopped earlier than 2009.

We allocate all the measures mentioned above to anthracite coal.

Sources: MIRECO (various years).

Legal Sources: Price Stabilisation Act, Article 2, Coal Industry Act, Article 29.

Tag*:* KOR_dt_07 to KOR_dt_10

Support to Briquette Production (data for 1989-)

Support to the production of coal briquettes in Korea is provided in many different ways and reporting a complete breakdown would not be practical. For that reason, several measures are here bundled together under the same general heading of "Support to Briquette Production". These various measures involve mostly the subsidisation of manufacturing costs and freight costs incurred by briquette producers. Support is expected to be phased out progressively and terminated by the end of 2020 as indicated in Korea's last submission to the G-20 in the context of the 2009 Pittsburgh commitment to phase out fossil-fuel subsidies.

Sources: MIRECO (various years).

Tag: KOR_dt_13

Funding for Clean-Coal R&D (no data available)

SK Energy (Korea's largest oil refiner) and Pohang Iron and Steel Co (a domestic steel maker) are planning to develop jointly clean-coal technologies at a total cost of KRW 3 350 billion (about USD 2.9 billion). The two companies envisage developing a manufacturing process for synthetic natural gas and the production of synthetic crude oil. The Korean government is to provide funding for KRW 25 billion (USD 21.6 million) in support of these initiatives.

No data are available yet given the recent nature of the project.

Sources: KETEP (2009).

Consumer Support Estimate

Fuel-Tax Exemption for Agriculture (data for 2004-)

This tax provision was introduced in 1986. It exempts farmers from the various taxes that are usually levied on sales of petroleum products in Korea. The country's end-user price for motor fuels comprises several layers of taxes such as the regular VAT (10%), the education tax, and an array of transport taxes (the so-called traffic, energy, and

environmental taxes). In the case of heavy oil, kerosene, and LPG, an "individual consumption" tax is levied in lieu of the transport taxes.

Because a breakdown by type of tax could not be found, we report the exemptions for agriculture as a single measure under the general heading of "Fuel- Tax Exemption for Agriculture". Fuel-specific data were, however, available so that no further manipulation proved necessary. Year coverage becomes consistent starting in 2004 with only the years 1990, 1995, and 2000 being available before that.

Sources: MIFAFF (various years).

Legal Sources: Restriction of Special Taxation Act, Article 106-2.

Tag: KOR_te_01

Fuel-Tax Exemption for Fisheries (data for 2004-)

This measure dates back to 1972 and is similar to the fuel-tax exemption benefitting agriculture (see "KOR_te_01"), except that it was seemingly introduced earlier and that it applies to the fisheries sector. Certain coastal passenger ships are also eligible for this exemption provided that fuel is being supplied directly to the Korea Shipping Association.

Because a breakdown by type of tax could not be found, we report the exemptions for fisheries as a single measure under the general heading of "Fuel- Tax Exemption for Fisheries". Fuel-specific data were, however, available so that no further manipulation proved necessary. The amounts reported under this heading do not include the exemption for coastal passenger ships noted above.

Sources: MIFAFF (various years).

Legal Sources: Restriction of Special Taxation Act, Article 106-2.

Tag: KOR_te_02

VAT Exemption for Briquettes (data for 2001-)

The Value-Added Act exempts sales of coal briquettes from the value-added tax, which normally amounts to 10% of the pre-tax sale price in Korea. This exemption was introduced in 1976 and is meant to benefit low-income households through lower prices.

We estimate the cost of this exemption using the revenue-foregone method, meaning that we apply the standard rate of VAT (10%) to the total value of briquettes sold in a given year.

Sources: KEI (2007), KEEI (2010).

Legal Sources: Value-Added Tax Act, Article 12, 1-3.

Tag: KOR_te_03

VAT Exemption for Anthracite Coal (data for 2001-2006)

Sales of anthracite coal in Korea are exempt from the standard rate of value-added tax (10%). This exemption is meant to benefit low-income households through lower prices.

As for the VAT exemption applicable to sales of briquettes, we estimate the cost of this provision using the revenue-foregone method, meaning that we apply the standard rate of VAT (10%) to the total value of anthracite coal sold in a given year. Data are only available for the 2001-06 period.

Sources: KEI (2007), KEEI (2010).

Legal Sources: Value-Added Tax Act, Article 12, 1-3.

Tag: KOR_te_04

Fuel Subsidy for Certain Users (data for 2001-2005)

This measure provides buses, taxis, freight transport, and passenger ships operating in coastal waters with direct grants covering 50% of the increase in the price of fuel between 2001 and 2002, and 100% of the increase that followed 2003. Support is also provided to disabled persons and so-called "State meritorious persons" for the entire price increase since 2001.

Available data allow a distinction to be made between types of fuels and users so that we break the programme into six different items (one for each type of recipient). Estimates are, however, only available for the 2001-05 period.

Sources: KEI (2007).

Legal Sources: Passenger Transport Service Act, Article 43 and 50.

Tag: KOR_dt_01 to KOR_dt_06

General Services Support Estimate

Coal Mining - Inherited Environmental Liabilities (data for 1989-2006)

This general heading covers annual funding dedicated to environmental protection and reclamation of mining areas. Payments seem to have stopped after 2006.

We allocate this measure to the GSSE since it does not increase current production or consumption of coal.

Sources: MIRECO (various years).

Tag: KOR_dt_11

Coal Mining - Inherited Social Liabilities (data for 1989-)

This general heading includes funding for welfare programmes, the treatment of pneumoconiosis (i.e. the so-called "black-lung disease" that affects coal miners), accident compensation insurance, and elementary education and scholarship funds for miners' children. Some support is also provided to alleviate the economic impacts of mine closures.

We allocate this measure to the GSSE since it does not increase current production or consumption of coal.

Sources: MIRECO (various years).

Tag: KOR_dt_12

Funding for CCS and Clean-Fuel R&D (data for 2000-)

The Korean government provides annual funding for R&D activities in relation to carbon capture and storage as well as cleaner fuels, with a heavy focus on clean-coal technologies.

We add this measure to the GSSE since it benefits Korea's coal industry as a whole. It also does not necessarily increase current production or consumption of fossil fuels. We allocate the annual amounts reported in official publications to anthracite, bituminous coal, and sub-bituminous coal on the basis of the IEA's Energy Balances for the power-generation sector.

Sources: KETEP (2009), IEA.

Tag: KOR_dt_16

R&D Funding for Resources Technologies (data for 2000-)

This programme provides annual funding in support of R&D projects connected to exploration technologies for oil and other mineral resources.

We add this measure to the GSSE since it benefits Korea's hydrocarbon sector as a whole. It also does not necessarily increase current production or consumption of fossil fuels. We use production data from the IEA's Energy Balances to allocate the annual amounts reported in official publications to oil and natural-gas extraction.

Sources: KETEP (2009), IEA.

Tag: KOR_dt_17

R&D Funding for Renewable Energy (data for 2000-)

The Korean government contributes to funding R&D projects in relation to Integrated-Gasification Combined-Cycle (IGCC) technologies as part of its renewable-energy research programme.

We add this measure to the GSSE since it benefits Korea's coal industry as a whole. It also does not necessarily increase current production or consumption of fossil fuels. We allocate the annual amounts reported in official publications to anthracite, bituminous coal, and sub-bituminous coal on the basis of the IEA's Energy Balances for the power-generation sector.

Sources: KETEP (2009), IEA.

Tag: KOR_dt_18

Sources

Policies or transfers

Coal Industry Act; Passenger Transport Service Act; Price Stabilisation Act; Restriction of Special Taxation Act, Value-Added Tax Act. Available at: *elaw.klri.re.kr*.

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Energy statistics

IEA (2011), *Energy Balances of OECD Countries*, International Energy Agency, Paris.

Table 20.1. Summary of fossil-fuel support to coal - Korea

(Billions of KRW, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Producer support								
Support to unit returns								
Coal mining direct support	Central	90	58	78	60	24	n.a.	n.a.
Support to briquette production	Central	100	136	139	134	167	102	102
Support for capital formation								
Coal mining capital and facilities	Central	0	0	0	10	11	9	7
Consumer support								
VAT exemption for briquettes	Central	11	13	14	19	21	21	21
VAT exemption for anthracite coal	Central	52	61	..	..	..	..	..
General services support								
Funding for CCS and clean fuel R&D	Central	8	10	15	20	20	20	20
R&D funding for renewable energy	Central	3	14	16	11	1	1	1
Coal mining inherited environmental liabilities	Central	17	17	n.a.	n.a.	n.a.	n.a.	n.a.
Coal mining inherited social liabilities	Central	55	95	123	165	133	131	42

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Table 20.2. Summary of fossil-fuel support to petroleum - Korea

(Billions of KRW, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Consumer support								
Fuel subsidy for certain users - Taxis	Central	509	..	..	..	..	..	..
Fuel subsidy for certain users - Buses	Central	304	..	..	..	..	..	..
Fuel tax exemption for agriculture	Central	1244	1312	1418	1154	1121	1135	1135
Fuel subsidy for certain users - Freight transport	Central	643	..	..	..	..	..	..
Fuel subsidy for certain users - Passenger ships	Central	18	..	..	..	..	..	..
Fuel tax exemption for fisheries	Central	651	707	751	580	732	681	681
Fuel subsidy for certain users - Disabled persons	Central	246	..	..	..	..	..	..
Fuel subsidy for certain users - Meritorious persons	Central	3	..	..	..	..	..	..
General services support								
R&D funding for resources technologies	Central	1	1	1	2	1	1	1

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Table 20.3. Summary of fossil-fuel support to natural gas - Korea

(Billions of KRW, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
General services support								
R&D funding for resources technologies	Central	10	12	12	15	15	15	15

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Chapter 21.

LUXEMBOURG

This chapter identifies, documents, and provides estimates of the various budgetary transfers and tax expenditures that relate to the production or use of fossil fuels in Luxembourg. An overview of the country's energy economy is first given to place the measures listed into context. A data-documentation section then describes those measures in a systematic way. Whenever possible, the description details a measure's formal beneficiary, its eligibility criteria and functioning, and the fuels whose production or use stand to benefit from the measure. The chapter ends with a set of tables that provide, subject to availability, quantitative information and estimates for the various measures listed.

Energy resources and market structure

Luxembourg produces no fossil fuels, refines no petroleum, and half of its electricity is imported. Imported oil accounts for some 58% of its total primary energy supply, followed by natural gas (28%), biofuels and waste (3%), and coal (2%). Net imports of electricity supply 8% of the country's energy needs, and the remaining 1% came from renewable energy sources, mostly hydro-electricity and wind power.

Oil's dominance in Luxembourg's energy supply is explained in large part by sales of diesel fuel and gasoline to foreign drivers—truckers crossing Luxembourg and cross-border commuters—who take advantage of the country's lower excise taxes on these fuels compared with the taxes applied by neighbouring EU Member States. Domestic transport-fuel use in Luxembourg's road transport sector.

Luxembourg meets its minimum oil stockholding obligations as a member of the IEA and the European Union by obliging all oil importers to maintain stocks of petroleum products equivalent to at least 90 days of deliveries into domestic consumption during the previous calendar year. However, some 85% of this storage capacity is located outside of the country. The government is currently considering whether to create a national stockholding agency and to expand domestic storage capacity.

Luxembourg's natural-gas market is dominated by a small number of vertically integrated companies. Creos Luxembourg S.A. (formerly SOTEG) owns and operates the transmission system, and it supplies the majority of the market. Creos also operates one of the two main electricity-transmission systems in the country. The State of Luxembourg and municipalities maintain minority ownership of the company, via direct shareholdings and through the *Société Nationale de Crédit et d'Investissement*. The other main electricity grid operator is the Société *de Transport de l'Electricité* (SOTEL). Some electricity-distribution companies are owned by municipalities.

Prices, taxes and support mechanisms

Luxembourg maintains a price-smoothing mechanism for oil products through a signed agreement with the national oil-industry federation. This mechanism sets a maximum price for oil products sold to the end-consumer, including gasoline, automotive diesel, heating oil, and liquefied petroleum gas (LPG). The pricing formula is based on the published price of oil products (Platt's Antwerp CIF product prices), to which the government adds a standard cost of transport from Antwerp to Luxembourg, a standard distribution margin covering the profits of the importers and the filling stations, and the cost of compulsory storage. These different costs are determined by the government after discussion with the oil companies' association (*Groupement Pétrolier Luxembourgeois*) and the retailers.

Both Luxembourg's natural-gas and electricity markets are regulated by the *Institut Luxembourgeois de Régulation* (ILR), whose responsibilities include monitoring competition and preventing the abuse of dominant position. ILR also sets the calculation method for approved network tariffs and the conditions for access to the network. The ILR is funded by the network operators.

Electricity prices before taxes are higher than in almost any other OECD country, especially for smaller companies and households. These high ex-tax prices are partly explained by the small market size and the large share of costly underground distribution cables.

Luxembourg charges a reduced rate of VAT on coal and coke, and on mineral oil used for heating—12%, compared with the normal VAT of 15%. A lower VAT rate of 6% is applied to motor fuels and to natural gas and LPG used in heating and in industrial and commercial

activities. The government now levies excise duties on diesel at a rate of EUR 0.335 per litre, which is above the EU-mandated minimum levels of taxation on energy products. This puts Luxembourg's excise duties on diesel closer to those of Belgium, France, and Germany (EUR 0.43, EUR 0.43, and EUR 0.47 per litre, respectively), which maintain levels well above the European minimum. Agricultural use of petroleum fuels is exempted from excise tax.

Data documentation

General notes

The fiscal year in Luxembourg coincides with the calendar year. Following OECD convention, amounts prior to 1999 are expressed as "euro-fixed series," meaning that we apply the fixed EMU conversion rate (1 EUR = 40.339 LUF) to data initially expressed in the Luxembourg franc (LUF).

Consumer Support Estimate

Reduced Rate of VAT for Solid Mineral Fuel and Heating Fuel (no data available)

A 12% VAT rate is applied to the supply of coal and coke and mineral oil used for heating in Luxembourg.

No estimates of the revenue foregone due this provision are available.

Sources: Administration des Douanes et Accises (2012), Administration de l'Enregistrement et des Domaines (2012).

Reduced Rate of VAT for Natural Gas and LPG (no data available)

A 6% VAT rate is applied to the supply of natural gas, LPG, and electricity in Luxembourg. From 1 January 2009, heat and wood used for heating have also been subject to this reduced VAT rate.

No estimates of the revenue foregone due this provision are available.

Sources: Administration des Douanes et Accises (2012), Administration de l'Enregistrement et des Domaines (2012).

Reduced Rate of Excise for Certain Uses of Petroleum Fuels (data for 2007-)

Sales of certain petroleum products (diesel fuel and LPG) in Luxembourg are subject to a lower rate of excise duty when used in agriculture, horticulture, or for heating purposes.

We estimate the revenue foregone due to these reduced rates of excise by using data from the IEA's Energy Balances on fuel use in Luxembourg's agriculture and residential sectors. The benchmark rates of excise duty we adopt for estimation purposes are those applying to the use of diesel fuel and LPG in the industrial and commercial sector (EUR 0.021002 per litre for diesel fuel and EUR 0.037184 per kilogram for LPG).

Sources: Administration des Douanes et Accises (2012), IEA.

Tag: LUX_te_01

Excise Tax Exemption for Coal and Natural Gas (no data available)

The use of coal, coke, biofuels used in pure form, and natural gas used as fuel or in co-generation is subject to a zero rate of excise duty.

No estimates of the revenue foregone due this provision are available.

Sources: Administration des Douanes et Accises (2012).

Sources

Policies or transfers

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Administration de l'Enregistrement et des Domaines (2012), *Texte coordonné de la loi du 12 Février 1979 concernant la taxe sur la valeur ajoutée*, Le Gouvernement du Grand-Duché de Luxembourg, Available at: *www.aed.public.lu/tva/loi/index.html*.

Energy statistics

IEA (2011), *Energy Balances of OECD Countries*, International Energy Agency, Paris.

Table 21.1. Summary of fossil-fuel support to petroleum - Luxembourg

(Millions of EUR, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Consumer support								
Reduced rate of excise for certain uses of petroleum fuels	Central	..	..	3	3	4	4	4

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Chapter 22.

MEXICO

This chapter identifies, documents, and provides estimates of the various budgetary transfers and tax expenditures that relate to the production or use of fossil fuels in Mexico. An overview of the country's energy economy is first given to place the measures listed into context. A data-documentation section then describes those measures in a systematic way. Whenever possible, the description details a measure's formal beneficiary, its eligibility criteria and functioning, and the fuels whose production or use stand to benefit from the measure. The chapter ends with a set of tables that provide, subject to availability, quantitative information and estimates for the various measures listed.

Energy resources and market structure

Mexico has substantial resources of oil and natural gas. It is the world's seventh-leading producer of oil, though production has fallen sharply in the last five years or so as a result of declining output at the country's main producing field, Cantarell. Over one-third of Mexico's oil production is exported. Natural gas production has been rising rapidly, but has not kept pace with demand, such that net imports — mainly piped from the United States, but now supplemented by increasing volumes of LNG — have grown from less than a tenth of supply in 2000 to more than one-fifth in 2010. Approximately one-fourth of the country's total primary energy supply is imported. Mexico's energy mix is dominated by oil and gas: oil accounts for 55% of total primary energy supply and natural gas 29%; most of the rest comes from a mixture of coal (half domestically produced and half imported), combustible renewable and waste, and geothermal energy, with a single nuclear plant contributing 1%. The share of oil has continued to fall steadily in recent years, while that of gas has grown briskly. National coal production peaked at 13.8 million tonnes in 2007, and has declined since then. Roughly one-third of the country's total production of energy is exported.

The energy sector is almost entirely run by state-owned companies. The national oil and gas company, Pemex (*Petroleos Mexicanos)*, enjoys a monopoly on hydrocarbons production, oil refining and the marketing of oil products in the country. Pemex is the largest company in Mexico and one of the largest oil companies in the world. It has four operating subsidiaries: exploration and production, gas and basic petrochemicals, petrochemicals, and refining. In 2008, Mexico enacted new legislation that sought to reform the country's oil sector, with the aim of curbing the slide in crude-oil production. The measures included several administrative and institutional changes, including the establishment of a new hydrocarbons agency to regulate the sector. The reforms fell short of opening up exploration and production to competitors, but allow Pemex to create incentive-based service contracts with private companies. Pemex was also granted greater autonomy, including the ability to establish more flexible mechanisms for procurement and investment, and a corporate governance system.

Pemex is also the dominant, but not the sole, company active in natural gas distribution and retailing. The Mexican government opened the downstream gas sector to private operators in 1995, though no single company may participate in more than one industry function (transportation, storage, or distribution). It also created the Energy Regulatory Commission (CRE) to monitor and regulate the sector. Nonetheless, Pemex still operates all the country's high-pressure gas pipelines and all 12 gas-processing plants, as well as most of the country's gas-distribution network. The two LNG import terminals currently in operation in Mexico are owned by foreign companies: Altamira, which started up in 2006, is a joint venture of Royal Dutch Shell, Total and Mitsui, while the Costa Azul terminal, which began receiving LNG in 2008, is operated by Sempra. A third plant is being built at Manzanillo by a consortium of Mitsui, KOGAS, and Samsung.

The structure of the coal-mining industry in Mexico has undergone tremendous change over the last 50 years. The 1961 mining code placed the control of capital in Mexican hands (a process known as the "*Mexicanización*" of the industry). A reform of the code in 1975 opened up foreign investment to a maximum 34% of the share of total capital in coal mines, and the 1992 Mexican Mining Law allowed 100% control of coal-mining properties not only by private Mexican interests, but also by foreign mining companies, subject to a standard concession-based process. Today, the major players in the industry are a mix of Mexican and foreign companies, some subsidiaries of diversified mining conglomerates.

State-owned *Comision Federal de Electricidad* (CFE) is the dominant player in power generation, controlling about two-thirds of installed generating capacity. CFE also holds a monopoly on electricity transmission and distribution. In 2009, CFE absorbed the operations of *Luz y Fuerza del Centro* (LFC), a state-owned company that managed distribution of

electricity in Mexico City. The *Comision Reguladora de Energia* (CRE) has principle regulatory oversight of the electricity sector, but does not have direct jurisdiction over CFE. Changes to Mexican law in 1992 opened the generation sector to private participation. Any company seeking to establish private electricity generating capacity, or begin importing or exporting electric power, must obtain a permit from CRE. Most of the independent power producers operate combined-cycle gas turbines fuelled with natural gas.

Prices, taxes and support mechanisms

Almost all energy prices are controlled in Mexico. The current legal framework, which dates back to 2000, allows the government to set retail prices of gasoline, diesel and LPG. Because of a sustained rise in the international prices for oil and its derivatives, pre-tax prices have been set well below the cost of imports in recent years, generally lagging any rise in import prices, with the government paying Pemex (the monopoly importer) the difference (except for LPG). Excise taxes are levied on transport fuels. VAT is levied on all fuels and energy services to non-commercial consumers.

All electricity tariffs are approved by the Ministry of Finance and Public Credit (SHCP); tariff proposals are prepared by an interagency group composed of the SHCP, CFE, CRE, and the Ministry of Energy (SENER). Average electricity tariffs in Mexico for agriculture and households have generally been held well below average cost, resulting in large subsidies, though – with the exception of the informal agricultural sector – they have trended upwards over the past decade.

The bulk of support to the consumption of fossil fuels in Mexico appears to be provided through tax provisions such as the Excise Tax on Products and Services on Gasoline and Diesel (*Impuesto Especial sobre Producción y Servicios por Enajenación de Gasolinas y Diesel* – IEPS). The IEPS uses a floating rate that varies according to a formula, which is in turn based on international benchmark prices for gasoline and diesel. When this international price is high, the rate of IEPS becomes negative so that domestic prices fall below the opportunity cost of gasoline and diesel. Conversely, a lower international price triggers an increase in the rate of IEPS, which increases tax revenues. In addition, there are certain fuel-tax credits available for the agriculture and fisheries sectors, for commercial vessels, for passenger and cargo transportation, and for certain uses of diesel for other purposes than in a vehicle. However, these tax credits apply only when the rate of IEPS is positive, with most of them benefitting diesel fuel.

Data documentation

General notes

The fiscal year in Mexico coincides with the calendar year.

Consumer Support Estimate

Diesel Tax Credit for Passenger and Cargo Transportation (data for 2003-)

This measure provides a tax credit applicable to purchases of diesel fuel to support the private and public transportation of passengers or cargo through roads and highways. As with similar measures in Mexico, this provision only applies when the rate of IEPS is positive (see "Prices, taxes and support mechanisms" above).

A similar measure applied to purchases of both Magna and Premium types of gasoline, but not to unmarked gasoline, which has been the sole type of gasoline used in Mexico. As a consequence, this measure for gasoline did not benefit any users; it was eliminated in March 2012.

Sources: Secretaría de Hacienda y Crédito Público (various years).

Tag: MEX_te_02

Tax Credit for Marine Diesel (data for 2002-)

This measure provides a tax credit to final consumers of "marine" diesel fuel. The credit applies mostly to commercial shipping and related activities. As with similar measures in Mexico, this provision only applies when the rate of IEPS is positive (see "Prices, taxes and support mechanisms" above).

Sources: Secretaría de Hacienda y Crédito Público (various years).

Tag: MEX_te_03

Tax Credit for Purchased Diesel for Machinery (data for 2003-)

This tax credit targets the end use of diesel fuel in general machinery, with the exception of vehicles. Eligible uses include most commercial activities (with the notable exception of mining) and certain marine vehicles. As with similar measures in Mexico, this provision only applies when the rate of IEPS is positive (see "Prices, taxes and support mechanisms" above).

Sources: Secretaría de Hacienda y Crédito Público (various years).

Tag: MEX_te_04

Fuel-Tax Credit for Agriculture and Fisheries (data for 2003-)

This measure provides the agriculture, forestry, and fisheries sectors with a fuel-tax credit on their purchases of diesel fuel for final use in general machinery, with the exception of vehicles, regardless of the prevailing rate of IEPS.

Sources: Secretaría de Hacienda y Crédito Público (various years).

Tag: MEX_te_05

Negative Excise Tax on Products and Services for Gasoline and Diesel (data for 2007-)

This measure provides for a price-setting mechanism that considers differences in the domestic price for petroleum products and an international reference price (i.e. the benchmark price). While the prices for gasoline and diesel vary almost daily in the international market, retail prices in Mexico are set by the federal government on a monthly basis.

When the benchmark price is high, and greater than the domestic price, the rate for the country's excise tax becomes negative. Pemex—the national oil company—then obtains a compensatory tax credit equivalent to the price difference, which the company can credit against other taxes such as its own value-added tax or the "Ordinary Duty on Hydrocarbons Production" (*Derecho Ordinario sobre Hidrocarburos*, a production tax on hydrocarbons).

Sources: Secretaría de Hacienda y Crédito Público (various years).

Tag: MEX_te_06

Implicit Subsidy on LP Gas (data for 2003-)

Since 2003, the domestic price of LPG in Mexico has been controlled by the government and fixed below its opportunity cost (i.e. international reference price, plus transport and internment costs). The resulting difference between this opportunity cost and the prevailing domestic price is absorbed by the balance sheet of Pemex, the national oil company.

Sources: Pemex, *Fourth Quarter Financial Report* (various years).

Tag: MEX_te_07

Sources

Policies or transfers

Secretaría de Hacienda y Crédito Público (various years) *Presupuesto de Gastos Fiscales*, Government of Mexico, Available at: *www.shcp.gob.mx/INGRESOS/Paginas/presupuestoGastos.aspx*.

Pemex (various years), *Reporte de resultados de Petróleos Mexicanos, Organismos Subsidiarios y Compañías Subsidiarias*, Petroleos Mexicanos, Available at: *www.ri.pemex.com/index.cfm?action=content&sectionid=14&catid=12146*.

Table 22.1. Summary of fossil-fuel support to petroleum - Mexico

(Millions of MXN, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011
Consumer support								
Negative excise tax on products and services on gasoline and diesel	Federal	..	..	42694	195504	5649	67348	169000
Diesel-tax credit for passenger and cargo transportation	Federal	0	0	0	0	3048	0	0
Fuel-tax credit for agriculture and fisheries	Federal	122	0	1137	1078	102	52	135
Tax credit for purchased diesel for machinery	Federal	1452	0	0	0	465	0	0
Tax credit for marine diesel	Federal	223	0	0	0	86	0	0
Implicit subsidy on LP gas	Federal	4671	5114	10311	26197	6711	24157	40000

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic.

Chapter 23.

NETHERLANDS

This chapter identifies, documents, and provides estimates of the various budgetary transfers and tax expenditures that relate to the production or use of fossil fuels in the Netherlands. An overview of the country's energy economy is first given to place the measures listed into context. A data-documentation section then describes those measures in a systematic way. Whenever possible, the description details a measure's formal beneficiary, its eligibility criteria and functioning, and the fuels whose production or use stand to benefit from the measure. The chapter ends with a set of tables that provide, subject to availability, quantitative information and estimates for the various measures listed.

Energy resources and market structure

The Netherlands has substantial but dwindling resources of natural gas, having been a major producer and exporter of gas to the rest of Europe since the super-giant Groningen field — the 11th largest ever discovered and the fourth-largest by peak production — was first developed in the early 1960s. Production has been in decline for several years, as Groningen edges closer to exhaustion and as smaller fields are reaching maturity. Oil resources are smaller, with output meeting only two-thirds of the country's own needs (additional volumes of crude oil are imported and refined for export markets). Unsurprisingly, gas is the single largest fuel in the Dutch primary energy mix, in 2010 it accounted for about 47% of the country's energy use, closely followed by oil (37%). Coal contributes about 10%, with the remainder coming from a mixture of nuclear power (from one reactor) and renewables (mainly biomass and wind power). In total, indigenous production meets over four-fifths of the country's primary energy needs.

For the most part, the Dutch energy industry is in private hands, but there is significant ownership of assets by the state, the provinces and municipalities in the gas and electricity sectors. The upstream oil and gas industry is entirely private and liberalised. NAM, owned jointly by Shell and ExxonMobil, operates Groningen and is, hence, the largest gas producer; several other oil and gas producers operate small fields onshore and offshore in the North Sea. All the refineries and distribution and retailing networks are privately owned.

Gasunie, a wholly state-owned company, owns and operates the gas transportation network through its affiliate Gas Transport Services (GTS). A trading and supply company, GasTerra, which is half owned by the state (10% directly and 40% through EBN, a state-owned company) and half by Shell and Exxon (25% each), sells domestically produced gas in the Netherlands. It is the major player in the wholesale market, with a share of nearly 60%. Four supply companies – Essent, Eneco, Nuon and Delta, which are mainly owned by provincial and municipal governments – dominate the retail market. Under a 2006 law mandating ownership unbundling of distribution companies, distribution assets must be fully separated from supply activity, and cannot be sold to private companies or investors. Gas competition is well developed, with a relatively large proportion of small consumers having switched away from the incumbent suppliers, in contrast with the situation in most other EU countries.

Electricity generating assets are partly privately owned and partly owned by provincial or municipal governments. Some major players have been overtaken by foreign energy companies over the last years. These foreign energy companies are partly or wholly owned by other states. The five largest generators – Electrabel, Essent, Nuon, E.ON Benelux and Delta – together hold more than two-thirds of installed capacity. Most of the remaining capacity is in combined heat and power plants operated by industrial firms, municipalities and the horticultural sector. The country's transmission system operator, TenneT, is fully owned by the state. There are more than 30 supply companies, of which the largest are Essent, Nuon and Eneco. The fourth-largest, Oxxio, was first owned by the UK firm, Centrica, but it has been taken over by Eneco.

Prices, taxes and support mechanisms

There are no wholesale or retail price controls on any fuel or energy service in the Netherlands. However, a so-called safety net exists for retail electricity and gas prices. The national regulator, the Office of Energy Regulation (Energiekamer) within the Competition Authority, is responsible for approving all tariffs and for ensuring that prices charged to consumers are reasonable; where this is not the case, the regulator can impose a tariff on the supplier, though this has never been necessary in practice.

In addition to VAT, excise taxes and a special compulsory storage fee (COVA) are levied on the sale of oil products, and an energy tax is levied on the supply of electricity and gas (with tax rates decreasing with the level of consumption). As in many other countries, jet fuel is exempt from excise taxes when it is used for the purpose of commercial air navigation. There are some tax breaks aimed at encouraging exploration and production of hydrocarbons. For example, in order to promote the development of offshore marginal gas fields, a 25% deduction of investment costs can be applied to the calculation of the base for royalties.

Data documentation

General notes

The fiscal year in the Netherlands coincides with the calendar year.

Producer Support Estimate

The taxes and fees that apply to exploration and production of oil and gas are described in the 2003 Mining Act. Profits from production of hydrocarbons are subject to a 25.5% corporation tax (*Vennootschapsbelasting*) rate and royalty payments (*Winstaandeel*) at a 50% rate. These payments are, however, reduced by a cost uplift that allows for an extra 10% of the costs to be deducted from the income for royalty purposes.

Small Fields Policy (no data available)

This measure was introduced in 1974 to encourage gas producers to exploit small fields. Many such fields have been discovered in the Netherlands since the 1970s. Their volume is about a third of the super-giant Groningen field, which acts as a 'swing producer', balancing fluctuations in supply and demand in the gas market.

The *1998 Gas Act* stipulates that the trading and supply company, Gas Terra, must act as a guaranteed buyer of gas from small fields. Although gas companies can sell their output from small fields to other parties, Gas Terra has an obligation to immediately buy their gas at the prevailing market price. Gas Terra thus removes all uncertainties related to demand. Since Gas Terra is half-state-owned, this purchase agreement constitutes a measure encouraging exploration and production of gas.

No estimates are available for this item.

Sources: Gas Act (1998), Small Fields Policy.

Aid for Exploration of Offshore Marginal Gas Fields (no data available)

This measure provides a deduction from the base for calculating royalty payments to gas companies that explore offshore marginal (i.e. insufficiently profitable) gas fields. This policy was approved by the European Commission in 2010. Gas producers exploring offshore marginal gas fields can deduct up to 25% of their investment costs from their profit when calculating their amount of taxable income.

No estimates are available for this item.

Sources: Small Fields Policy.

Consumer Support Estimate

Tax-expenditure estimates between 2001 and 2009 were provided by the Ministry of Finance. All other data estimates come from publicly available government sources.

Reduced Energy-Tax Rate in Horticulture (data for 2001-)

At the introduction of the energy tax in 1996, the government decided to apply a zero energy-tax rate to fuels used in the horticultural sector, under the condition that those benefitting from the scheme would participate in voluntary agreements to improve their energy efficiency. The European Commission approved this exemption until the end of 1999.

In 2000, the exemption was replaced by a tax reduction that was to be diminished over time. In particular, the European Commission stipulated that the reduced energy-tax rate granted to the horticultural sector in the Netherlands had to be raised both in 2002 and 2005 by 10% in comparison with the benchmark, which was the rates of the energy tax that applied to other energy-intensive businesses.

This tax expenditure applies to natural gas (virtually all horticultural enterprises are connected to the natural-gas grids) and, hence, the amount of this tax expenditure is allocated to natural gas only.

Sources: Information on Tax Expenditures: 2009-2011, Information on Tax Expenditures: 2010-2012, Ministry of Finance (various years).

Tag: NLD_te_01

Energy-Tax Rebate for Religious Institutions (data for 2001-2009)

Since 2000, users of buildings that are primarily used for public religious services or for philosophical reflection can apply for a 50% energy-tax rebate for both natural gas and electricity. Those very few religious institutions that are not connected to the natural-gas grids can obtain a partial refund for mineral oils used for heating.

We use the IEA's Energy Balances for the residential sector to allocate the amounts reported in official budget documents to natural gas and electricity. Only those amounts that pertain to natural gas are considered.

Data since 2010 are unavailable.

Sources: IEA, Ministry of Finance (various years).

Tag: NLD_te_02

Energy-Tax Rebate for Non-Profit Organisations (data for 2001-2009)

The 50% energy-tax rebate mentioned above also applies to the heating of buildings of non-profit organisations. The sport sector is (partially) compensated by the Ministry of Health, Welfare and Sport. Since 2006, community buildings used by non-profit organisations for over 70% of the time could also apply for the rebate.

We use the IEA's Energy Balances for the residential sector to allocate the amounts reported in official budget documents to natural gas and electricity. Only those amounts that pertain to natural gas are considered.

Data since 2010 are unavailable.

Sources: IEA, Ministry of Finance (various years).

Tag: NLD_te_03

Differentiated Tax Rate on Gas Oil (data for 2001-)

A differentiated tax rate used to be applied to gas oil, depending on its use. A higher rate applies when it is used as transport fuel. A lower rate applied to uses other than as transport fuel, e.g. when used for heating or in off-road machinery.

This tax expenditure expires at the end of 2012.

Sources: Information on Tax Expenditures: 2009-2011, Information on Tax Expenditures: 2010-2012, Ministry of Finance (various years).

Tag: NLD_te_04

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Table 23.1. Summary of fossil-fuel support to petroleum - Netherlands

(Millions of EUR, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Consumer support								
Differentiated tax rate on gas oil	Central	212	209	221	228	208	222	228

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Table 23.2. Summary of fossil-fuel support to natural gas - Netherlands

(Millions of EUR, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Consumer support								
Energy-tax rebate for religious institutions	Central	4	4	3	4	5	5	5
Energy-tax rebate for non profit organisations	Central	5	6	8	12	16	16	16
Reduced energy-tax rate for horticulture	Central	59	81	78	98	86	83	91

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Chapter 24.

NEW ZEALAND

This chapter identifies, documents, and provides estimates of the various budgetary transfers and tax expenditures that relate to the production or use of fossil fuels in New Zealand. An overview of the country's energy economy is first given to place the measures listed into context. A data-documentation section then describes those measures in a systematic way. Whenever possible, the description details a measure's formal beneficiary, its eligibility criteria and functioning, and the fuels whose production or use stand to benefit from the measure. The chapter ends with a set of tables that provide, subject to availability, quantitative information and estimates for the various measures listed.

Energy resources and market structure

Relative to the size of its market, New Zealand is reasonably well-endowed with fossil-energy resources. It is a net exporter of coal, but imports the lion's share of its oil; natural-gas production is in decline, as the Maui field—the main producing field since the end of the 1970s—nears economic exhaustion, which is forcing down consumption as there are no facilities to import gas. Oil is the leading fuel in the primary energy mix, accounting for about a third of total energy supply, followed by natural gas, with 19%. Renewable sources like geothermal energy, wind, and solar power together supply a further 21%—the second-largest share of geothermal energy in the OECD (after Iceland)—hydropower 12%, coal 9% and biomass 6%. On balance, imports account for only 10% of total energy supply.

Despite pioneering moves to liberalise the energy industry in the 1980s and 1990s, the state retains significant ownership stakes, notably in electricity. The oil industry was liberalised in the 1980s, removing price controls, government involvement in refining, licensing requirements for wholesalers and retailers, and restrictions on imports of refined products. Upstream oil and gas production is dominated by Shell, which operates the Maui field in partnership with Todd Energy through Shell Todd Oil Services. BP, Caltex, Mobil and Z Energy own more than two-thirds of New Zealand's only refinery at Marsden Point; the remaining shares are owned by outside and institutional investors. Together with Gull Petroleum, these companies are responsible for wholesaling and retailing. The natural-gas market was deregulated in the 1980s and 1990s, though the government still holds an interest in downstream retailers through two state-owned enterprises (SOEs), Genesis Energy and Mighty River Power, which have started to move into upstream activities.

Meridian Energy, another SOE, together with Genesis and Mighty River, hold the bulk of power-generation capacity. The SOE, Transpower, is responsible for transmission, while close to 30 companies own and operate local distribution networks. The ownership of distribution companies is a mix of public listings, shareholder co-operatives, community trusts, and local bodies; most are owned by trusts. Distribution and retailing are structurally unbundled and the retail market is completely contestable. There is a high degree of vertical integration between generation and retail activities, with the five main generators controlling almost all retail sales.

Prices, taxes and support mechanisms

There are no price controls on any fuel or energy service in New Zealand. A goods and services tax (GST), which is generally refundable for commercial users, is payable on all fuels and energy services. Gasoline, LPG, and compressed natural gas are subject to excise taxes and various special levies. There are also road-user charges and other fees imposed on commercial diesel vehicles. The government refunds the excise duty and the GST on automotive fuels consumed in certain off-road uses. An Energy Resources Levy is applied to natural gas produced from fields discovered before 1986 and on some opencast coal production. Some tax breaks and royalty reductions were put in place as part of a suite of measures to encourage exploration for new oil and gas reserves (also offshore) but the royalty reductions expired at the end of 2009. There are also special levies on natural gas and electricity to fund safety-related regulatory activities. There are no subsidies on gas or electricity for low-income consumers.

Data documentation

General notes

The fiscal year in New Zealand runs from 1 July to 30 June. Following OECD convention, data are allocated to the starting calendar year so that data covering the period July 2005 to June 2006 are allocated to 2005.

Producer Support Estimate

Tax Deductions for Petroleum-Mining Expenditures[1] *(no data available)*

The current taxation scheme for petroleum extraction has been in place since 1991.[2] It comprises two concessions relating to the treatment of petroleum-mining expenditure. Exploration expenditure is fully deductible in the year in which it is incurred, including expenditure of a capital nature. Qualifying exploration expenditure includes exploratory-well expenditure, prospecting expenditure, and expenditure to acquire an existing privilege, a prospecting permit for petroleum, or an exploration permit for petroleum.

Petroleum development expenditure is deductible in equal amounts over an accelerated seven-year period. Petroleum development expenditure is defined as expenditure incurred by a petroleum miner that directly concerns a permit area, and is for acquiring, constructing, or planning petroleum-mining assets. While income from a petroleum field with a life shorter than seven years may be over-taxed as a result of this provision, income from a petroleum field with a life of more than seven years may end up being under-taxed.

In 2008, a number of additional concessions were granted. Petroleum asset owners have been given the option of using a reserve depletion method for calculating tax depreciation on petroleum development expenditure, in addition to the standard seven-year straight-line option. The reserve depletion options allows for tax recovery of development expenditure to be made in line with the field's production profile. It was introduced to deal with a concern that petroleum miners may be discouraged under the previous regime from investing in projects that have a life span of less than seven years. This option, which applies from 1 April 2008, is not available for fields already in production at 1 April 2008.

Another 2008 amendment allows the deduction for development expenditure to begin from the date at which the expenditure is incurred. Previously this had been only available to offshore petroleum development, with onshore development expenditure deductible only from the date that commercial production starts. This distinction has therefore been removed. Petroleum-mining companies have also been given the ability to deduct any unallocated expenditure when a production well stops producing when a taxpayer is depreciating development expenditure under the reserve depletion method.

The New Zealand government does not collect data on all tax expenditures as the compliance cost of collecting additional data is, in some instances, deemed prohibitive. Uncollected data include the deductions for petroleum mining. The 2010 Tax Expenditure Statement was the first time New Zealand has released tax expenditure data since 1984.

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1 There is also a concessionary tax regime in place for the mining of "specified minerals" such as gold, silver, alumina minerals and silica, whereby a mining company can deduct all exploration and development expenditure in the year in which it is incurred, irrespective of whether or not it is paid for the acquisition of an asset. However, the list of specified minerals *does not* include coal, which is taxed under the same rules as ordinary companies.

2 In the Crown Minerals Act of 1991, petroleum is defined as any naturally occurring hydrocarbon (other than coal), or mixtures of, whether in a gaseous, liquid, or solid state.

Legal Sources: Sections DT 1, DT 5, and EJ 12 of the Income Tax Act of 2007 (*www.legislation.govt.nz/*).

Sources: New Zealand Treasury (various years [a]), AUPEC (2009), McDouall Stuart (2009).

Reduction in Royalty Payments for Petroleum (no data available)

To provide the Crown with a fair financial return, all petroleum exploration and mining permits are granted subject to conditions that require the permit holder to calculate and pay royalties to the Crown.[3] Since 1995 the standard royalty regime for petroleum comprises:

- An *ad valorem* royalty (AVR) component of 5% payable on the basis of either a sales price received or, where there has been no sale or no arm's length sale, the deemed sales price; and
- An accounting profits royalty (APR) component of 20% payable on the difference between revenue received from the sale of products and the costs of extracting, processing and selling those products up to the point of sale.

In respect of an exploration permit, the permit holder is liable to pay only the AVR. For all mining permits with net sales above NZD 1 million, the permit holder is required to calculate for each period for which a royalty return must be provided both the AVR and the APR, and pay whichever is the higher. Typically, AVR is paid in the early years of production as prior costs are netted against revenue and at the end of the field's life, as production falls. APR is typically paid during the peak years of production of non-marginal fields.

In 2004, as part of a suite of measures to encourage exploration for new natural-gas reserves, the government announced that royalty payments would be reduced. In summary, for any discovery made between 30 June 2004 and 31 December 2009, the royalty regime comprised:

- An AVR component of 1% on natural gas and 5% on oil; and
- An APR component of 15% on the first NZD 750 million (cumulative) gross sales from an offshore discovery, the first NZD 250 million (cumulative) gross sales from an onshore discovery, and a 20% accounting-profits royalty on any additional production.

In addition, royalty, prospecting and exploration costs incurred anywhere in New Zealand between 30 June 2004 and 31 December 2009 were made deductible for the purposes of calculating the accounting profits. Outside this time frame, prospecting and exploration costs deductible for the purposes of calculating the accounting-profits royalty are ring-fenced, in that they are limited to the area of the mining permit and preceding exploration permit. As such, the measure no longer applied as of 31 December 2009.

While data on the value of total petroleum royalties received by the government are available, estimates of the revenue forgone as a result of the reduction in royalty payments are not calculated.

Sources: Crown Minerals (2005).

3 Under the Crown Minerals Act 1991, the Crown owns all in-ground petroleum, gold and silver in New Zealand and approximately half of the coal and other mineral resources. It also has jurisdiction of the petroleum and minerals in New Zealand's exclusive economic zone and continental shelf.

Non-Resident Drilling Rig and Seismic Ship Tax Exemption (no data available)

On 1 October 2005, an exemption from income tax on income derived from petroleum exploration and development activities in an offshore permit area in New Zealand by a non-resident company was introduced. The original exemption was for a five-year period, starting at the beginning of the non-resident company's 2005/06 financial year and ending on 31 December 2009. The exemption was, however, recently extended by a further five years to end on 31 December 2014.

Exploration and development activities are here defined as the operation of a ship to provide seismic survey readings or the drilling of an exploratory well or other well. These activities must be undertaken for the purposes of identifying and developing exploitable petroleum deposits or occurrences in an offshore permit area.

This provision was introduced as part of the package announced in June 2004 to boost natural-gas exploration. Prior to this, non-resident drilling-rig operators and seismic-ship operators were taxed on their income derived from New Zealand operations from the first day of their presence in New Zealand, the same as non-residence operators undertaking other activities.[4]

The change means that non-resident offshore rig operators and non-resident operators of seismic survey ships have been exempt from paying company tax on their profits in New Zealand from 2004. The reason for targeting only non-residents is that only non-residents currently provide the types of services covered by the exemption.

Information on the revenue foregone as a result of this policy measure is not available.

Legal Sources: Section CW 57 of the Income Tax Act of 2007 (*www.legislation.govt.nz/*).

Consumer Support Estimate

Motor-Spirits Excise Duty Refund (data for 1997-)

A motor-spirits excise duty is charged in New Zealand on the sale of certain types of fuel to final consumers (currently NZD 0.50524 per litre on gasoline as from 1 August 2012). Taxable fuels include gasoline, LPG, and compressed natural gas (CNG). As of 1 October 2008, all the revenue from this excise duty—along with road-user charges, motor-vehicle registration, and licensing fees—are paid into the National Land Transport Fund and used for road construction and maintenance purposes only. Prior to this date, the government retained a large proportion of the revenue collected from the excise duty charged on gasoline in the general consolidated account.

In general terms, the government allows a refund of the excise duty and the goods and services tax (GST) charged on motor spirits for fuel consumed in off-road usage. Examples of eligible uses would include agricultural vehicles, commercial vessels, and certain licensed vehicles. Refunds are applied for and verified by the New Zealand Transport Agency. Only those applicants meeting legislative and regulative requirements have their refund applications approved.

In addition, provision has been made for the refund of the Accident Compensation Corporation (ACC) Levy for exempted vehicles and for fuel used for commercial purposes (currently NZD 0.099 per litre). The ACC levy was introduced on 1 October 1991 and

4 An exception is provided under some double-tax agreements, whereby non-resident operators are only taxed on their New-Zealand-derived income if they are in New Zealand for longer than 183 days.

goes into the ACC Motor Vehicle Account, which covers the cost of accidents and rehabilitation for victims of accidents. These refunds are automatically added onto the refund of fuel excise duty.

Diesel fuel does not qualify for any refunds since it is not subject to the motor-spirits excise duty. Estimates of the annual fuel-tax refunds are available within the Budget documents. The refunds typically account for around 3 to 4% of the revenue collected through the motor-spirits excise duty.

Under a baseline that considers the motor-spirits excise duty to be a substitute for a road-user fee, exempting motor fuel used off-highway from excise taxes does not constitute a tax expenditure. Under an alternative baseline where all uses of motor fuels are taxed in the same way, an exemption from the motor-spirits excise duty would, however, be considered a tax expenditure. This baseline implicitly assumes that the motor-spirits excise duty is specifically intended to raise general revenue by raising the price of the taxed item, or to reduce externalities associated with the consumption of the fuel, but not the externalities associated with the use of vehicles on highways, or the direct cost of funding the highway system. We adopt this approach here in measuring support for the consumption of fossil fuels in New Zealand.

We allocate the annual amounts reported in budget documents to gasoline and LPG on the basis of the IEA's Energy Balances for the agriculture, fisheries, and commercial services sectors.

Sources*:* New Zealand Transport Agency (2007), New Zealand Treasury (various years [b]), IEA.

Tag: NZL_te_01

Risk-Sharing Agreement with Genesis Energy (no data available)

On 12 August 2004, the New Zealand Government agreed with Genesis Power Limited, a state-owned enterprise, to underwrite its fuel-supply risk in developing a gas-fired electricity generation plant at its Huntly site for up to a maximum of ten years. This government guarantee allowed the company to proceed forward with the project.

This measure is viewed by the government as a one-off agreement to provide certainty in the electricity sector during the transition to the post-Maui environment (see "Energy resources and market structure" above). Under the agreement, the Crown will compensate Genesis in the event it is unable to secure the gas that it needs.

To date, the government has not had to pay any compensation to Genesis under the terms of the deed. Information on the value of the agreement to Genesis is commercially confidential.

Sources*:* Hodgson (2004), New Zealand Treasury (2004).

General Services Support Estimate

Research and Development (data for 1995-)

The New Zealand Government is funding research and development related to energy on a project-by-project basis through its Science & Innovation Group (MSI)—a new agency tasked with missions that were previously under the responsibility of the Foundation for Research, Science and Technology (FRST). GNS Science, a Crown Research Institute, usually provides most of the oil and gas specific research under multi-year programme contracts to MSI (FRST prior to 2011). This work ranges from 'big-picture' research into the tectonic evolution of the New Zealand continent, to detailed laboratory analysis of key

geological and geochemical components of petroleum systems. One of the main goals of the research is to reduce the perceived geological uncertainties for petroleum exploration in New Zealand.

In 2010, New Zealand Petroleum & Minerals (formerly Crown Minerals) contracted GNS Science to deliver a two-year Petroleum Exploration and Geosciences Initiative (PEGI) Project worth NZD 7.8 million. The set of 14 individual but broadly inter-related projects featured a range of evaluation and research focusing on Taranaki, New Zealand's only current commercially producing petroleum region. The initiative was eventually completed by April 2012. Just over half (NZD 4 million) was funded by New Zealand Petroleum & Minerals, with the remaining NZD 3.8 million from GNS using FRST grants. Meanwhile, there appears to be little direct research funding provided for coal.

Estimates of the total annual value of research funding relating to fossil fuels are not directly available, and had to be compiled by adding up the annual allocations of relevant programmes existing in any one year. Starting in FY2010/11, detailed data at the programme-level are not available anymore, and estimates thereafter come from the regular budget documentation. We use here the appropriations as reported for the Ministry of Science and Innovation under the "Energy and Minerals Research" heading. Budget documents indicate that this concerns "research and research applications to improve mineral extraction, improve energy security and to obtain efficient and affordable energy use."

We allocate this programme to the GSSE since it does not necessarily increase current production or consumption of fossil fuels. It also benefits the oil and natural-gas industry as a whole. We use production data from the IEA's Energy Balances to allocate the annual amounts reported in budget documents to oil and natural-gas extraction. Data are not available for the years 2001 to 2003.

Sources: McDouall Stuart (2009), GNS Science (various years), FRST (various years), New Zealand Treasury (various years [b]), IEA.

Tag: NZL_dt_01

Acquisition of Petroleum Exploration Data (data for 2004-)

As part of a suite of measures announced in June 2004, the New Zealand Government committed NZD 15 million over three years (FY2004/05 to FY2006/07) to fund the acquisition and processing of high-quality 2D seismic data in New Zealand's offshore basins. The programme is administered by New Zealand Petroleum & Minerals (formerly Crown Minerals) in close working relationship with the industry and GNS Science, who is contracted to process the seismic data collected. Seismic surveying is central to the government's strategy of attracting oil majors to explore New Zealand's petroleum potential. Before a new acreage area (block offer) is released, seismic data is collected, processed and interpreted—then made freely available to companies interested in bidding for exploration permits. Following the success of the programme in attracting exploration interest, further government funding has been provided to support seismic data acquisition.

We allocate this programme to the GSSE since it does not necessarily increase current production or consumption of fossil fuels. It also benefits the oil and natural-gas industry as a whole. We use production data from the IEA's Energy Balances to allocate the annual amounts reported in budget documents to oil and natural-gas extraction.

Sources: New Zealand Treasury (various years [b]), New Zealand Petroleum & Minerals (various years), IEA.

Tag: NZL_dt_02

Management of IEA Oil Stocks (data for 2006-)

As part of its membership of the International Energy Agency (IEA), New Zealand is required to hold, at any one time, emergency reserve oil stocks equivalent to 90 days of market demand. The industry's normal stockholding practices have in the past been relied on to meet this requirement, with no minimum stockholding obligations placed on the industry. In 2004, it became apparent that the requirement was no longer complied with. Consequently, since 2007, the government has been meeting the country's overall minimum 90-day net import obligation by tendering for additional oil stocks using "ticket" contracts (an option to purchase stock in an IEA-declared emergency) with major oil companies overseas. Owing to its growing domestic production in recent years, New Zealand's IEA stockholding obligation has fallen from 3.7 million barrels in 2007 to 0.8 million barrels in 2010.

As in the case of the United States, and as a result of the policy of "ticket" contracts, part of the country's IEA obligations is financed out of the general government budget. Because petroleum stockpiles benefit the oil sector as a whole and—depending on the value of the relevant elasticities—may also benefit consumers, we allocate the measure to the GSSE. IEA (2007) indicates that roughly one-third of New Zealand's oil stocks are held in the form of crude oil, with the remainder held in the form of refined products, of which gasoline accounts for the bigger part. We therefore choose to use this ratio in allocating annual funding to crude oil and gasoline.

Sources: New Zealand Treasury (various years [b]), IEA (2007; 2010).

Tag: NZL_dt_03

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Energy statistics

IEA (2011), *Energy Balances of OECD Countries*, International Energy Agency, Paris.

Table 24.1. Summary of fossil-fuel support to petroleum – New Zealand

(Millions of NZD, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Consumer support								
Motor-spirits excise-duty refund	Central	33	33	35	35	33	36	35
General services support								
Management of IEA oil stocks	Central	n.a.	6	9	5	2	1	3
Acquisition of petroleum-exploration data	Central	2	1	1	3	5	1	2
Research and development	Central	1	1	1	3	2	11	5

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Table 24.2. Summary of fossil-fuel support to natural gas – New Zealand

(Millions of NZD, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
General services support								
Research and development	Central	4	3	2	3	3	15	8
Acquisition of petroleum-exploration data	Central	5	4	2	3	7	1	2

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Chapter 25.

NORWAY

This chapter identifies, documents, and provides estimates of the various budgetary transfers and tax expenditures that relate to the production or use of fossil fuels in Norway. An overview of the country's energy economy is first given to place the measures listed into context. A data-documentation section then describes those measures in a systematic way. Whenever possible, the description details a measure's formal beneficiary, its eligibility criteria and functioning, and the fuels whose production or use stand to benefit from the measure. The chapter ends with a set of tables that provide, subject to availability, quantitative information and estimates for the various measures listed.

Energy resources and market structure

Norway is the third-leading exporter of oil and natural gas in the world, after Russia and Saudi Arabia. Production increased four-fold in less than two decades, from 1980 to 1997, and has fluctuated since, with declining oil output offset by rising volumes of gas, which is mostly piped to the United Kingdom and continental Europe; LNG exports from a single plant began in 2007. While oil and natural gas together contribute to over a half of Norway's domestic energy needs, hydropower is the single biggest energy source (Norway is the sixth biggest hydropower producer in the world) accounting for about a third of total primary energy supply and for about 95% of electricity generation in 2010. Norway is also involved in a significant power exchange with its neighbours, the magnitude of which depends on precipitation and water inflows to the water reservoirs of the country. Coal has been mined on the Svalbard archipelago since the early 1900s. In 2007 production from the remaining two mines operated by Store Norske Spitsbergen Gruberkompani AS (SNSG) — Svea Nord and the Gruve 7 mine — reached a record level of 4.1 million tonnes, in 2011 fell back to 1.4 million tonnes. Almost all of the mined coal is now exported, mostly to Germany (over 60% of total coal exports). At the end of 2011, the Ministry of Trade and Industry approved the opening of a third coal mine, at Lackefjell. In 2012, preparatory works preceding digging the new mine have begun.

Petroleum forms the backbone of the Norwegian economy, so the government plays a large direct role in the sector. The state holds around one-third of Norway's proven oil and gas reserves. The state direct ownership of these assets is organised into the State's Direct Financial Interest (SDFI) and is managed by the state-owned company, Petoro. The Ministry of Petroleum and Energy (MPE) decides on the SDFI's share of participation when production licences are awarded. The state pays its share of investments and costs, and receives a corresponding share of the income from the production licence. An international oil company Statoil ASA, 67% of which is owned by the Norwegian state, is the biggest player in the upstream sector, operating about 80% of total production on the Norwegian Continental Shelf. Statoil, apart from its own petroleum, is also responsible for marketing of the petroleum owned by the SDFI. The company also has a majority interest in the Mongstad refinery near Bergen. It is the majority shareholder in Statoil Fuel and Retail ASA, which is the leading retailer of oil products in Norway.

Gassco, wholly owned by the state, is the operator of the integrated gas transportation system from the Norwegian Continental Shelf to other European countries. Gassco's responsibilities include planning, monitoring, co-ordinating and administering the transport of gas from the fields to the receiving terminals as well as allocating capacity and developing the transportation system. It also serves as operator for the receiving terminals in Dunkerque (France), Zeebrugge (Belgium), Emden and Dornum (Germany). There are two main domestic natural gas distributors: Gasnor and Lyse Gass.

The Norwegian State, represented by the Ministry of Trade and Industry, also owns 99.9% of the shares in Norske Spitsbergen Kulkompani AS (SNSK), the parent company of Store Norske Spitsbergen Grubekompani AS (SNSG), which carries out coal-mining operations on Svalbard.

Norway was one of the front-runners in electricity-market liberalisation; in 1991 it deregulated its electricity market, which is now fully open for all producers and consumers. All end users are free to choose their electricity supplier. Norwegian electricity-sector legislation is harmonised with EU legislation. The Norwegian power sector comprises a large number of mostly publicly owned participants in various areas of business. The government views hydropower, the source of virtually all the electricity generated, as of strategic value and, as a consequence, it either owns or controls this resource. Around 90% of generating capacity is in public ownership, with local municipalities and county authorities alone owning

just over half. The state-owned utility, Statkraft, is the largest generator. There are more than 160 small distribution system operators (DSOs) in Norway, most of them publicly owned. The dominant supplier within a network area is most often a vertically integrated supplier or a supplier within the same corporation as the DSO. By 2010, over a quarter of all household consumers had switched away from the incumbent supplier.

Prices, taxes and support mechanisms

All energy prices in Norway are determined by the market. The Norwegian Water Resources and Energy Directorate (NVE), an agency within MPE, is responsible for regulating electricity network charges (but not electricity tariffs). VAT at a flat rate of 25% is applied to all forms of energy consumption.[1] Excise taxes are levied on oil products and electricity. Several industries are exempt from the excise tax on energy products.

Norway is a part of the first free electricity market in Europe, the Nordic electricity market. More than 70% of energy consumed in the Nordic market is traded through Nord Pool AS, which was established in 2002.

Energy in Norway is subject to several environmental tax measures, which serve various objectives: raising government revenue, pricing of external environmental effects and meeting energy-policy goals. An SO_2 tax on mineral oil was introduced in 1971 while taxes on mineral fertilisers, pesticides and lubricant oil were all introduced in 1988. In 1991, the government levied a CO_2 tax on consumption of petrol, auto diesel oil, mineral oil and on the offshore petroleum sector (since CO_2 tax is classified as a deductible operating cost for income tax purposes in paying sectors such as the oil and gas sector, the net amount of the CO2 tax is lower than its gross amount). Fuels used in the fisheries sector are all exempted from the CO_2 tax. In the past, companies paying the CO_2 tax were all exempted from the Norwegian emissions trading scheme, which ran from 2005-07. Since Norway joined the EU ETS in 2008, however, certain previously ETS-exempted companies are now included in the scheme and they do not pay the CO_2 tax on mineral oil.

Currently, the tax authority levies an energy tax on mineral oil and electricity, a road-usage tax, and a wide range of environmental taxes on different users and uses of fuels, for example: tax on road usage which applies to uses of all fuels (including biofuels), tax on climate gases (CO_2, HFC and PFC), and tax on sulphur and NO_x. In October 2011, the government of Norway presented a new budget proposal, which envisaged a new method of calculating CO_2 tax expenditures. As since 2013 the EU ETS system will cover about 50% of the total greenhouse-gas emissions in Norway, the government has proposed that the price of carbon should be used as the reference price for all uses and users of fuels in Norway. This method of calculating CO_2-tax expenditures and sanctions replaced the previous one, which relied on comparing the CO_2-tax rates for different users and uses of fuels against a given benchmark.

Income derived from oil and gas production is subject to a special resource tax of 50%, in addition to the ordinary corporate income tax of 28%. For general income tax purposes, depreciation expenses are calculated according to rules which are unique to the oil and gas industry: expenses incurred in acquiring pipelines and production facilities may be completely written off in straight line over six years, starting from the year when the investment was made, i.e. up to 16⅔% annually. The tax base for the purpose of calculating a special resource tax is the ordinary income-tax base, from which cost uplift is deducted. The cost uplift implies

1 In the northern part of Norway, consumption of electricity and energy produced from alternative energy sources is exempted from VAT. The exemption applies to, for example, district heating and bioenergy.

that the petroleum industry can write off as much as 30% of the value of depreciable operating assets as of 2005 in straight line over four years, starting from the year when the investment was made, i.e. up to 7½% annually. If a company incurs losses in a given year, these losses can then be carried forward (with interest, since 2002). If oil and gas companies terminate their activities in Norway with losses, the government reimburses the tax value of those losses. Since 2005, oil and gas companies reporting a loss for tax purposes can also obtain a reimbursement of the tax value (for regular corporate tax and resource tax) of their direct and indirect exploration expenses (excluding financial expenses). In practice, this means a government reimbursement of up to 78% of all the direct and indirect exploration expenses. In this respect, the government shares symmetrically in both profits and losses from exploration and production of petroleum products. In addition to the regular corporate income tax and special resource tax, petroleum producers must pay taxes on emissions of carbon dioxide and nitrogen oxide. In the hydropower sector, excess returns in generation are taxed at 30%, in addition to the normal corporate income tax rate of 28%.

Norway in the past subsidised the production of coal at the Norwegian-controlled coal mines in Svalbard. In 2002 ownership of the island's two mines was transferred to SNSG, on the condition that the mining operations would generate an operating profit. Thanks to historically high coal prices and the increased scale of its production in recent years the mines have since 2002 operated without state subsidies.

There are only a few transfers over the Norwegian state budget directly aimed at the upstream oil and gas industry. Direct transfers are limited to funding of petroleum research and budget transfers to the Norwegian Petroleum Directorate for seismic exploration.

Data documentation

General notes

The fiscal year in Norway coincides with the calendar year.

Tax expenditures in Norway have been reported in the national budget (St. meld. nr.1 (*Nasjonalbudsjettet*)) since 1999. Since FY2010-2011, estimates of the tax expenditures listed below can be found in the following table in the budgetary reports: "Tax expenditures and sanctions[2] by sector" (*Skatteutgifter og -sanksjoner for næringslivet*).

Producer Support Estimate

Operating Subsidy for Store Norske (data for 1999-2001)

For many years, the government of Norway provided operating subsidies to Store Norske, the operator of the Norwegian coal mines in the Spitsbergen archipelago, in order to balance its accounts. The last such annual payment, disbursed in 2001, was worth NOK 136 million.

Data are only available for the 1999-2001 period.

Sources: Store Norske Spitsbergen Grubekompani AS (various years).

Tag*:* NOR_dt_03

2 Tax expenditures (tax sanctions) are defined as exceptions from the general rules in the tax system that are applied to certain groups or certain activities and imply lower (higher) government tax revenue. Norway uses revenue forgone method for calculating tax expenditures. There are different benchmarks for calculating tax expenditures related to excise duties and environmental taxes. Excise duties are treated individually which means that each excise tax expenditure calculation relies on a different benchmark.

NO_x Tax Exemption for the Petroleum Sector (data for 2008-)

A tax on emissions of NO_x was introduced in 2007. An exemption from this tax is granted to those industrial users that participate in the government programme committing them to achieving NO_x-reduction targets.

This item comprises annual amounts reported for the petroleum sector; we have allocated them on the basis of the IEA's Energy Balances for the oil and gas extraction sector.

Sources: Ministry of Finance (various years), NO_x Tax (2011).

Tag: NOR_te_10

Consumer Support Estimate

NO_x Tax Exemption for Domestic Shipping (data for 2008-)

A tax on emissions of NO_x was introduced in 2007. An exemption from this tax is granted to those industrial users that participate in the government programme committing them to achieving NO_x-reduction targets.

This item comprises annual amounts reported for domestic shipping. The annual amounts reported are allocated to diesel, gasoline and fuel oils, on the basis of the IEA's Energy Balances for the domestic navigation sector.

Sources: IEA; Ministry of Finance (various years), NO_x Tax (2011).

Tag: NOR_te_01

CO_2 Tax Exemption for Natural Gas and LPG Used in Shipping (data for 2010-)

A CO_2 tax on natural gas and LPG (*CO_2-avgift på naturgass og LPG*) used in domestic shipping was introduced on 1 September 2010.

Estimates of this tax expenditure have been provided since 2010. The benchmark is based on the carbon price in the EU ETS system.

The annual amounts reported are allocated to LPG as the fuel breakdown is unavailable.

Sources: CO_2 Tax (2011), Ministry of Finance (2011).

Tag: NOR_te_02

CO_2 Tax Exemption for Fisheries (data for 1999-)

Norway provides the fisheries sector with an exemption from the CO_2 tax that is normally levied on sales of mineral oil (*CO_2-avgift på mineralolje*).

Since 2011, tax expenditures have been calculated using the price of carbon set in the EU ETS system. Data estimates since 2010 are thus incomparable with the previous ones. Although fishing in distant waters is also exempted from the CO_2 tax, the estimates only include those exemptions that are granted to fishing in non-distant waters.

The mineral oil category comprises, among other fuels, diesel oil, kerosene and fuel oil. Since the fisheries sector relies predominantly on diesel, we have allocated this support measure entirely to this particular fuel.

Sources: CO_2 Tax (2011), IEA, Ministry of Finance (various years).

Tag: NOR_te_03

NO_x Tax Exemption for Fisheries (data for 2008-)

A tax on emissions of NO_x was introduced in 2007. An exemption from this tax is granted to those industrial users that participate in the government programme committing them to achieving NO_x-reduction targets.

This item comprises annual amounts reported for the fisheries sector. Since the fisheries sector relies predominantly on diesel, we have allocated this support measure entirely to this particular fuel.

Sources: Ministry of Finance (various years); NO_x Tax (2011).

Tag: NOR_te_04

CO_2 Tax Exemption for Natural Gas Used in Greenhouses (data for 2010-)

A CO_2 tax on natural gas used in greenhouses (*CO_2-avgift på naturgass for veksthus*) was introduced on 1 September 2010.

Estimates of this tax expenditure have been provided since 2010. The benchmark is based on the carbon price in the EU ETS system.

Sources: CO_2 Tax (2011), Ministry of Finance (2011).

Tag: NOR_te_05

Concessions on Basic Tax on Mineral Oil (data for 2001-)

A basic tax on mineral oil was introduced in 2000 in order to prevent overconsumption of heating oil in light of the newly introduced higher tax rates on consumption of electricity. The general tax rate on mineral oil has been increasing over time and it now corresponds to the general tax rate on consumption of electricity (including a levy on the electricity distribution tariffs).

The wood processing and pigment industries are granted a lower tax rate on mineral oil while the herring meal and fishmeal industries are exempted from this tax. Since these industries rely predominantly on diesel, we have allocated this support measure entirely to this particular fuel.

Sources: Ministry of Finance (various years).

Tag: NOR_te_06

NO_x Tax Exemption for Industry (data for 2008-)

A tax on emissions of NO_x was introduced in 2007. An exemption from this tax is granted to those industrial users that participate in the government programme committing them to achieving NO_x-reduction targets.

The annual amounts reported are allocated, among other fuels, to bituminous coal, diesel, fuel oil, natural gas and LPG, on the basis of the IEA's Energy Balances for the industry sector.

Sources: IEA; Ministry of Finance (various years), NO_x Tax (2011).

Tag: NOR_te_07

CO_2 Tax Exemption for Natural Gas Used by Industries Outside EU ETS (no data available)

A CO_2 tax on natural gas (*CO_2-avgift på naturgass*) was introduced on 1 September 2010. Some industries that are not encompassed by EU ETS, however, are exempted from CO_2-tax payments.

Although such exemptions are listed in the national budget as tax expenditures, their estimates are currently not provided since there is too much uncertainty related to their calculation.

Sources: CO_2 Tax (2011), Ministry of Finance (2011).

CO_2 Tax Exemption for Natural Gas Used by Industries Encompassed by EU ETS (no data available)

A CO_2 tax on natural gas (*CO_2-avgift på naturgass*) was introduced on 1 September 2010. Some industries that are encompassed by EU ETS, however, are exempted from CO_2-tax payments.

Although such exemptions are listed in the national budget as tax expenditures, their estimates are currently not provided since there is too much uncertainty related to their calculation.

Sources: CO_2 Tax (2011), Ministry of Finance (2011).

NO_x Tax Exemption for Domestic Aviation (data for 2008-)

A tax on emissions of NO_x was introduced in 2007. An exemption from this tax is granted to those industrial users that participate in the government programme committing them to achieving NO_x-reduction targets.

The annual amounts reported are allocated to kerosene type jet fuel only, on the basis of the IEA's Energy Balances for the domestic aviation sector.

Sources: Ministry of Finance (various years), NO_x Tax (2011).

Tag: NOR_te_11

Lower Tax Rate on Diesel Compared to Petrol (data for 1999-)

When it comes to the tax levied on road users, Norway levies a lower tax rate on diesel in comparison to petrol. According to the national budget, that constitutes a tax expenditure.

Tractors, construction machinery, chainsaws, boats and snowmobiles used off-the-road are also exempted from the abovementioned tax, but they are not included under this item.

From 2010, this tax expenditure has started covering the lower tax rate on biodiesel as well. Since the budget states that the amount of tax expenditure related to biodiesel is about 10%, this amount has been subtracted from all the estimates after 2009.

Source: Ministry of Finance (various years).

Tag: NOR_te_12

Concessions on SO_2 Tax on Mineral Oil (data for 1999-2005)

An SO_2 tax on mineral oil was introduced in 1971 and was gradually increased over time. Norway provides domestic aviation and the supply fleet with a reduction on the SO_2 general tax rate. This tax expenditure terminated in 2005.

Exemptions from this tax are currently granted to international shipping, international aviation and fishing in foreign waters.

Sources: Ministry of Finance (various years).

Tag: NOR_te_13

General Services Support Estimate

Petroleum R&D Funding (data for 2005-10)

The Research Council of Norway offers financial support for petroleum research and development activities through funding provided by the Ministry of Petroleum and Energy. In 2011, about 10% of the Council's budget of over NOK 7 billion was devoted to research related to petroleum and energy.

The following programmes are focused on research and development for the sector: PETROMAKS, introduced in 2004, assists the government in the implementation of its research strategy initiative, *Oil and Gas in 21st Century*. The main objective of the programme is to secure gas production in the future through the development of new technologies related to exploration, cost-effective petroleum extraction and transportation, health and safety, and the environment. PETROSAM assists the government in investing into projects related to petroleum activities in the field of social sciences. DEMO 2000 is a programme that provides funding for the demonstration and pilot-testing of technologies developed under PETROMAKS.

Payments are allocated to the GSSE since they do not increase current production or consumption of petroleum products.

Data are available for the 2005-10 period. They comprise funding devoted to PETROMAKS, DEMO 2000, PETROSAM and other strategic research projects related to oil and gas. We use production data from the IEA to allocate the annual amounts reported in budget documents to oil and natural gas extraction.

Sources: Ministry of Petroleum and Energy (various years), Norwegian Petroleum Directorate (2011), Research Council of Norway (2011), PETROMAKS (2010).

Tag: NOR_dt_01

NPD Seismic Investigations (data for 2007-10)

The government of Norway provides funding for the research activities of the Norwegian Petroleum Directorate (NPD). The NPD concentrates on acquiring knowledge connected to the Norwegian continental shelf, which is then effectively used by the oil and gas industry (access to the NPD resources is granted after a small lump-sum payment).

Payments are allocated to the GSSE since they do not increase current production or consumption of petroleum products.

Data are available for the 200510 period. The upsurge in expenditure for the years 2008 and 2009 is due to the fact that the NPD received significant additional state-funding for exploration research efforts in the Nordland VI, VII and Troms II areas. We use production data from the IEA to allocate the annual amounts reported in budget documents to oil and natural gas extraction.

Sources: Ministry of Petroleum and Energy (various years), Norwegian Petroleum Directorate (2011).

Tag: NOR_dt_02

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Table 25.1. Summary of fossil-fuel support to coal - Norway

(Millions of NOK, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Consumer support								
NO_x tax exemption for industry	Central	n.a.	n.a.	n.a.	9	6	20	20

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Table 25.2. Summary of fossil-fuel support to petroleum - Norway

(Millions of NOK, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Producer support								
Support for intermediate inputs								
NOx tax exemption for the petroleum sector	Central	n.a.	n.a.	n.a.	457	117	334	329
Consumer support								
CO_2-tax exemption for fisheries	Central	535	350	185	130	145	80	80.0
NOx-tax exemption for industry	Central	n.a.	n.a.	n.a.	13	12	41	41
NOx-tax exemption for domestic aviation	Central	n.a.	n.a.	n.a.	20	60	20	20
Concessions on SO2 tax	Central	20	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
NOx-tax exemption for fisheries	Central	n.a.	n.a.	n.a.	125	140	130	130
Lower tax rate on diesel compared to petrol	Central	1950	2000	3400	3100	2300	2430	2187
NOx-tax exemption for domestic shipping	Central	n.a.	n.a.	n.a.	625	590	650	650
Concessions on basic tax on mineral oil	Central	80	65	50	100	70	110	105
CO_2-tax exemption for natural gas and LPG used in shipping	Central	n.a.	n.a.	n.a.	n.a.	n.a.	5	15
General services support								
NPD seismic investigations	Central	<0.1	<0.1	29	103	134	<0.1	<0.1
Petroleum R&D funding	Central	143	187	157	148	115	128	126

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Table 25.3. Summary of fossil-fuel support to natural gas - Norway

(Millions of NOK, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Producer support								
Support for intermediate inputs								
NOx-tax exemption for the petroleum sector	Central	n.a.	n.a.	n.a.	343	98	316	321
Consumer support								
CO_2-tax exemption for natural gas used in greenhouses	Central	n.a.	n.a.	n.a.	n.a.	n.a.	5	15
NOx-tax exemption for industry	Central	n.a.	n.a.	n.a.	3	3	9	9
General services support								
Petroleum R&D funding	Central	80	114	102	111	96	121	123
NPD seismic investigations	Central	<0.1	<0.1	19	77	111	<0.1	<0.1

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Chapter 26.

POLAND

This chapter identifies, documents, and provides estimates of the various budgetary transfers and tax expenditures that relate to the production or use of fossil fuels in Poland. An overview of the country's energy economy is first given to place the measures listed into context. A data-documentation section then describes those measures in a systematic way. Whenever possible, the description details a measure's formal beneficiary, its eligibility criteria and functioning, and the fuels whose production or use stand to benefit from the measure. The chapter ends with a set of tables that provide, subject to availability, quantitative information and estimates for the various measures listed.

Energy resources and market structure

Fossil fuels provide the bulk of Poland's energy. It relies heavily on indigenous bituminous coal, which accounts for over a half (e.g. 55% in 2010) of its total primary energy supply (TPES). While Poland has the highest level of coal-based electricity generation among the OECD countries, it has been declining over the years — from over 97% in 1990 to about 88% in 2010. In 2010, oil provided about a quarter of TPES, all but about 5% of which was imported, and natural gas for a further 13%, about two-thirds of which was imported. Russia supplies over 90% of Poland's oil imports and over 80% of its imports of natural gas. Although its natural-gas reserves are in decline, Poland is thought to have significant unconventional resources, notably shale gas. Exploratory drilling started only recently. Domestically produced biomass, the only significant renewable energy source, accounted for the remaining 7% of primary supply in 2010. The government's medium-term objective is to diversify its energy mix away from coal by introducing nuclear power and expanding the role of renewable energy, particularly biogas.

The structure of Poland's energy sector has changed dramatically since the early 1990s, following the collapse of the communist bloc. Some assets were privatised, but the state has retained large stakes in most of the main companies. The state holds 100% of shares of two out of three biggest coal producers, Katowicki Holding Węglowy S.A. and Kompania Węglowa S.A. and it holds a majority share of the remaining one, Jastrzębska Spółka Węglowa S.A. The extraction of hard coal is also carried out by other, smaller companies, like Południowy Koncern Węglowy S.A., LW Bogdanka S.A., ZG Siltech Sp. Z o.o., PG Silesia Sp. Z o.o. Two vertically integrated power utilities, PGE S.A. and PAK S.A., mine lignite for their own use from four open-pit mines (Konin, Adamów, Bełchatów, Turów). Together with a small lignite mine, Sieniawa, these four open-pit mines account for the total lignite extraction in Poland.

There are half a dozen oil-producing companies in Poland, of which the Polish Oil and Gas Company (PGNiG), which is majority government owned, is by far the largest, accounting for 98% of production, most of which comes from on-shore wells. Another state-controlled company, PetroBaltic, produces small volumes offshore. Oil refining is undertaken by PKN Orlen, established in 1999 through the merger of two former state-owned enterprises, and by the LOTOS Group. Both companies are majority state-owned. A wholly state-owned company, PERN (Przedsiębiorstwo Eksploatacji Rurociągów Naftowych S.A., or "Przyjaźń"), operates oil storage and pipeline facilities. Distribution and retailing is carried out by PKN Orlen S.A. and the LOTOS Group, as well as a number of foreign companies.

PGNiG S.A., through subsidiaries, continues to dominate the downstream gas sector following the implementation of market reforms in recent years to comply with EU directives. The company controls virtually all gas imports and owns all the transmission pipelines and underground storage facilities, though the system is operated by an independent transmission system operator, OGP GAZ-SYSTEM S.A. — a wholly state-owned enterprise set up in 2004. Small quantities of liquefied natural gas (LNG) are transported by road in tanks by independent companies. PGNiG S.A. also owns six regional distribution companies covering most of the country, though they have been legally unbundled from the rest of the company. PGNiG S.A. dominates the retail market too. Several other companies (including G.EN Gaz Energia, CP Energia S.A., EWE Polska Sp. z o.o., Enesta Sp. Z o.o. and KRI S.A.) have entered the market, but their total market share was only about 2% in 2009. As they have no access to gas resources, they purchase gas from PGNiG and resell it to final customers, often via their own local distribution networks. Customer switching is negligible.

There are more than 100 companies licensed to generate electric power in Poland, but four companies that were formed in 2007 out of the old state monopoly, Polskie Sieci Energetyczne S.A. (PSE), control most of the market: Polska Grupa Energetyczna (PGE),

Tauron Polska Energia, Energa and Enea. They are vertically integrated, with activities in generation, distribution and direct supply. Poland's transmission grid is operated and owned by PSE Operator S.A., which remains in state ownership. There are 14 distribution system operators (DSOs) that were legally unbundled in 2007 from the former distribution companies, owned by the four main Polish power companies and two foreign companies (Vattenfall and RWE), as well as six so-called local distribution operators that were not subject to unbundling. The supply branch of each group sells most of its electricity to the customers connected to their distribution networks; the rate of customer switching to independent suppliers remains very low.

Prices, taxes and support mechanisms

Prices for coal, oil and oil products are set by the market and are neither regulated nor subsidised. The Energy Regulatory Authority, ERO, still regulates natural gas prices for all consumer groups. It also approves tariffs for electricity and gas transmission and distribution. End-user electricity prices are not regulated except for household tariffs, which are subject to approval by the ERO.

Sales of all fuels in Poland include a 23% value-added tax (VAT).[1] All oil products and electricity sales (both commercial and non-commercial) are subject to excise taxes; a road tax is levied on motor fuels. Excise taxes on gasoline are considerably higher than on diesel and automotive LPG, which has boosted demand for the latter fuels. Some off-road uses of petroleum fuels (fisheries, aviation) are exempt from excise taxes.

Although an excise tax on coal was introduced on 1 March 2009, coal used for heating purposes was exempt from the excise tax on coal until 1 January 2012. After that date, only certain users of coal are exempt from the excise tax on coal. Coal is exempt from the excise duty, if it is used (1) for electricity generation, (2) as input in production of other energy products, (3) by households, the army, public administration, certain entities within the educational system (e.g. nurseries, kindergartens), healthcare providers and NGOs, (4) for rail transport of cargo and passengers, (5) for combined heat and power generation, (6) in agriculture, horticulture, fish farming and forestry, (7) in various mineralogical, electrolytic, metallurgical and chemical-reduction processes, (8) by energy-intensive industries for heating purposes, and (9) by those business entities that implemented systems aiming at fostering environmental protection or increasing energy efficiency. The heavy costs of restructuring the Polish hard-coal industry have been borne mainly by the state. Since Poland joined the European Union in 2004, the European Commission has taken a number of decisions on the compatibility of restructuring plans with the EU competition rules and on conditions for approving state aid for the hard-coal-mining industry. In recent years, the selling prices of locally produced steam coal, coking coal and lignite sold in Poland have been freely negotiated. Coal sales are not subsidised and state aid is no longer given to support operating costs or to maintaining access to already exploited coal reserves.

Most of the costs currently associated with aiding the restructuring of the hard-coal industry are associated with historic liabilities, namely: the entitlement by retired mineworkers to free coal; the costs of mine closures; benefits paid to redundant miners; the costs of managing water, gas and fire risks at closed mines; and the restoration and clean-up of damage caused by past mining activity. The total cost to the national budget of these liabilities over the period 1999 to 2009 is estimated to be above PLN 20 billion. Almost 90%

[1] In 2011, the basic VAT was increased from 22 to 23% until the end of 2013. However, the government announced it may further increase it, depending on the public-debt-to-gross-domestic-product ratio.

of these government expenses covered exemption or deferral of social-contribution, tax and fine payments. Since 2007, the costs of mine closures have been met by a dedicated fund, established for this purpose by the remaining mining enterprises.

Data documentation

General notes

The fiscal year in Poland normally coincides with the calendar year. Corporations, however, may choose a different starting point of the fiscal year.

Producer Support Estimate

Most of Polish state aid to the energy sector is apportioned to the coal industry. Poland's heavy reliance on coal stems from both a large domestic endowment of this fuel and the fact that in the communist period Poland had limited foreign-exchange earnings with which it could import other fuels. Because coal-mining was considered a strategic sector, the state subsidised production of coal, providing various social benefits to coal miners and regulating coal prices to keep them low.

With the economic transition of the early 1990s, the state envisioned to transform coal mines into self-reliant commercial companies that would adapt to the conditions of a free-market economy. The continued policy of price controls, however, meant that the industry had a very limited potential for economic growth and, hence, needed further state assistance.

All subsequent plans for restructuring the coal sector throughout the 1990s supported capacity adjustment, shutting down unprofitable mines and reducing employment to levels that would improve productivity. The overarching objective of those programmes was thus to make the coal-mining sector profitable.

These programmes proved ineffective due to the lack of consensus between the government and the trade unions. This changed in 1998 as the new government, supported by *Solidarność* (the biggest Polish trade union), devised a coal-mining restructuring plan, the *Reforma górnictwa węgla kamiennego w Polsce w latach 1998 — 2002*. The plan provided additional funding for social schemes and expressed a commitment to write-off of the debt which the mines had accumulated over the years. Another plan adopted in 2003 — the *Program restrukturyzacji górnictwa węgla kamiennego w Polsce w latach 2003-2006* — pursued similar objectives.

When Poland joined the European Union in 2004, state aid became subject to the Community rules. In practice, this development meant that coal-mining restructuring plans would have to be compatible with the common market, and that the European Commission would need to approve any state-aid scheme before it reaches recipients.

The Council of Ministers has so far adopted two documents regarding restructuring of the sector: the *Restrukturyzacja górnictwa węgla kamiennego w latach 2004-2006 oraz strategia na lata 2007-2010*, which was then replaced by *Strategia działalności górnictwa węgla kamiennego w Polsce w latach* 2007-2015. Poland does not provide subsidies to coal-mining under article 5-3 (current production aid). All current subsidies therefore result from article 7 (aid to cover exceptional costs) and are associated either with mine decommissioning or investment aid to operating mines (for up to 30% of the total investments made). The former measures are mainly allocated to the GSSE as most of them do not increase current production or consumption of coal. The latter are allocated to the PSE since they directly support coal producers.

The coal-mining sector underwent major restructuring through a series of management mergers and mine closures. At the beginning of the transition, the industry comprised 71 independent mines. In 1993, the management of hard-coal production was taken over by seven joint-stock holding companies that held the assets of 60 mines. Four mines remained stand-alone enterprises, while the rest was shut down on unprofitability grounds.

The Polish coal-mining sector now comprises 31 mines grouped into seven joint-stock holding companies and is dominated by three state-owned companies: Europe's largest hard-coal company, Kompania Węglowa S.A. (KW), Katowicki Holding Węglowy S.A. (KHW) and Jastrzębska Spółka Węglowa S.A. In 2000, two state-owned liquidation companies, Spółka Restrukturyzacji Kopalń S.A. (SRK) and Bytomska Spółka Restrukturyzacji Kopalń Sp. Z o.o. (BSRK), were given responsibility to manage mine decommissioning. Since 2006, only two companies in Poland have been benefitting from state aid: KW and KHW. Aid is also being envisaged for the SRK (BSRK was consolidated into SRK in 2009).

Rehabilitation of Regions Damaged by Coal-Mining Activity (data for 1996-)

This item forms part of the broader restructuring programme. It provides funding for the rehabilitation of regions damaged by both past coal-mining activity and the reactivation of abandoned mining sites. Funding provided for the rehabilitation of regions damaged by the latter is a producer subsidy but it is impossible to isolate this single item from the reports (see the GSSE part of the cookbook).

Data for the 2001–03 period are not reported since they cannot be isolated from total state-aid for restructuring. The data reported for 2006 are an underestimate since no report is available for that particular year. The report for January–November 2006 is used instead.

Sources: Ministry of Economy (various years), Office of Competition and Consumer Protection (various years).

Tag: POL_dt_02

Exemption or Deferral of Social Contributions (data for 1996-2003)

This item comprises annual payments made by the state to the Social Insurance Office (ZUS) on behalf of coal mines. State aid took the form of both social-contribution exemptions and deferrals.

Both types of aid were granted on the basis of two government acts: Rozporządzenie Rady Ministrów z dnia 15 września 1982 r. w sprawie zasad umarzania i udzielania ulg w spłacaniu należności państwowych (Dz. U. Nr 30, poz. 211 z 1982 r. z późn. zm.) and Ustawa z dnia 27 sierpnia 1997 r. o restrukturyzacji finansowej jednostek górnictwa węgla kamiennego oraz wprowadzeniu opłaty węglowej (Dz.U. Nr 113, poz.735 art 7). Aid was available for both operating coal mines and the liquidation companies dealing with shutting down the unprofitable mines.

State support provided through social-contribution exemptions and deferrals seems to date back to 1982 but data are only available for the 1996 – 2003 period. According to the document adopted by the Council of Ministers (*Strategia działalności górnictwa węgla kamiennego w Polsce w latach 2007-2015*), the scheme terminated in 2006.

Amounts reported under this item were estimated as the product of the value of deferred contribution payments and the interest rate on these payments.

Payments are allocated to the PSE since they subsidise one of the production factors, labour.

Sources: Office of Competition and Consumer Protection (various years).

Tag: POL_dt_03

Exemption or Deferral of Taxes and Fines (data for 2001-2003)

This item comprises annual payments made by the state to exempt or defer tax and fine payments on behalf of the coal-mining sector. State aid covered unpaid income taxes and fines, including environmental charges paid to the Environmental and Water Management Fund (NFOŚiGW) and fines paid to the Disability Fund (PFRON). Aid was available for both operating coal mines and liquidation companies dealing with shutting down the unprofitable mines.

The state is committed to continue the programme until at least 2015, as outlined in a document adopted by the European Council, *Strategia działalności górnictwa węgla kamiennego w Polsce w latach 2007 – 2015.*

The annual amounts for tax and fine deferrals were estimated as the product of the value of deferred payments and the interest rate on these payments.

Payments are allocated to the PSE since they constitute a production tax credit.

Sources: Office of Competition and Consumer Protection (various years).

Tag: POL_dt_04

NFOŚiGW Aid for Environmental Protection (data for 1996-2000)

The Environmental and Water Management Fund (NFOŚiGW) provides funding for the coal-mining industry to support environmental protection programmes. It can also write-off fines whenever the industry proves unable to pay them. These fines are imposed by the NFOŚiGW to partially internalise the social costs associated with coal-mining.

Data are available for the 1996 – 2000 period only since the amounts for later years cannot be distinguished from total aid for restructuring.

Sources: Office of Competition and Consumer Protection (various years).

Tag: POL_dt_05

R&D Funding from the Research Committee (data for 1996-2000)

This item comprises annual grants obtained from the Research Committee by the coal-mining industry for financing their R&D programmes.

The Research Committee provides funding for financing research and development to companies which apply for R&D grants.

Data are available for the 1996 – 2000 period. From 2001, data are unavailable since they cannot be isolated from total state-aid for restructuring.

Sources: Office of Competition and Consumer Protection (various years).

Tag: POL_dt_06

Stranded-Costs Compensation (data for 2008-)

This item comprises subsidies provided to power plants to compensate them for the termination of long-term Power Purchase Agreements (PPAs).

In the mid-1990s, the Polish government decided to launch a programme designed to modernise the domestic electricity sector and bring it into line with the technical and

environmental standards of Western Europe. The programme initially launched a tender procedure with a view to selecting projects for new or modernised electricity generation plants. The selected projects would be awarded long-term PPAs for their generation capacity. The PPAs were signed between 1994 and 1998 and most of them had been concluded for a period of more than 15 years. The last PPA was to expire in 2027.

Under these agreements, the state network operator had a purchase obligation for a guaranteed volume of electricity at a guaranteed price. Power plants charged the electricity network operator an amount equivalent to all their fixed and variable costs plus a profit margin. The PPAs thus provided price-support to the power plants that had signed such agreements with the network operator (the PPAs covered around 40% of Polish electricity generation).

In November 2005, the Commission opened an in-depth investigation on the PPAs in Poland. During 2006 and 2007, the Polish authorities worked out a draft law that foresees the end of the PPAs and a compensation system to the power plants in line with the Commission's methodology for analysing state aid linked to stranded costs. That methodology allows stranded-cost compensations to alleviate the effect of liberalisation without threatening the continuation of electricity supply. Such compensations should be proportionate, and not discourage the entrance of new companies into the generation market.

The programme started in 2008 and funding is planned until the end of 2025. The biggest Polish power plants, *PGE Elektrownia Opole S.A.* and *PGE Elektrownia Turów S.A.*, received most of the payments. Payments are financed from a parafiscal levy imposed on all consumers to make up a fund which is then disbursed among the power plants. This fund is run by a special purpose company that is fully-owned and controlled by the state.

The formula for calculating these payments provides for the state to cover the losses associated with certain types of cost, plus depreciation and fuel costs, if the revenue collected on the market is not sufficient for that purpose. This implies that state payments cover the costs and risks normally borne by the power plants under normal market conditions. Since Polish power plants rely mainly on coal (more than 90% of Polish electricity is produced out of coal), this scheme is an implicit subsidy to the coal sector. These payments are therefore allocated to the PSE.

Sources: European Commission, Office of Competition and Consumer Protection (various years).

Tag: POL_dt_13

Initial Investment Aid for Hard-Coal-Mining Sector (data for 2010-)

This item comprises investment aid for hard-coal-mining sector. Aid was granted to investment projects related to ensuring access to coal reserves and was not granted for covering costs related to the production-process itself.

Grant was provided by the Ministry of Economy in form of a grant that covered initial investment costs and it covered fixed capital costs directly related to infrastructure work or to the equipment necessary for the mining of coal resources in existing mines (such as pits and main dip headings, roadways and other infrastructure work, mechanical installations, modern managements equipment, washrooms and surface installations).

The scheme operated only in 2010, with a planned budget of PLN 400 million. It followed the EU regulation stating that the state can reimburse up to 30% of the qualifying investment costs incurred by coal producers.

Sources: Ministry of Economy (2010).

Tag: POL_dt_14

Consumer Support Estimate

Coal Allowances in Coal-Mining Sector (data for 2004-)

Traditional in-kind benefits for miners include free provision of coal which used to serve heating and water-warming purposes. With time, however, most miners have obtained access to distributed heating systems and the benefit in-kind lost its rationale. The in-kind coal support is now being phased out with the introduction of cash equivalents.

Data for the period 2001 – 2003 are not reported since they cannot be isolated from total state-aid for restructuring. The data reported for 2006 are an underestimate since no report is available for that particular year. The report for January – November 2006 is used instead.

Sources: Ministry of Economy (various years), Office of Competition and Consumer Protection (various years).

Tag: POL_dt_11

Rebates on Diesel-Fuel Tax in Farming (data for 2006-)

In 2006, Poland adopted the EU Council Directive 2003/96/EC – *Restructuring the Community Framework for the Taxation of Energy Products and Electricity*, which requires each member state to apply a minimum tax rate of EUR 21 per 1 000 litres to diesel fuel when used for farming purposes.

Rebates are financed out of the state budget and their value cannot exceed 86 litres per hectare of utilised agricultural area. The Minister of Agriculture and Rural Development determines the exemption rate on a yearly basis. Polish farmers can obtain rebates by submitting the relevant invoices to the local authority twice a year.

Data for this scheme were provided by the Ministry of Agriculture and Rural Development and are available at the Polish Business in Agriculture website.

Sources: Ministry of Agriculture and Rural Development (various years).

Tag: POL_te_01

General Services Support Estimate

Aid for Coal-Mine Decommissioning (data for 1996-)

The coal-mine decommissioning programme started in 1991. It became an official government policy in 1993 as part of the plan to make the coal-mining sector profitable. The state is committed to continue the programme until at least 2015, as outlined in a document adopted by the European Council, *Strategia działalności górnictwa węgla kamiennego w Polsce w latach 2007 – 2015.*

Throughout the existence of the programme, numerous mines have been either partially or completely shut down. The state has been covering the costs of dismantling the equipment, protecting the land above from subsistence, and ensuring that neighbouring coal mines are secured from water, gas and fire hazards.

Data for the 2001 – 2003 period are not reported since they cannot be isolated from total state-aid for restructuring. The data reported for 2006 are an underestimate since no report

is available for that particular year. The report for January – November 2006 is used instead.

Payments are allocated to the GSSE as they do not increase current production or consumption of hard coal.

Sources: Ministry of Economy (various years), Office of Competition and Consumer Protection (various years).

Tag: POL_dt_01

Rehabilitation of Regions Damaged by Coal-Mining Activity (data for 1996-)

This item forms part of the broader restructuring programme. It provides funding for the rehabilitation of regions damaged by both past coal-mining activity and the reactivation of abandoned mining sites.

State support for the scheme was regulated by a document adopted in 1994: *Prawo geologiczne i górnicze (Dz. U. Nr 27, poz. 96, z późn. zm.)*. The state is committed to continue the programme until at least 2015, as outlined in a document adopted by the European Council, *Strategia działalności górnictwa węgla kamiennego w Polsce w latach 2007 – 2015.*

Payments are allocated to the GSSE as most of them do not increase current production or consumption of coal. Funding provided for the rehabilitation of regions damaged by the reactivation of abandoned mining sites is a producer subsidy but it is impossible to isolate this single item from the reports.

Data for the 2001 – 2003 period are not reported since they cannot be isolated from total state-aid for restructuring. The data reported for 2006 are an underestimate since no report is available for that particular year. The report for January – November 2006 is used instead.

Sources: Ministry of Economy (various years), Office of Competition and Consumer Protection (various years).

Tag: POL_dt_02

Aid for Employment Restructuring (data for 1998-)

The employment restructuring programme was established in 1993. The item comprises various social schemes over the last two decades but its aim has always been to bring about a reduction in unemployment in the mining sector without a significant loss of the dismissed workers' welfare.

The aid devoted to employment restructuring was substantially increased with the introduction of the 1998 coal-mining restructuring programme, *Reforma górnictwa węgla kamiennego w Polsce w latach 1998 – 2002*. The programme introduced two different sets of measures.

The first set aimed at reemployment of younger miners in other sectors of the economy and provision of welfare benefits to dismissed workers while looking for a new job. Miners were to choose from a soft loan for the establishment of a business, social-assistance benefits and two different kinds of severance-payment schedules. Also, workers from closed mines were offered alternative forms of employment and access to active-labour-market policies.

The other set of measures was to provide social protection for older employees. Miners who had five or fewer years of work left before becoming eligible for a pension were entitled to receive a "mining leave" (equal to 75% of the wage paid when on a holiday leave). Miners two or fewer years away from qualifying for a pension obtained a prospect of a secure job in the coal-mining sector.

Data for the 2001 – 2003 period are not reported since they cannot be isolated from total state-aid for restructuring. The data reported for 2006 are an underestimate since no report is available for that particular year. The report for January – November 2006 is used instead.

Payments are allocated to the GSSE as they do not increase current production or consumption of coal.

Sources: Ministry of Economy (various years), Office of Competition and Consumer Protection (various years).

Tag: POL_dt_07

Investment Aid from the Ministry of Economy (data for 1998-2000)

This item comprised aid to investment in environmental protection and research and development. Aid was provided by the Minister of the Economy in the form of direct transfers.

Data are available for the 1998 – 2000 period.

Payments are allocated to the GSSE as a more detailed description of the programme was not available.

Sources: Office of Competition and Consumer Protection (various years).

Tag: POL_dt_08

Severance Payments for the Coal-Mining Industry (data for 1999-2000)

Severance payments were granted to those miners who agreed to leave the coal-mining industry.

Data are available for the 1998 – 2000 period.

Payments are allocated to the GSSE as they do not increase current production or consumption of coal.

Sources: Office of Competition and Consumer Protection (various years).

Tag: POL_dt_09

Aid for Restructuring of the Coal-Mining Sector (data for 2001-2003)

The reports do not specify the purpose of this item so payments are allocated to the GSSE. Aid was mainly provided by the Ministry of the Economy in form of direct transfers.

Sources: Office of Competition and Consumer Protection (various years).

Tag: POL_dt_10

Early-Retirement Benefits for Laid-Off Miners (data for 2004-)

The state provided aid to all miners from liquidated hard-coal mines in the form of early-retirement benefits, provided they were five or fewer years away from retirement.

Payments are allocated to the GSSE as they do not increase current production or consumption of coal.

Sources: Ministry of Economy (various years), Office of Competition and Consumer Protection (various years).

Tag: POL_dt_12

Sources

Policies or transfers

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Office of Competition and Consumer Protection (various years), *Raport o pomocy publicznej w Polsce udzielonej przedsiębiorcom*, Available at: *www.uokik.gov.pl/raporty_i_analizy2.php#.*

Energy statistics

IEA (2011), *Energy Balances of OECD Countries*, International Energy Agency, Paris.

Table 26.1. Summary of fossil-fuel support to coal - Poland

(Millions of PLN, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Producer support								
Support to unit returns								
Stranded costs compensations	Central	n.a.	n.a.	n.a.	2	2128	2128	2128
Support for capital formation								
Initial investment aid for hard-coal mining	Central	n.a.	n.a.	n.a.	n.a.	n.a.	400	n.a.
Consumer support								
Coal allowances in coal-mining sector	Central	26	24	27	31	37	23	162
General Services Support								
Aid for employment restructuring	Central	386	172	n.a.	n.a.	n.a.	n.a.	n.a.
Aid for coal-mine decommissioning	Central	222	227	229	187	193	195	214
Rehabilitation of regions damaged by coal mining	Central	73	44	48	22	7	13	9
Early-retirement benefits for laid-off miners	Central	27	24	25	24	24	16	22

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic.

Table 26.2. Summary of fossil-fuel support to petroleum - Poland

(Millions of PLN, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Consumer support								
Rebates on diesel fuel tax in farming	Central	n.a.	114	262	498	609	720	720

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic.

Chapter 27.

PORTUGAL

This chapter identifies, documents, and provides estimates of the various budgetary transfers and tax expenditures that relate to the production or use of fossil fuels in Portugal. An overview of the country's energy economy is first given to place the measures listed into context. A data-documentation section then describes those measures in a systematic way. Whenever possible, the description details a measure's formal beneficiary, its eligibility criteria and functioning, and the fuels whose production or use stand to benefit from the measure. The chapter ends with a set of tables that provide, subject to availability, quantitative information and estimates for the various measures listed.

Energy resources and market structure

Between 1990 and 2009, Portugal's total primary energy supply (TPES) grew by 44% and its final energy demand by 41%. The country is highly dependent on imported fossil fuels, which has stimulated efforts to diversify and secure its energy supplies, especially by encouraging the use of natural gas and renewable energy sources. Among fossil fuels, petroleum and coal accounted for, respectively, 49% and 7% of TPES in 2010. Natural gas was first introduced in Portugal in 1997, and by 2010, its share had reached 19% of TPES. Portugal is one of the few advanced economies for which renewable energy is the only form of energy produced domestically. Renewable energy averaged about 25% of TPES and 54% of electricity generation in 2010. Hydro-electric power generation is expected to increase following the construction of the new dams planned in the National Programme for Dams with High Hydropower Potential.

About 54% of consumed energy comes from oil, 22% from electricity, and 15% from renewable energy, mainly in the form of biomass. Transport and industry are the most important energy-consuming sectors, accounting for a 62% share in total final energy consumption in 2009. Energy consumption by the road-transport sector increased strongly in the 1990s due to the steady growth of traffic. This, however, changed in the 2000s as the total number of vehicles and distance travelled per vehicle stagnated. Energy used for transportation purposes has then remained relatively stable since 2005.

Portugal has not yet discovered significant deposits of oil or natural gas on its territory, but some companies continue to explore the continental shelf. Oil's share in TPES has declined gradually since the 1970s: from 76% in 1973 to 64% in 2001 and to 49% in 2010. The Portuguese government forecasts that this share will decline further, reaching 44% in 2020. Portugal closed its last coal mine in 1994. Imports of coal for electricity generation vary from year to year, depending on hydropower output. The share of coal in TPES is also expected to decrease steadily, to about 7% in 2020. These changes have been paralleled by an increase in the shares of natural gas and renewable energy.

All of Portugal's natural gas is imported, mainly from Algeria (via a pipeline that transits through Spain). In addition, some liquefied natural gas (LNG) is shipped from Nigeria. The electricity sector is the largest consumer of natural gas, accounting for 43% of total consumption in 2008. Industry consumed 32% of the total volume in the same year, while the commercial and residential sectors consumed 11%. Over the last decade, Portugal has made significant efforts to deregulate its electricity sector. Both distribution and generation markets have witnessed important changes. All electricity consumers are now free to choose their supplier (although regulated tariffs remain an option), and most of the Power Purchase Agreements are no longer in force. In order to improve the security of supply, the construction of four new gas-fired power stations totalling approximately 3 320 MW of capacity was licensed. Also, in 2004, the government launched the All-Iberian Electricity Market (MIBEL) initiative. The Portuguese natural gas market started to be liberalised only in 2006 due to a derogation under the EU Directive 2003/55/CE. EDP (*Energias de Portugal*) and Galp are now two major players in both the electricity and natural-gas markets – a major break from the past, when each was a single entity in their respective monopolised markets. A single transmission system operator for gas and electricity networks was also created. REN (*Redes Energéticas Nacionais*) acquired the electricity-transmission assets previously owned by EDP, the gas-transmission operator formerly operated by the Galp-owned Transgás, the LNG terminal at Sines and existing gas-storage facilities.

In April 2010, Portugal approved a new plan for the energy sector. The National Energy Strategy (*Estratégia Nacional para a Energia*, or ENE 2020) updated the 2005 plan and established an agenda intended to increase competition, promote economic growth, and reduce Portugal's dependency on foreign supplies of energy. In particular, it envisages the

decentralisation of energy production, the promotion of competition, the consolidation of MIBEL, the creation of an Iberian Common Natural-Gas Market (MIBGAS), the regulation of the national oil system, and the upgrading of the energy-storage infrastructure. As part of ENE 2020, a number of targets were established for the Portuguese energy sector, which are to be achieved by 2020. They include reducing the country's dependency on foreign energy supplies, increasing the share of final energy produced from renewable sources, developing the industrial cluster related to energy efficiency and consolidating that for renewable energy to boost economic development and foster job creation, and achieving Portugal's GHG emission-reduction targets, in line with its EU commitments.

Prices, taxes and support mechanisms

The Regulatory Entity for Energy Services (*Entidade Reguladora dos Serviços Energéticos*), created by the Decree-Law 97/2002, is responsible for fixing or approving natural-gas prices charged by companies in the sector. The 2010 Tariff Regulation (*Regulamento Tarifário*) determines the tariff calculation method and structure. By the end of 2012, regulated tariffs for natural gas and electricity will no longer be in force, and all consumers will be free to choose their supplier. At that point, with prices set by the market, the process of liberalisation of natural gas and electricity markets will be complete.

Since 2004, there has been no ceiling set on retail prices for motor fuels. The retail petroleum-products market in Portugal is dominated by three companies: Galp, Repsol and BP. The recent expansion of major supermarket chains into the retail market for liquid fuels has contributed to reduce retail prices. Taxes accounted for 64% and 48% of retail gasoline and diesel prices in 2009. Transport fuel prices are generally higher in Portugal than in Spain, leading to cross-border fuel tourism, especially by heavy freight vehicles.

On the production side, the extraction of crude oil in Portugal is subject to an Oil Production Tax (*Imposto sobre a Produção de Petróleo*) whose rates vary with annual production volumes and a field's depth. This progressive royalty system also distinguishes between onshore and offshore fields, with the latter benefitting from more favourable rates of tax. The production of oil from offshore fields that are deeper than 200 meters is totally exempt from the Oil Production Tax.

The Statute of Fiscal Benefits (*Estatuto dos Benefícios Fiscais*) sets out the general fiscal rules applicable to all tax concessions in Portugal. In addition, tax concessions can also be established in other pieces of legislation. A full VAT rate of 23% is applied to gasoline and automotive diesel for all non-commercial uses. Automotive diesel used in heavy passenger vehicles, public transport, and in machines and agriculture tractors are all granted a 100% VAT reimbursement. Full VAT applies at a rate of 23% to electricity and natural gas consumed by the residential sector. Reduced VAT rates also apply to equipment for the generation and use of energy derived from certain renewable sources, for pollution-control equipment, for agricultural inputs and machinery, and for waste collection and water supplies. Many exemptions and reduced VAT rates have been applied over the years on the grounds that they support vulnerable segments of the economy and population. The Decree Law 566 from 1999 also provides for full and partial exemptions from the petroleum and energy tax (*Imposto sobre Produtos Petrolíferos e Energéticos*, or ISP).

Since 2001, Portugal has made progress in expanding its use of environmentally related taxes. The vehicle taxation system was reformed in 2007, and both the registration tax on vehicle purchases and the annual circulation tax now take into account CO_2-emission levels and cylinder capacity, with the former aspect gradually becoming more important. These taxes have proved effective in changing the composition of the car fleet towards new and more fuel-efficient cars. Furthermore, a vehicle-scrapping programme has been in place since

2000; a discount is applied to the registration tax whenever a new vehicle is purchased at the same time that an old one is scrapped. From 2011 on, the vehicle scrapping scheme has been limited to electric vehicles only. Environmental initiatives are expected to be further strengthened in the future in accordance with the 2010-13 Stability and Growth Plan.

Data documentation

General notes

Portugal's fiscal year coincides with the calendar year. Following OECD convention, amounts prior to 1999 are expressed as 'euro-fixed series', meaning that we applied the fixed EMU conversion rate (1 EUR = 200.482 PRT) to data initially expressed in the Portuguese Escudos (PRT).

Producer Support Estimate

Reduced VAT for Oil and Gas Exploration (no data available)

Decree-Law 394-B from 1984 established the Code for Value Added Tax (*Código do Imposto sobre Valor Acrescentado*, or CIVA). This code was subsequently amended and updated several times, and its Annex II establishes that a lower rate of VAT should apply to tools, machines and other equipment used exclusively or mostly in the exploration for oil or natural gas. Starting from January 2012, the rule in Annex II establishing a lower VAT for oil and natural gas exploration was phased out.

No estimates of the revenue foregone due to this particular measure are available.

Sources: CIVA (1984).

Corporate-Revenue Tax Deductions for Oil Exploration and Production (no data available)

Article 42 of Portugal's Corporate-Revenue Tax Code (IRC) allows companies undertaking oil exploration and production (E&P) activities to deduct the smallest of the following amounts from their tax base for corporate-revenue-tax purposes, provided that such value is invested in other E&P activities in Portugal in the following three fiscal years: (i) 30% of the gross value obtained from sales of oil produced in the area of concession in the corresponding fiscal period; (ii) or 45 % of the amount that would have been collected were the previous deduction not available.

No estimates of the revenue foregone due to this particular measure are available.

Sources: CGE (various years).

Consumer Support Estimate

Fuel-Tax Exemption for Certain Motor Vehicles (no data available)

The use of Liquefied Petroleum Gas (LPG) and natural gas in public-transport vehicles (i.e. bus fleets) is fully exempt from the excise tax that is normally levied on most sales of petroleum products in Portugal. A lower rate of excise tax also applies to coloured and marked diesel fuel used in machinery and equipment for agriculture and forestry purposes.

No estimates of the revenue foregone due to this particular measure are available.

Sources: CIVA (1984).

Fuel-Tax Exemption for Coastal and Inland Navigation (data for 2001-)

Sales of motor fuels in Portugal are exempt from the country's fuel excise tax (the ISP) when used in coastal and inland water commercial navigation, including fishing, cabotage, public maritime leisure, and dredging operations in ports and waterways.

We allocate the annual amounts reported in the State Budget Account (CGE) to diesel fuel and fuel oil on the basis of the IEA's Energy Balances for the domestic navigation sector.

Sources: CGE (various years), CIVA (1984), IEA.

Tag: PRT_te_01

Fuel-Tax Exemption for Railway Vehicles (data for 2001-)

Sales of diesel fuel in Portugal are exempt from the country's fuel excise tax when used in railway locomotives.

Sources: CGE (various years).

Tag: PRT_te_02

Fuel-Tax Reduction for Agriculture Machinery (data for 2001-)

The use of coloured and marked diesel fuel in tractors and other farm machinery in Portugal attracts a lower rate of excise tax than that applied to most other uses of such fuels.

We allocate this measure entirely to diesel fuel given the very small use of gasoline in farming activities in Portugal.

Sources: CGE (various years), CIVA (1984).

Tag: PRT_te_03

Fuel-Tax Reduction for Fixed Engines and Heating (data for 2001-)

The use of diesel fuel for heating purposes and in power-generating engines, such as small-scale fixed generators, compressors, and heating boilers, benefits from a reduction in the rate of fuel excise tax normally applicable to most uses of petroleum products in Portugal.

Sources: CGE (various years).

Tag: PRT_te_04

Fuel-Tax Exemption for Electricity Generators (data for 2001-)

The use of coal, coke, and fuel oil by electric utilities or CHP plants in Portugal is exempt from the country's fuel excise tax. The use of diesel fuel for the same purpose is exempt from excise tax only in the two Autonomous Regions of Portugal (Azores and Madeira).

We allocate this measure to bituminous coal and fuel oil on the basis of the IEA's Energy Balances for the electricity-generation sector (main-activity electricity plants and CHP plants).

Sources: CGE (various years), IEA.

Tag: PRT_te_05

Fuel-Tax Exemption for Certain Industrial Processes (data for 2004-)

The use of petroleum products as industrial fuels in electrolytic, metallurgical, and mineralogical processes in Portugal is exempt from the country's fuel excise tax. To qualify for this exemption, approved installations must be under an emissions license scheme or an energy-efficiency agreement.

We allocate this measure to diesel fuel, LPG, and fuel oil on the basis of the IEA's Energy Balances for the following sectors: iron and steel, and non-ferrous metals.

Sources: CGE (various years), IEA.

Tag: PRT_te_06

Sources

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Energy statistics

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Table 27.1. Summary of fossil-fuel support to coal - Portugal

(Millions of EUR, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Consumer support								
Fuel tax exemption for electricity generators	Central	19	11	9	8	8	8	4
Fuel tax exemption for certain industrial processes	Central	0	0	5	8	8	9	9

Note: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Table 27.2. Summary of fossil-fuel support to petroleum - Portugal

(Millions of EUR, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Consumer support								
Fuel-tax exemption for electricity generators	Central	9	3	2	2	1	2	8
Fuel-tax reduction for agriculture machinery	Central	57	62	74	71	66	67	67
Fuel-tax reduction for fixed engines and heating	Central	68	74	67	48	52	52	30
Fuel-tax exemption for certain industrial processes	Central	21	23	15	8	12	7	6
Fuel-tax exemption for railway vehicles	Central	9	10	11	10	9	8	7
Fuel-tax exemption for coastal and inland navigation	Central	27	27	27	25	23	22	20

Note: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Chapter 28.

SLOVAK REPUBLIC

This chapter identifies, documents, and provides estimates of the various budgetary transfers and tax expenditures that relate to the production or use of fossil fuels in the Slovak Republic. An overview of the country's energy economy is first given to place the measures listed into context. A data-documentation section then describes those measures in a systematic way. Whenever possible, the description details a measure's formal beneficiary, its eligibility criteria and functioning, and the fuels whose production or use stand to benefit from the measure. The chapter ends with a set of tables that provide, subject to availability, quantitative information and estimates for the various measures listed.

Energy resources and market structure

Fossil fuels accounted for over 70% of the Slovak Republic's total primary energy supply (TPES) in 2010. Natural gas made up the largest share of TPES (30%), followed by oil (21%) and coal (20%). The rest of the country's demand was met by a mix of nuclear power (22%) and renewable energy (7%). The Slovak Republic, with its limited energy resources, imports almost 80% of its TPES. Almost all petroleum products are imported from Russia. In 2010, most electricity was generated from nuclear energy (53%), followed by coal (15%) and hydropower (20%). Only 7% and 2%, respectively, was generated from natural gas and oil. The amounts of natural gas used in the transformation sector are expected to be raised by the increased deployment of combined-cycle gas turbines. The country's energy mix has been steadily moving away from coal as the dominant energy source, which has been largely replaced by natural gas and nuclear energy. Coal is the only source of fuel whose consumption is expected to decline significantly over the coming years.

The Slovak Republic's natural gas supply comes almost entirely from Russia. The state remains in control of the gas monopoly, which has a strategic role in the country. SPP (Slovensky Plynarensky Priemysl), the dominant natural-gas importer, remains the parent company of the transmission system operator, Eustream, and the main distribution system operator, SPP Distribucia. Eustream, which transports Russian natural gas to Western and Southern Europe, is one of the biggest transmission system operators on the continent. Apart from SPP Distribucia, there are a few small, independent local distribution companies that are active in the market. Nafta and Pozagas are two storage-system operators. Nafta is partially owned by SPP (56%) and E.ON Ruhrgas (40%), while the shares of Pozagas are in the hands of SPP (35%), Nafta (35%) and GDF (30%). SPP is the leading supplier of natural gas with a market share of over 80%. The company is 51% state-owned; the rest of its shares belong to a consortium of E.ON Ruhrgas and GDF. Other natural gas suppliers are local branches of international firms, e.g. RWE Gas, VNG and Shell.

Crude oil is imported almost entirely from Russia, while the Slovak Republic has small reserves of crude oil located in the west of the country, in the Gbely area and in the Vienna basin. Crude oil is refined and exported, mostly as diesel, to neighbouring countries, primarily Austria and the Czech Republic. Nafta a.s. is involved in natural gas production and building and operating underground gas-storage facilities. Most of the oil infrastructure is operated by two companies, Transpetrol and Slovnaft. Transpetrol (fully state-owned) is the only operator of the crude pipeline network, while Slovnaft (owned by the Hungarian MOL group) operates the country's refinery and product-pipeline network. Slovnaft commands a dominant position in the domestic market, supplying nearly two-thirds of all transport fuels.

In 2010, only about 15% of the coal consumed was met by domestic mines. Lignite is still mined by three companies at five underground mines. Although the Slovak Republic has substantial deposits of lignite, it intends to gradually reduce its lignite production.

Since the collapse of the Communist bloc, the Slovak Republic has gradually been introducing a market-based regulatory framework for the energy sector and a programme of restructuring of state-owned energy enterprises. The three biggest energy companies have been privatised, either partially or entirely. The last liberalisation package was introduced in March 2011. Currently, all consumers can choose their electricity and natural gas suppliers. Despite the fact that gas transmission and distribution were unbundled in 2006, the switching of natural gas suppliers has not been fully effective due to the monopolistic nature of the sector.

Prices, taxes and support mechanisms

The Regulatory Office for Network Industries (RONI) is responsible for electricity and natural gas price regulation. End-user prices of both electricity and natural gas for households are regulated by RONI, with the objective of attaining cost-effective prices defined as prices that at the same time would secure sufficient maintenance and investment in the country's energy infrastructure and would protect the rights of the most vulnerable households. Prices of oil products and coal are no longer regulated.

The current law on taxation of electricity, coal and natural gas was implemented in 2007 (Act No. 609/2007). The tax on electricity is imposed on all electricity, with the exception of electricity produced from renewable-energy sources. Some electricity uses and users are exempt from the tax: electricity used in public transport, in the transport of goods, for energy-intensive processes and combined heat and power (CHP) generation. The Slovak Republic also levies a tax on coal and natural gas, except for coal or natural gas used in CHP generation, public transport and goods transportation. Mineral oils are subject to an excise tax as stipulated by Act No. 98/2004. Diesel used in agriculture, biofuels and LPG were formerly exempt from the excise tax, but all these exemptions were abolished in 2011. Since 2004, a full VAT rate (currently 20%) has been levied on all sales of energy.

Since 2005, electricity produced from domestic coal has been supported through a refund of the production costs of electricity produced from domestic coal. The burden of this refund falls partially on electricity consumers (and is reflected in higher electricity prices) and partially on the budget chapter of the Ministry of the Economy. Currently, there is one power plant that benefits from this support measure – the Nováky thermal power plant. There are also plans to finance retrofitting of this power plant from public resources. The Slovak Republic still provides some investment aid to the coal-mining sector, which is in line with the EU's legal framework for authorisation of aid to the coal sector.[1] Until the end of 2010, direct subsidies for lignite mining were aimed at both raising accessibility of lignite reserves and reduction and liquidation of currently operating mines, and at covering inherited social liabilities, such as pension payments to miners. The amount of these direct subsidies in the period between 2004 and 2010 totalled about SKK 848 million or EUR 28.1 million. As of 2011, state aid is granted only for the closure of uncompetitive coal mines.

Data documentation

General notes

The fiscal year in the Slovak Republic coincides with the calendar year. Data prior to 2009 was converted to "euro-fixed series" by the Ministry of Finance (unless otherwise specified).

1 This legal framework, until 31 December 2010, had been determined by the Council Regulation 1407/2002/EC of 23 July 2002 on State aid to the coal industry, which allowed member states to gent aid to the coal industry under certain conditions. On 10 December 2010 the European Union adopted the Council Decision 2010/787/EC, which currently allows member states to grant aid for closure of uncompetitive coal mines provided the supported coal mines close before 31 December 2018.

Producer Support Estimate

Raising Accessibility of Lignite Reserves in Hornonitranske Bane, Prievidza, a.s. (data for 2006-2010)

Direct grants for raising accessibility of lignite reserves at the Hornonitranske Bane, Prievidza, a.s., a joint-stock lignite-mining company, were provided by the state in the period between 2006 and 2010. The joint-stock company submitted a plan in which it envisaged extracting 12.2 million tonnes of lignite in three extraction areas: Nováky, Cígel' and Handlová in the period between 2005 and 2010.

The scheme was launched by the government decision N 324/2005 of 27 January 2006 and approved by the European Commission's decision K(2006)92.

Annual payments have been allocated to PSE as they directly support extraction of lignite.

Sources: Ministry of Finance (2011); Ministry of the Economy.

Tag: SVK_dt_01

Consumer Support Estimate

Feed-In Tariff for Domestic Lignite (data for 2007-)

Electricity produced from domestic coal has been supported in the Slovak Republic since 2005. Since producing electricity from lignite is significantly more expensive than electricity production from other energy sources, those power plants that produce electricity from domestic lignite are refunded for this activity (up to 15% of total electricity generation can be subject to such a refund). The amount of the refund is determined annually by RONI that publishes the subsidy amount per every MWh of lignite-fired electricity fed to the network. RONI also sets the annual price of lignite.

Currently, the only power plant benefitting from this scheme is the Nováky thermal power plant. In 2011, the measure was extended until 2020, with the possibility of further extension until 2035.

Data estimates are available from 2007.

Sources: IFP (2011); National Reform Programme of the Slovak Republic for 2011-2014; IEA Review of the Energy Policies of Slovakia 2010.

Tag: SVK_dt_02

Exemptions from the Coal Tax (data for 2008-)

As stipulated by § 19 of the Act No. 609/2007, use of coal is fully exempt from the coal tax, if it is used: (a) for dual use, i.e. as fuel and for other purposes; (b) in mineralogical processes; (c) for a purpose other than that of a motor fuel or fuel for heat generation; (d) in the combined generation of electricity and heat; (e) in electricity generation; (f) for production of coke and semi-coke; (g) in commercial activities directly related to railroad or river transportation of persons or cargo; (h) by households; (i) for operational and technological purposes in a mining and coal processing company; (j) in the generation of heat for households.

The scheme was introduced on 1 May 2004. Data are available for the period 2008-10. Payments pertaining to production of coke and semi-coke are excluded from the estimates as the primary aim of this particular part of the tax exemption is to avoid double taxation.

Tax exemption for coal used (j) in the generation of heat for households was abolished as of 1 January 2011.

Sources: Act No. 609/2007; Ministry of Finance.

Tag: SVK_te_01

Exemptions from the Natural Gas Tax (data for 2008-)

As stipulated by § 31 of Act No. 609/2007, use of natural gas is fully exempt from the natural gas tax, if it is used: (a) for dual use, i.e. as fuel and for other purposes; (b) in mineralogical processes; (c) for a purpose other than that of a motor fuel or fuel for heat generation; (d) in the combined generation of electricity and heat; (e) in electricity generation; (f) as a motor fuel; (g) by households; (h) for operational and technological purposes in a gas undertaking, including losses in a technologically justified quantity;[2] (i) in the generation of heat for households; (j) in commercial activities directly related to railroad or river transportation of persons or cargo.

The scheme was introduced on 1 May 2004. Data are available for the period 2008-10. Tax exemption for natural gas used (f) as motor fuel and (i) in the generation of heat for households was abolished as of 1 January 2011.

Sources: Act No. 609/2007; Ministry of Finance.

Tag: SVK_te_02

Reduced Excise Duty on Red Diesel (data for 2005-2010)

As stipulated by the Article 7 of the Act No. 98/2004 on the Excise Duty on Mineral Oil, a reduced excise-tax rate on diesel applies to diesel used for (a) railroad transportation of persons or cargo and for repair and maintenance of the railway network, (b) machines used in agriculture, and (c) stationary engines and equipment for electricity production. Diesel used for such purposes is dyed red, hence the name "red diesel" ("*červena nafta*"). The scheme was introduced on 1 May 2004 was abolished as of 1 January 2011.

Data for the period 2005-2007 were provided by the Ministry of Agriculture — these estimates encompass only tax expenditures related to a reduced excise-tax rate on diesel used as fuel in machines for agriculture. We expressed data for this period, following the OECD convention, as "euro-fixed series", meaning that the fixed EMU conversion rate (1 EUR = 30.1260 SKK) was applied to data initially expressed in Slovak koruna (SKK).

Data for the period 2008-2010 were provided by the Ministry of Finance — these estimates encompass all tax expenditures related to use of red diesel.

Sources: Ministry of Agriculture; Ministry of Finance.

Tag: SVK_te_03

Reduced Excise Duty on LPG (data for 2008-2010)

As stipulated by the File 253 of the Amendments to Act No. 98/2004 on the Excise Duty on Mineral Oil, an excise tax exemption applies to LPG used as fuel. The scheme was introduced on 1 July 2008 and it was abolished as of 1 January 2011.

Sources: Ministry of Finance.

Tag: SVK_te_04

[2] This also applies to natural gas transmission and distribution if the Customs Office assesses, on the basis of a decision by the Regulatory Office for Network Industries, that the incurred losses of natural gas correspond to the character of activity of the gas undertaking and to the usual quantity of losses of another natural gas undertaking that performs identical or similar activities.

Coal Allowances for Former Miners and Miners' Widows (data for 2007-)

Traditional in-kind benefits for miners include free provision of coal which used to serve heating and water-warming purposes. Since 16 January 1992, such allowances are granted to the former miners and miners' widows who have been approved by an expert commission once they meet certain conditions.

Sources: Ministry of the Economy.

Tag: SVK_dt_06

General Services Support Estimate

Severance Payments for Miners Laid Off by Hornonitranske Bane, Prievidza, a.s. (data for 2005)

Severance payments for miners laid off by the Hornonitranske Bane, Prievidza, a.s, a joint-stock lignite-mining company, were provided in a form of a one-off direct grant paid out in 2005, as stipulated in the government decision N 168/2005 from 7 April 2005.

Since the grant did not increase the current production or consumption of lignite, the payments have been allocated to GSSE.

Sources: Ministry of Finance (2011); Ministry of the Economy.

Tag: SVK_dt_03

Retirements Benefits for Miners from Hornonitranske Bane, Prievidza, a.s. (data for 2005-2006)

Retirement benefits for miners from the Hornonitranske Bane, Prievidza, a.s., a joint-stock coal-mining company, were provided in a form of two direct payments of equal amounts in 2005 and 2006 as stipulated by two government decisions, N 419/2005 of 6 October 2005 and N 387/2006 of 13 September 2006 respectively.

Since these grants did not increase the current production or consumption of lignite, the payments have been allocated to GSSE.

Sources: Ministry of Finance (2011); Ministry of the Economy.

Tag: SVK_dt_04

Support for Phasing Out Mining Activity by Baňa Dolina, Vel'ký Krtíš, a.s. (data for 2004-2010)

Direct grants for phasing out mining activity at the lignite mines owned by the Baňa Dolina, Vel'ký Krtíš, a.s, a joint stock coal-mining company, were provided by the state in the period between 2004 and 2010, as stipulated by the government decision NN 9/2006.

Since these payments did not increase the current production or consumption of lignite, they are allocated to GSSE.

Sources: Ministry of Finance (2011); Ministry of the Economy.

Tag: SVK_dt_05

Sources

Policies or transfers

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Energy statistics

IEA (2011), *Energy Balances of OECD Countries*, International Energy Agency, Paris.

Table 28.1. Summary of fossil-fuel support to coal – Slovak Republic

(Millions of EUR, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Producer support								
Support for capital formation								
Raising accessibility of lignite reserves in Hornonitranske Bane, Prievidza, a.s.	Central	n.a.	4	4	4	5	5	5
Consumer support								
Exemptions from the coal tax	Central	..	..	..	34	36	38	39
Coal allowances for former miners and miners' widows	Central	..	..	0.5	0.5	0.4	0.4	0.4
Feed-in-tariff for domestic lignite	Central	..	..	35	52	54	67	71
General services support								
Retirements benefits for miners from Hornonitranske Bane, Prievidza, a.s.	Central	1	1	n.a.	n.a.	n.a.	n.a.	n.a.
Support for phasing out mining activity by Bana Dolina, Vel'ky Krtis, a.s	Central	1	0.4	0.3	0.2	0.2	0.2	<0.1
Severance payments for miners laid off by Hornonitranske Bane, Prievidza, a.s.	Central	1	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic.

Table 28.2. Summary of fossil-fuel support to petroleum – Slovak Republic

(Millions of EUR, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Consumer support								
Reduced excise duty on LPG	Central	n.a.	n.a.	n.a.	5	5	5	n.a.
Reduced excise duty on red diesel	Central	31	32	33	42	44	46	n.a.

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic.

Table 28.3. Summary of fossil-fuel support to natural gas – Slovak Republic

(Millions of EUR, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Consumer support								
Exemptions from the natural-gas tax	Central	..	..	..	25	26	52	50

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic.

Chapter 29.

SLOVENIA

This chapter identifies, documents, and provides estimates of the various budgetary transfers and tax expenditures that relate to the production or use of fossil fuels in Slovenia. An overview of the country's energy economy is first given to place the measures listed into context. A data-documentation section then describes those measures in a systematic way. Whenever possible, the description details a measure's formal beneficiary, its eligibility criteria and functioning, and the fuels whose production or use stand to benefit from the measure. The chapter ends with a set of tables that provide, subject to availability, quantitative information and estimates for the various measures listed.

Energy resources and market structure

Fossil fuels accounted for around two-thirds of the Slovenia's total primary energy supply (TPES) in 2010. Oil made up the largest share (34%), followed by coal (20%) and natural gas (12%). Nuclear energy accounted for about a fifth of TPES, while renewable energy and waste accounted for the remaining 15% (hydropower alone accounted for 6%). In 2010, nuclear energy and coal were the primary source of electricity generation (each accounted for 35% of electricity generation), followed by hydropower (31%). Small amounts of electricity were produced from natural gas (3%) and oil (less than 1%).

The indigenous energy sources in Slovenia – domestic coal, electricity produced from nuclear power and hydropower, and renewable energy sources (biomass, biogas, waste) – cover 52% of Slovene energy needs. For other energy sources, such as coal of higher calorific values, petroleum products and natural gas, Slovenia depends on imports. In 2010, final energy consumption in Slovenia increased by 3% compared with 2009. The increase of total final energy consumption was mainly influenced by higher consumption of renewable energy sources (up 10%), heat (up 7%), electricity and natural gas (both up by 6%). For the second consecutive year, the consumption of liquid fuels fell by 2%. While the consumption of diesel in transport remained at about the same level as in the previous year, the consumption of motor gasoline in 2010 was 5% lower.

Slovenia produces negligible amounts of oil and natural gas; it is thus completely reliant on imports of these two fuels. Natural gas is purchased through long-term contracts with Russia, Algeria and Austria. Lignite, on the other hand, has always been an important domestic source of energy. In 2010, a third of all electricity in Slovenia was generated from domestic lignite, currently produced in the Velenje mine, and more than 85% of the demand for coal was met by domestic production. This coal is of very low calorific value and contains high levels of sulphur and ash.

The main electricity producers are three power plants: Krško (nuclear), Šoštajn (thermal) and Dravske Elektrarne (hydro). GEN Energija, which is wholly owned by the state, holds a 50% share of Nuklearna Elektrarna Krško (NEK), the remaining 50% of the shares belonging to the Croatian electricity supplier, Hrvatska Elektropriveda. NEK thus produces electricity for these two shareholders, each of which has a right and an obligation to use 50% of NEK's total output. Five distribution companies – Elektro Ljubljana, Elektro Maribor, Elektro Celje, Elektro Primorska, and Elektro Gorenjska – supply electricity to all consumers, except for the five largest industrial consumers, for which electricity is directly supplied by the only transmission system operator in the country, Elektro-Slovenija (ELES). ELES transmits all electricity produced by the generating companies and is 100% state-owned.

Slovenia adopted a Strategy of Use and Supply of Energy in 1996. The focus of the document is on energy efficiency and fulfilment of the following energy-policy objectives: phasing out nuclear energy, restoring thermal power stations and constructing new ones, as well as increasing reliance on natural gas and renewable energy. The framework for the energy market in Slovenia is provided by the Energy Act of 1999. The National Energy Programme (NEP), adopted in April 2004, defines diversification of energy sources and ensuring reliability and quality of energy supply as the main energy-policy objectives. The NEP also encourages energy efficiency and consumption of renewable energy. In 2008, Slovenia adopted its Energy Efficiency Action Plan for the years 2008-16 and, in 2010, the National Action Plan for Renewable Energy Sources for the period 2010-20. Both of these plans are within the EU energy-policy framework.

Prices, taxes and support mechanisms

The national regulator, the Slovenian Energy Agency (SEA), encourages competition in the energy market. The electricity market was opened in 2001 for companies and in 2007 for households, thus currently all consumers can choose their electricity supplier. Electricity prices are set by the electricity distributors.

Unbundling is currently limited to businesses accounts only, as the Energy Act of 1999 stipulates that transmission, distribution and operation of the relevant networks are to be national commercial public services. Electricity produced from renewable energy is given a guaranteed purchase price (feed-in tariffs) in order to encourage production of electricity from renewable-energy sources.

A full VAT (currently 20%), excise-duty and CO_2-tax rates are levied on all fossil-fuel products. Since February 2010, an energy-efficiency fee has been imposed on the consumption of fossil fuels and electricity. In line with the EU regulation, companies involved in the EU emission trading schemes (ETS) are exempt from the energy-efficiency fee payments. All energy-intensive companies are exempt from the CO_2 tax. Also, some uses and users of fuel are exempt from the excise duty that is normally levied on fuel consumption, e.g. for motor fuel used in machinery or in public transport.

Data documentation

General notes

The fiscal year in Slovenia coincides with the calendar year. The conversion into EUR for the estimates in the period prior to 2007 was made by the Ministry of Finance, which kindly provided all estimates and fuel allocations.

Producer Support Estimate

Market Price Support for Domestic Coal (data for 2001-)

In order to ensure security of electricity supply, the government may, according to the Energy Act, specify the quantity of the primary energy from domestic sources to be used by electricity producers for electricity production in a given year. In any given year, the quantity of primary energy from domestic sources may not exceed 15% of total primary energy needed for the production of electricity consumed domestically in this given year.

If the price at busbars of electricity generated from the domestic sources exceeds the market price of electricity generated from comparable generation units, the producers who took up the obligation to produce from the domestic energy sources (every year there is a call for tenders, after which one or more such producers are selected) receive a reimbursement of the additional costs incurred.

Since this measure benefits domestic coal producers, the payments are allocated to the PSE.

Sources: Ministry of Infrastructure and Spatial Planning.

Tag: SVN_dt_01

Consumer Support Estimate

Feed-In Tariff for Natural Gas Used in CHP Plants (data for 2002-)

Use of natural gas in CHP plants is encouraged through provision of a feed-in tariff for this particular fuel. The value of the feed-in tariff is determined by the reference cost of electricity production.

Sources: Ministry of Infrastructure and Spatial Planning.

Tag: SVN_dt_02

Exemption from Excise Duty for Certain Uses of Energy Products (data for 2000-)

The measure came into force in July 1999. Article 55 of the Excise Duty Act stipulates that some certain uses of energy products are exempt from excise-duty payments. This exemption is granted to, e.g. energy products used as motor fuel in commercial air, maritime transport; in power plants for combined heat and power generation and in production facilities for further processing or production of other non-excise products or other energy products and electricity, except if they were used as motor fuels for means of transport.

The estimates pertain to coal, diesel oil, motor gasoline, kerosene and natural gas. In accordance with the provisions of the Excise Duty Act the excise duty is levied on mineral oils, since the definition of "mineral oils" in the period 2000-2004 did not include coal, this type of excise duty on energy products has not been accounted for until 2005. The estimates also do not include excise-tax exemptions granted to international air and maritime transport. Neither do they include exemptions from excise duty on fuels used in fishing boats (see SVN_te_02).

Sources: Customs Administration of the Republic of Slovenia, Excise Duty Act, Ministry of Finance, Taxation in Slovenia 2011.

Tag: SVN_te_01

Exemption from Excise Duty on Fuels Used in Fishing Boats (data for 2000-)

From 1999 onwards, use of energy products and electricity is, according to the Excise Duty Act, exempt from payment of excise duty when energy products are used as fuels in fishing boats, except if used for private purposes.

Annual payments have been allocated to motor gasoline.

Sources: Customs Administration of the Republic of Slovenia, Excise Duty Act, Ministry of Finance, Taxation in Slovenia 2011.

Tag: SVN_te_02

Exemptions from Excise Duty on Fuel for Diplomatic Missions, etc. (data for 2000-)

The scheme was introduced in July 1999. According to Article 31 of the Excise Duty Act, certain goods, including petrol, are exempted from payment of excise duty, including those intended for export or for delivery in the context of diplomatic or consular relations, for international organisations, personal needs of foreign staff of diplomatic and consular missions or international organisations, or the needs of armed forces of other state parties to international alliances.

Annual payments have been allocated to diesel oil.

Sources: Customs Administration of the Republic of Slovenia, Excise Duty Act, Ministry of Finance, Taxation in Slovenia 2011.

Tag: SVN_te_03

Partial Refund of Excise Duty on Fuel Used in Stationary Working Machinery (data for 2000-)

If a user of motor fuel can prove that the fuel was used e.g. in stationary working machinery, machinery used in construction engineering and for powering mechanised tools in railway transport or in cable cars, this user is entitled to a 50% refund of the excise duty normally applied to motor fuel. This partial refund of excise duty was introduced in 1999 by §7 of Article 54 of the Excise Duty Act.

Annual payments have been allocated to diesel oil as it accounts over 99% of the payments.

Sources: Customs Administration of the Republic of Slovenia, Excise Duty Act, Ministry of Finance, Taxation in Slovenia.

Tag: SVN_te_04

Partial Refund of Excise Duty on Motor Fuel Used in Agricultural and Forestry Machinery (data for 2000-2010)

The scheme was introduced in July 1999 by §9 of Article 54 of the Excise Duty Act. If a user of motor fuel can prove that the fuel was used in agricultural and forestry machinery (including tractors), this user entitled to a partial refund (in the period from 2000 to 2009 the refund was 50%, since then it was raised to 70%) of the excise duty normally applied to motor fuel.

Annual payments have been allocated to diesel oil.

Sources: Customs Administration of the Republic of Slovenia; Excise Duty Act; Ministry of Finance; Taxation in Slovenia 2011.

Tag: SVN_te_05

Refund of Excise Duty on Diesel Used as Fuel for Commercial Purposes (data for 2009-)

From 2009 onwards, diesel used commercially as fuel is granted a refund up to amount of EUR 330 per 1 000 litres, which is the EU minimum, according to the Energy Directive (Article 7).

That scheme is stipulated by §19 of Article 55of the Excise Duty Act.

All payments have been allocated to diesel oil.

Sources: Customs Administration of the Republic of Slovenia, Excise Duty Act, Ministry of Finance, Taxation in Slovenia 2011.

Tag: SVN_te_06

CO_2 Tax Reimbursement for Companies Participating in the Emission Reductions Programme (2005-2009)

Those companies outside the EU ETS that signed an agreement with the Ministry of the Environment on reducing their carbon emissions were entitled to a reimbursement of the CO_2-tax payments for fuel combustion in the period from 2005 until 2009. As of 2010, the companies are no longer entitled to reimbursements.

The estimates pertain to coal, natural gas and diesel oil.

Sources: CDET (2011), Customs Administration of the Republic of Slovenia, EC (2005); Ministry of Agriculture and the Environment.

Tag: SVN_te_07

General Services Support Estimate

Closing of Trbovlje – Hrastnik Coalmine (data from 2001-)

Special attention was given to the Zasavje region, where direct regional incentives were given on the basis of the Regulating the Gradual Closure of the Trbovlje-Hrastnik Mine Act. The financing is defined as a granted state aid and has been prepared in accordance with the European Commission Regulation.

Sources: Ministry of Infrastructure and Spatial Planning.

Tag: SVN_dt_03

Sources

Policies or transfers

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Energy statistics

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Statistical Office of Slovenia, Annual energy statistics, Slovenia, 2010, Available at: *www.stat.si/eng/novica_prikazi.aspx?id=4238*.

Table 29.1. Summary of fossil-fuel support to coal - Slovenia

(Millions of EUR, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Producer support								
Support to unit returns								
Market Price Support for domestic coal	Central	21	21	17	15	9	7	7
Consumer support								
Exemption from excise duty for certain uses of energy products	Central	23	16	16	16	15	18	18
CO2-tax reimbursement for companies participating in the emission-reductions programme	Central	<0.1	0.1	0.1	<0.1	<0.1	0	n.a.
General services support								
Closing of Trbovlje-Hrastnik coalmine	Central	15	17	17	21	17	14	14

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was kindly provided by the Ministry of Finance.

Table 29.2. Summary of fossil-fuel support to petroleum - Slovenia

(Millions of EUR, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Consumer support								
Partial refund of excise duty on motor fuel used in agricultural and forestry machinery	Central	6	5	6	7	13	15	15
Exemptions from excise duty on fuel for diplomatic missions, etc.	Central	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Partial refund of excise duty on fuel used in stationary working machinery	Central	8	9	11	11	14	13	13
CO2-tax reimbursement for companies participating in the emission-reductions programme	Central	<0.1	0.5	0.3	0.2	0.1	<0.1	n.a.
Exemption from excise duty on fuels used in fishing boats	Central	<0.1	<0.1	<0.1	0.1	0.1	0.1	0.1
Exemption from excise duty for certain uses of energy products	Central	8	8	10	11	11	10	10
Refund of excise duty on diesel used as fuel for commercial purposes	Central	n.a.	n.a.	n.a.	n.a.	26	46	46

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was kindly provided by the Ministry of Finance.

Table 29.3. Summary of fossil-fuel support to natural gas - Slovenia

(Millions of EUR, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Consumer support								
CO_2-tax reimbursement for companies participating in the emission-reductions programme	Central	<0.1	1	1	0.5	0.3	0	n.a.
Exemption from excise duty for certain uses of energy products	Central	4	4	4	3	4	5	5
Feed-in-tariff for natural gas used in CHP plants	Central	6	6	8	7	6	13	13

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was kindly provided by the Ministry of Finance.

Chapter 30.

SPAIN

This chapter identifies, documents, and provides estimates of the various budgetary transfers and tax expenditures that relate to the production or use of fossil fuels in Spain. An overview of the country's energy economy is first given to place the measures listed into context. A data-documentation section then describes those measures in a systematic way. Whenever possible, the description details a measure's formal beneficiary, its eligibility criteria and functioning, and the fuels whose production or use stand to benefit from the measure. The chapter ends with a set of tables that provide, subject to availability, quantitative information and estimates for the various measures listed.

Energy resources and market structure

The only fossil-fuel domestic resource of any consequence in Spain is coal, but most production is uneconomic. Almost all of the oil and gas used in Spain is imported, with less than 1% being domestically produced. Oil is by far the most important fuel, meeting 46% of the country's primary energy needs, followed by natural gas (24%), nuclear power (13%) and coal (6%). Renewable energy, mainly in the form of biomass, makes up the rest (11%). Production of wind and solar power contributes 17% to electricity generation and has been growing rapidly in recent years, thanks to large subsidies. Counting nuclear power as an indigenous resource, national production covers about a quarter of total energy use.

Spain's coal-mining industry is consolidating and production is declining. The sector is undergoing major restructuring since the early 90's with the implementation of consecutive National Plans for Strategic Coal Reserves (*Plan Nacional de Reserva Estratégica de Carbón*) in 1990-1994, 1995-1997, 1998-2005 and 2006-2012. These plans set out targeted reductions in production, staffing and subsidies, supply guarantees and economic restructuring policies for the coal-mining regions. Most companies have an annual production capacity below 500 000 tonnes, with some employing fewer than 25 miners. The largest is UMINSA (*Unión Minera del Norte* S.A.), a privately owned company that resulted from a merger of 15 independent companies. The other major operator in terms of staff is the state-owned HUNOSA (*Hulleras del Norte* S.A.). Use of Spanish coal at power plants, the principal market, is based on volume quotas set by the government. Power producers contract directly with mining companies for the volume and price of coal under their quota.

Spain's oil sector is entirely deregulated and privately owned. Of the country's ten refineries, four are fully-owned and one is partly owned by Repsol YPF, amounting to about 56% of total refining capacity; three others are owned by Cepsa (about 33%) and one by BP (11%). There are a large number of companies active in the wholesale and retail markets. The gas sector is also privately owned, with a number of players active in one or more parts of the supply chain. Gas Natural, the former monopoly gas company, still accounts for half of all gas imported into Spain and almost half of retail sales. Ibredrola is the next largest importer and retailer. Enagás is the sole operator of the transmission system operator and also holds half of the country's LNG regasification capacity. The retail market for industrial customers is fairly competitive; competition in the residential market is much more limited.

Spain was among the first EU countries to embark on power-sector liberalisation in the 1990s, resulting in a major restructuring of the sector and changes in ownership. Today, three-quarters of electricity is generated by just three companies: Iberdrola, Endesa (almost 100% owned by the Italian utility, ENEL) and Unión Fenosa (owned by Gas Natural). Iberdrola and Endesa alone account for the bulk of retail sales, though the market is fully contestable. Because of subsidised retail prices for low-voltage consumers, supplier switching has hardly developed. REE (*Red Eléctrica de España*), in which the state holds a 20% stake, operates the high-voltage transmission grid as the exclusive transmission system operator in co-ordination with the market operator; it owns almost the entire 400 kV grid and two-thirds of the 220 kV grid. Iberdrola, Endesa and Unión Fenosa are the largest distributors, although there are more than 300 small local distributors.

Prices, taxes and support mechanisms

All energy prices in Spain are determined by free-market competition, with the exception of LPG, the prices of which are set according to a formula based on international prices and a distribution margin, and electricity and gas tariffs for the smallest customers, who are eligible for a cost-covering last-resort tariff. The government has nominated five suppliers of gas (Gas Natural, Endesa, Iberdrola, Naturgas and Unión Fenosa) and five for electricity (Endesa,

Iberdrola, Unión Fenosa, Hidrocantábrico and E.ON) under this tariff. Together with tariffs for third-party access to all basic gas infrastructures (pipelines, LNG facilities, and underground storage), last-resort tariffs are proposed by National Energy Commission (*Comisión Nacional de Energía*, or CNE) and approved by the Minister of Industry, Tourism and Trade.

Spain levies excise taxes on oil products and electricity. All energy products are subject to an 18% rate of VAT. Biofuels are exempted from tax, as are fuels used in aviation, navigation and rail transport. The tax on diesel fuel used in farming is refunded. Excise taxes on gasoline and diesel were previously relatively low, but have risen in recent years as Spain's derogation of the EU timetable to raise minimum taxes on automotive diesel expired.

The main source of support to energy production in Spain is the financial assistance to hard-coal mining. This assistance is subject to EU rules on state aid and approval by the European Commission. The principal form of aid is transfer payments by the government to private coal companies to compensate them for the difference between their operating costs and the prices at which they sell their output to local power plants (which are negotiated directly). As part of the austerity measures arising from the current economic crisis, the Spanish government seeks to cut 63% of the subsidies to coal mining companies, stating that all support measures to the industry will be terminated by 2018. Under the National Plan for Strategic Coal Reserves 2006-2012, operating aid is to be reduced by 1.25% per year for underground mines and 3.25% per year for opencast mines. Production is due to fall from 12.1 million tonnes in 2005 to 9.2 Mt in 2012, and employment from 8 310 to 5 302. Inherited liabilities aid can be used to pay benefits to former miners and cover the costs of mine closures. Aid is also available to finance mine closures, for industrialisation projects and for developing infrastructure in the affected mining regions. Another government measure provides funding to power plants for purchases of domestic coal for stockpiling. The government is also spending on R&D to develop clean-coal technology, including carbon capture and storage.

Data documentation

General notes

The fiscal year in Spain coincides with the calendar year. Following OECD convention, amounts prior to 1999 are expressed as 'euro-fixed series', meaning that we applied the fixed EMU conversion rate (1 EUR = 166.386 ESP) to data initially expressed in the Spanish Peseta (ESP).

Producer Support Estimate

Operating Aid to HUNOSA (data for 2002-)

The Spanish government has been providing financial assistance to the coal industry for several decades. Support is usually granted as part of a series of overarching, pluri-annual plans that aim at progressively rationalising and downsizing the Spanish coal industry. A dedicated agency — the Institute for the Restructuring of Coal Mining and the Alternative Development of Mining Areas (*Instituto para la Reestructuración de la Minería del Carbón y Desarrollo Alternativo de las Comarcas Mineras*) — was created in 1998 alongside the 1998-2005 National Plan for Strategic Coal Reserves to manage state aid and promote the development of mining regions. More recently, the Ministry of Industry, Tourism, and Trade negotiated a new National Coal Plan covering the 2006-2012 period with CARBUNIÓN (the Spanish coal producer association) and trade unions.

The estimates included in the database under this heading pertain to the amount of support granted to HUNOSA to cover its operating costs. HUNOSA is a major state-owned producer of hard coal in the central Asturian basin. Accordingly, we allocate the entire programme to hard coal. Data prior to 2002 are not available at the present level of detail.

Sources: Ministerio de Economía y Hacienda (various years).

Tag: ESP_dt_01

Operating Aid to Coal Producers (data for 1998-)

This item corresponds to the amounts of price support granted by the Spanish government to domestic coal producers (see also "Operating Aid to HUNOSA" above). Transfer payments are being made to private coal companies to compensate them for the difference between their operating costs and the prices at which they sell their output to local power plants. Those prices are negotiated directly between coal producers and energy utilities.

We use production data from the IEA's Energy Balances to allocate the annual amounts reported in budget documents to the various types of coal concerned (bituminous and sub-bituminous coal, lignite, and coking coal). Data are not available for the years 2000 and 2001, and prior to 1998.

Sources: Ministerio de Economía y Hacienda (various years), IEA.

Tag: ESP_dt_02

Subsidy for the Inter-basin Transport of Coal (data for 1998-)

This programme benefits electricity companies through budgetary transfers that support the transport of coal across basins. The maximum amount of aid that may be granted is set to 76 886.76 t and up to 443.800 t, depending on the year, calorific value and where the basin is located.

We use production data from the IEA's Energy Balances to allocate the annual amounts reported in budget documents to the various types of coal concerned (bituminous and sub-bituminous coal, lignite, and coking coal). Data are not available for the years 2000 and 2001, and prior to 1998.

Sources: Ministerio de Economía y Hacienda (various years), IEA.

Tag: ESP_dt_04

Adjustment Aid to Coal Producers (data for 1998-)

This item comprises transfers made by the Spanish government to private coal producers to cover social costs and contractual obligations arising from the restructuring of the coal-mining sector.

We use production data from the IEA's Energy Balances to allocate the annual amounts reported in budget documents to the various types of coal concerned (bituminous and sub-bituminous coal, lignite, and coking coal). Data are not available for the years 2000 and 2001, and prior to 1998.

Sources: Ministerio de Economía y Hacienda (various years), IEA.

Tag: ESP_dt_05

Consumer Support Estimate

Funding for Coal Stockpiles (data for 1998-)

This measure provides funding to power plants to support their constitution of coal stockpiles. Those stockpiles are meant to guarantee over 720 hours of power generation. Plants are, however, specifically required to accumulate domestic coal.

We use production data from the IEA's Energy Balances to allocate the annual amounts reported in budget documents to the various types of coal concerned (bituminous and sub-bituminous coal, lignite, and coking coal). Data are not available for the years 2000 and 2001, and prior to 1998.

Sources: Ministerio de Economía y Hacienda (various years), IEA.

Tag: ESP_dt_03

Fuel-Tax Exemptions (data for 1996-)

The Spanish Tax Code exempts certain users from the fuel tax that is normally levied on sales of petroleum products. Major eligible activities include aviation, navigation, and railway transport.

We use data from the IEA's *Oil Information* publication on consumption volumes in the domestic-aviation sector to estimate the share of the total amount of revenue foregone that can be ascribed to kerosene-type jet fuel. A benchmark rate of EUR 0.08 per litre is used for that purpose. Deducting this estimated share from the total tax expenditure leaves us with an amount that is mainly attributable (and that we attribute) to diesel fuel. Although this approach yields plausible estimates of the revenue foregone due to the exemption for aviation, it may overlook the small amounts of heavy fuel used in navigation and LPG used in certain activities (e.g. chemical reductions for the steel industry).

Sources: Ministerio de Economía y Hacienda (various years), IEA.

Tag: ESP_te_01

Fuel-Tax Reductions (data for 1996-)

This tax provision provides both the farming and mining sectors with a reduced rate of excise tax on petroleum products.

We allocate the annual amounts reported in official budget documents to diesel fuel, heavy fuel, and LPG on the basis of the IEA's Energy Balances for the agriculture and non-energy mining sectors.

Sources: Ministerio de Economía y Hacienda (various years), IEA.

Tag: ESP_te_02

Fuel-Tax Partial Refund (data for 2011-)

This tax provision was introduced in 2006 and provides eligible taxpayers with a partial refund of the special tax on hydrocarbons (*Impuesto Especial sobre Hidrocarburos*) provided diesel fuel is used for commercial activities like farming and livestock. The amount of the refund shall be equal to the rate of EUR 78.71 per thousand litres. This measure was implemented in order to offset the increase in costs of agricultural production due to rising oil prices.

Data are only available for FY2011. We allocate this measure entirely to diesel fuel.

Sources: Ministerio de Economía y Hacienda (2011).

Tag: ESP_te_03

General Services Support Estimate

Inherited Liabilities Due to Coal Mining (data for 2002-)

This programme provides certain non-profit organizations — along with coal miners and their families — with budgetary transfers to help address the social and technical costs that stem from the decline of the coal-mining sector.

This measure is allocated to the GSSE since it does not increase current production or consumption of coal. We use production data from the IEA's Energy Balances to allocate the annual amounts reported in budget documents to the various types of coal concerned (bituminous and sub-bituminous coal, lignite, and coking coal). Data are not available prior to 2002 at the present level of detail.

Sources: Ministerio de Economía y Hacienda (various years), IEA.

Tag: ESP_dt_06

Sources

Policies or transfers

Ministerio de Economía y Hacienda (various years) Presupuestos Generales del Estado, Secretaría de Estado de Hacienda y Presupuestos, Available at: *www.sepg.pap.minhap.gob.es/sitios/sepg/es-ES/Presupuestos/PresupuestosEjerciciosAnteriores/Paginas/PresupuestosEjerciciosAnteriores.aspx*.

Energy statistics

IEA (2011), *Energy Balances of OECD Countries*, International Energy Agency, Paris.

Table 30.1. Summary of fossil-fuel support to coal - Spain

(Millions of EUR, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Producer support								
Support to unit returns								
Operating aid to coal producers	Central	296	284	284	267	253	250	231
Subsidy for the Interbasin transport of coal	Central	4	7	7	11	14	13	0
Operating aid to HUNOSA	Central	89	85	85	85	80	76	72
Income support								
Adjustment aid to coal producers	Central	42	20	35	40	40	10	6
Consumer support								
Funding for coal stockpiles	Central	8	3	3	3	6	13	0
General services support								
Inherited liabilities due to coal mining	Central	258	275	290	303	328	336	327

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Table 30.2. Summary of fossil-fuel support to petroleum - Spain

(Millions of EUR, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Consumer support								
Fuel tax partial refund	Central	n.a.	n.a.	..	..	..	..	170
Fuel tax reductions	Central	604	727	669	661	827	1368	666
Fuel tax exemptions	Central	547	607	613	634	642	590	394

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Chapter 31.

SWEDEN

This chapter identifies, documents, and provides estimates of the various budgetary transfers and tax expenditures that relate to the production or use of fossil fuels in Sweden. An overview of the country's energy economy is first given to place the measures listed into context. A data-documentation section then describes those measures in a systematic way. Whenever possible, the description details a measure's formal beneficiary, its eligibility criteria and functioning, and the fuels whose production or use stand to benefit from the measure. The chapter ends with a set of tables that provide, subject to availability, quantitative information and estimates for the various measures listed.

Energy resources and market structure

Sweden has minimal fossil-energy resources, but important supplies of renewable energy, mainly in the form of biomass and hydropower. All of the country's oil, gas and coal needs are imported. Nuclear energy also plays a large role, accounting for 30% of the country's total primary energy supply (TPES), followed by biomass from the forest industry (22%). Small amounts of fuel peat are harvested in Sweden, augmented by a roughly equal amount of imported fuel peat, mainly from Belarus. Most of this peat, equal to about 1% of TPES, is used to generate hot water in district-heating plants. Non-fossil energy source together contribute two-thirds of supply — the highest share of any OECD country after Iceland. Electricity generation is almost CO_2-free: depending on hydrological conditions, hydro and nuclear power typically account for at least 90% of total annual generation in roughly equal amounts. On the other hand, energy intensity — measured as the amount of energy consumed per unit of GDP — is very high, because of the large energy requirements of heavy industry, mostly pulp and paper and iron and steel, as well as the cold climate and sparse population.

Sweden takes a free-market approach to energy policy, which puts the emphasis on competition in ensuring efficient energy supply within a policy framework that aims to encourage renewable-energy sources. The only major energy company owned by the Swedish state is Vattenfall, which is one of several major players in the Swedish electricity market. It also has overseas operations, some of which are owned by foreign governments. Most of the small local electricity distribution companies and four gas distributors are owned by municipalities.

The Swedish oil market is privately owned and fully open to competition. A Saudi-owned company, Preem, owns two of the country's five refineries and is the fourth-largest marketer of oil products after QK-Q8, Statoil and Hydro. The other three refineries are also foreign-owned, one by St1 and two jointly by Neste Oil and Petroleos de Venezuela. The natural gas market is dominated by a small number of vertically integrated companies, and most gas is supplied under long-term contracts. Currently two entities are performing the TSO function in Sweden. The state owned utility Svenska Kraftnät (also TSO for the electricity market) is assigned as system balancing administrator for gas. Swedegas AB is the owner and operator of the transmission grid and the only existing storage facility in Sweden. Svenska Kraftnät is responsible for the short-term balancing administration which among others includes nomination, matching and allocation of gas. Both the daily balancing settlement and the final monthly and financial settlement are carried out by Svenska Kraftnät. Swedegas is currently responsible for technical operation and the capacity allocation within the Swedish gas transmission grid as well as daily maintenance and enlargement of the Swedish gas transmission grid. On the wholesale market there are currently two companies operating (DONG Energy AB and E.ON Gashandel Sverige AB) while the retail market is slightly more competitive with five active suppliers (of which E.ON Gashandel Sverige AB, Dong Energy AB and Göteborgs Energi AB have approximately 90% of the market).There are currently five DSO's existing on the Swedish natural gas market. Except E.ON Gas Sverige AB are all the DSO's owned by municipalities.

The Swedish electricity market is fully liberalised and all customers are free to choose their own supplier. Svenska Kraftnät, the TSO, owns the transmission grid and is unbundled from the other parts of the industry; grid access for third parties is guaranteed and a regulator, EMI, oversees market operations. Three companies — Vattenfall, Fortum (majority-owned by the Finnish government), and E.ON Sverige — generate the overwhelming bulk of power in Sweden, own most of the distribution assets and account for around half of retail sales. More than half of electricity consumers have switched suppliers, a rate well above the average for rest of the European Union.

Sweden is a part of the first free-electricity market in Europe, the Nordic electricity market. More than 70% of energy consumed in the Nordic market is traded through Nord Pool AS, which was established in 2002.

Prices, taxes and support mechanisms

All energy prices are freely determined by the market in Sweden, except for electricity and gas network tariffs. EMI regulates ex-ante the electricity and gas network tariffs by price controls set every four years for electricity. Those controls set the maximum amount of revenue energy-network owners can collect through the charges they levy on users of their networks. Prices are meant to cover the costs to owners of the network for the period in question. The tariffs for gas are subject to ex-ante approval of methodologies in order to ensure the tariffs are objective and non-discriminatory.

Energy is subject to an energy tax, a CO_2 tax and a sulphur tax. There is also a levy on NO_X emissions. Rates of tax vary by fuel and according to whether the fuel is being used for heating or in transport, whether by manufacturing industry, energy industry or households, and, in the case of electricity, what it is being used for and whether it is being used in the north or in the rest of the country. There are also several exemptions. The energy tax is levied on all fuels except peat, natural gas and LPG used as motor fuels, and biofuels. The CO_2 tax is paid on all fuels except bioenergy and peat. However, almost all users of energy peat are obliged to buy emission rights (EU-ETS) for CO_2. In addition, several user groups are wholly or partly exempt from the CO_2 tax (it is charged fully in transport, space heating and heat generation except co-generation). The sulphur tax is paid on bunker fuel, coal, petroleum coke and peat. Most tax revenues come from oil. There is also a tax on nuclear power, the rate of tax being set on the basis of the maximum permissible thermal power rating of each reactor.

In the Budget Bill for 2013 an introduction of an energy tax on biofuels used for low blend purposes is proposed. Moreover, it is proposed to abolish the CO_2 tax for combined heat and power (CHP) generation within EU-ETS (presently 7% of the general level). Also, the CO_2 tax is abolished for fuels used in installations that produce heat in CHP and plants that produce district heating, when it is delivered to industry users within EU-ETS.

Data documentation

General notes

The fiscal year in Sweden coincides with the calendar year.

Producer Support Estimate

No producer support estimates were identified.

Consumer Support Estimate

The Ministry of Finance publishes official tax-expenditure estimates (*Redovisning av skatteutgifter*) as part of its budget documentation every fiscal year (Ministry of Finance, various years). Numerous energy- and CO2-tax exemptions and reductions are listed in its tax-expenditure report.

Calculations of tax-expenditure estimates related to the energy tax are based on the assumption that all the fuels should be subject to the same tax rate per unit of energy content, with two caveats: First, a higher benchmark rate is applied to electricity, to reflect the fact that one energy unit of electricity is equivalent to more than one energy unit of fuel (due to energy loss in the energy-generation process). Second, the benchmark rate

Sweden applies to transport fuels is higher than that applied to heating and processing fuels since the tax revenue collected from the former covers costs associated with road transport, such as wear and tear of roads, noise and traffic accidents, among other societal costs. As for those tax expenditures that relate to the CO_2 tax, no differentiation is made in terms of a benchmark, i.e. the same benchmark rate is applied to every usage of the fuel.

Reduced Energy-Tax Rate on Diesel Used in Transport (data for 1997-)

The energy-tax rate on diesel (SEK 0.157 per kWh in 2012) is lower than the official benchmark for transport fuels, which is the energy-tax rate on gasoline in environmental class 1 (SEK 0.347 per kWh). The parliament decided that this tax expenditure will be reduced over time since the energy-tax rate on diesel will be increased to SEK 0.177 per kWh in 2013.

Source: Ministry of Finance (various years).

Tag: SWE_te_01

Energy-Tax Exemption for Natural Gas and LPG Used in Transport (data for 2007-)

This tax expenditure reflects the fact that both natural gas and LPG used as fuel in transport are exempted from energy-tax payments. The benchmark against which this tax expenditure is calculated is the energy-tax rate on gasoline in environmental class 1.

The annual amounts reported in the tax-expenditure reports are allocated to natural gas only, since the IEA's Energy Balances show that LPG consumption by the road-transport sector in Sweden is negligible.

Source: Ministry of Finance (various years).

Tag: SWE_te_02

Energy-Tax Exemption for Diesel-Powered Trains (data for 1997-)

Diesel used as fuel in diesel-powered trains is exempted from the energy tax. The benchmark against which this tax expenditure is calculated is the energy-tax rate on gasoline in environmental class 1.

Source: Ministry of Finance (various years).

Tag: SWE_te_03

Energy-Tax Exemption for Domestic Shipping (data for 1997-)

Fuel used in commercial domestic shipping is exempted from the energy tax. The benchmark against which this tax expenditure is calculated is the energy-tax rate on gasoline in environmental class 1.

The annual amounts reported in the tax-expenditure reports are allocated to diesel and heavy-fuel oils, on the basis of the IEA's Energy Balances for the domestic navigation sector.

Source: IEA; Ministry of Finance (various years).

Tag: SWE_te_04

Energy-Tax Exemption for Domestic Aviation (data for 2007-)

Fuel used for commercial domestic aviation is exempted from the energy tax. Until 1 July 2008, fuel used for private domestic aviation was also exempted from the energy tax; this

is no longer the case. The benchmark against which this tax expenditure is calculated is the energy-tax rate on gasoline in environmental class 1.

We have allocated the annual amounts reported in the tax-expenditure reports to kerosene type jet fuel only, on the basis of the IEA's Energy Balances for the domestic aviation sector. No amounts were allocated to aviation gasoline since its share in fuel consumption by the domestic aviation sector is negligible (below 2%).

Source: Ministry of Finance (various years).

Tag: SWE_te_05

Reduced Energy-Tax Rate for Fossil Fuels Used for Heating (data for 1997-2010)

The benchmark against which this tax expenditure is calculated is the energy-tax rate on heating oil. Energy-tax rates on LPG, natural gas and coal were equalised with the value of the benchmark at the beginning of 2011, which implies that this tax expenditure effectively disappeared from Sweden's tax-expenditure reports.

The annual amounts reported in the tax-expenditure reports are allocated to LPG and natural gas, on the basis of the IEA's Energy Balances for the manufacturing sector.

Source: IEA; Ministry of Finance (various years).

Tag: SWE_te_06

Reduced Energy-Tax Rate for Fuels Used in CHP Plants (data for 1997-)

Until the end of 2010, those CHP plants that are not encompassed by the EU ETS system were granted a full energy-tax rebate for fuels that they use solely for the combined heat and power generation. In 2011, the energy-tax exemption was replaced by a 70% reduction in the standard tax rate on heating fuels.

The annual amounts reported in the tax-expenditure reports are allocated to coal, blast furnace gas, natural gas and heavy fuel oil, on the basis of the IEA's Energy Balances for the combined heat and power generation sector. Peat is not among the allocated fuels since it is not encompassed by energy taxation.

Source: IEA, Ministry of Finance (various years).

Tag: SWE_te_07

Reduced Energy-Tax Rate for District Heating Supplied to Industry (no data available)

Those industrial users that use heat or electricity provided by district heating for manufacturing processes are granted a 70% reduction in the standard rate on heating fuels and a reduced rate of SEK 0.005 per kWh of electricity.

Annual payments for this item have been available since 2004. Since, however, they cannot be isolated into the fuel-related and the electricity-related components, the figures remain unreported.

Source: Ministry of Finance (various years).

Reduced Energy-Tax Rate on Diesel for the Mining Industry (data for 2010-)

Since 2010, the mining industry has been granted an 84% energy-tax reduction on diesel used for fuelling stationary machinery that is used for mining purposes. The parliament of Sweden decided to increase the reduction rate to 86% in 2013.

The benchmark against which this tax expenditure is calculated is the energy-tax rate on diesel.

Source: Ministry of Finance (various years).

Tag: SWE_te_08

Reduced Energy-Tax Rate on Heating Fuels for Industrial Consumers (data for 1997-)

Since 2011, industrial consumers, both within and outside of EU ETS, are granted a 30% reduction in the standard energy-tax rate on heating fuels. This reduction replaced a full energy-tax exemption for fossil fuels used for heating in manufacturing processes.

The benchmark against which this tax expenditure is calculated is the energy-tax rate on heating oil. In 2011, the energy-tax exemption was replaced by a 30% reduction in the standard tax rate on heating fuels.

The annual amounts reported in the tax-expenditure reports are allocated to LPG, natural gas and coal, on the basis of the IEA's Energy Balances for the manufacturing sector.

Source: IEA, Ministry of Finance (various years).

Tag: SWE_te_09

Reduced Energy-Tax Rate on Heating Fuels for Greenhouses and Agriculture (data for 1997-)

Until the end of 2010, greenhouses and the agricultural sector were granted a full energy-tax rebate for fossil fuels used for heating. The benchmark against which this tax expenditure is calculated is the energy-tax rate on heating oil. In 2011, the energy-tax exemption was replaced by a 30% reduction in the standard tax rate on heating fuels.

The annual amounts reported in the tax-expenditure reports are allocated to LPG and natural gas, on the basis of the IEA's Energy Balances for the agricultural sector.

Source: IEA; Ministry of Finance (various years).

Tag: SWE_te_10

Reduced CO_2-Tax Rate for Industrial Consumers outside EU ETS (data for 2000-)

Industries outside the EU ETS are granted a reduction of the CO2-tax rate on all fossil fuels used for heating purposes. The benchmark against which this tax expenditure is calculated is the standard CO2-tax rate of 1.05 SEK per kg of CO2. This reduction has been declining through time — from 79% in 2010 to 70% in 2011 and is planned to be diminished to 40% in 2015.

The annual amounts reported in the tax-expenditure reports are allocated to LPG, natural gas and coal, on the basis of the IEA's Energy Balances for the manufacturing sector.

Source: IEA, Ministry of Finance (various years).

Tag: SWE_te_11

Reduced CO_2-Tax Rate for Natural Gas and LPG Used in Transport (data for 2007-)

Natural gas and LPG used in transport are subject to lower CO2-tax rates. In 2010 these fuels were granted a 41% and 48% CO2-tax rate reduction respectively. In 2011 each of these fuels was granted a 30% CO2-tax reduction. The benchmark against which this tax expenditure is calculated is the standard CO2-tax rate of SEK 1.05 per kg of CO2. This reduction has been declining over time and further reductions are planned: from a 20% reduction in 2013 to a complete phase out of this tax expenditure in 2015.

The annual amounts reported in the tax-expenditure reports are allocated to natural gas only, since the IEA's Energy Balances show that LPG consumption by the road-transport sector in Sweden is negligible.

Source: Ministry of Finance (various years).

Tag: SWE_te_12

Reduced CO_2-Tax Rate for Energy-Intensive Companies (data for 1997-)

Fuels used for heating purposes by energy-intensive companies are granted a 24% CO2-tax reduction for that value of the CO2-tax that exceeds 1.2% of their sales value. This reduction can never imply lower CO2-tax payments than the EU-stipulated minimum. The benchmark against which this tax expenditure is calculated is the standard CO2-tax rate of SEK 1.05 per kg of CO2.

In 2010 the reduction applied to this part of the CO2 tax that exceeded 0.8% of a company's sales value, in 2011 this threshold was raised to 1.2%. The plan is to completely phase out the reduction from 2015 onwards.

The annual amounts reported in the tax-expenditure reports are allocated to coal, gas and diesel products, on the basis of the IEA's Energy Balances for combined chemicals, iron and steel, and other energy-intensive sectors.

Source: IEA, Ministry of Finance (various years).

Tag: SWE_te_13

Specific CO_2-Tax Reduction for Greenhouses and Agriculture (data for 2008-)

Fuels used for heating in the agricultural sector, forestry and aquaculture are granted a 24% CO2-tax reduction for that value of the CO2-tax that exceeds 1.2% of their sales value. This reduction can never imply lower CO2-tax payments than the EU-stipulated minimum. The benchmark against which this tax expenditure is calculated is the standard CO2-tax rate of SEK 1.05 per kg of CO2.

In 2010 the reduction applied to this part of the CO2 tax that exceeded 0.8% of a company's sales value, in 2011 this threshold was raised to 1.2%. The plan is to completely phase out the reduction from 2015 onwards.

The annual amounts reported in the tax-expenditure reports are allocated to diesel, LPG, natural gas and fuel oil, on the basis of the IEA's Energy Balances for the agricultural sector.

Source: IEA, Ministry of Finance (various years).

Tag: SWE_te_14

General CO_2-Tax Reduction for Greenhouses and Agriculture (data for 2000-)

Fossil fuels used for heating in greenhouses and the agricultural sector are subject to a lower CO2-tax rate. In 2010 these sectors were granted a 79% reduction for the CO2-tax rate on all fossil fuels used for heating; in 2011 this reduction was diminished to 70%. The benchmark against which this tax expenditure is calculated is the standard CO2-tax rate of SEK 1.05 per kg of CO2. This reduction has been declining over time and further reductions are planned: industrial consumers will be granted a 40% reduction in 2015.

The annual amounts reported in the tax-expenditure reports are allocated to diesel, LPG, natural gas and fuel oil, on the basis of the IEA's Energy Balances for the agricultural sector.

Source: IEA, Ministry of Finance (various years).

Tag: SWE_te_15

CO_2-Tax Reduction for Diesel Used in Agriculture and Forestry (data for 2005-)

Diesel used as fuel for machinery in agriculture and forestry is subject to a lower CO2-tax rate. The reduction has been decreasing over time — from 77% when the scheme seems to have been implemented, through 79% in 2010, to 70% in 2011.

The benchmark against which this tax expenditure is calculated is the standard CO2-tax rate of SEK 1.05 per kg of CO2. This reduction, corresponding to SEK 2.10 per litre in 2011, has been decreasing over time and further reductions are planned – to SEK 1.70 per litre in 2013 and SEK 0.90 per litre in 2015.

Source: Ministry of Finance (various years).

Tag: SWE_te_16

CO_2-Tax Exemption for Diesel-Powered Trains (data for 1997-)

Diesel used as fuel in diesel-powered trains is fully exempted from the CO2-tax. The benchmark against which this tax expenditure is calculated is the standard CO2-tax rate of SEK 1.05 per kg of CO2.

Source: Ministry of Finance (various years).

Tag: SWE_te_17

CO_2-Tax Exemption for Domestic Aviation (data for 2007-2011)

Fuel used for commercial domestic aviation is fully exempted from the CO2 tax. Until 1 July 2008, fuel used for private domestic aviation was also exempted from the CO2 tax; this is no longer the case. The benchmark against which this tax expenditure is calculated is the standard CO2-tax rate of SEK 1.05 per kg of CO2.

Since from 2012 aviation is covered by EU ETS, this tax expenditure will expire in 2012 accordingly.

The annual amounts reported in the tax-expenditure reports are allocated to kerosene type jet fuel only, on the basis of the IEA's Energy Balances for the domestic aviation sector. No amounts were allocated to aviation gasoline since its share in fuel consumption by the domestic aviation sector is negligible (below 2%).

Source: Ministry of Finance (various years).

Tag: SWE_te_18

CO_2-Tax Exemption for Domestic Shipping (data for 1997-)

Fuel used in commercial domestic shipping is exempted from the CO2 tax. The benchmark against which this tax expenditure is calculated is the standard CO2-tax rate of SEK 1.05 per kg of CO2.

The annual amounts reported in the tax-expenditure reports are allocated to diesel and fuel oils, on the basis of the IEA's Energy Balances for the domestic-navigation sector.

Source: IEA, Ministry of Finance (various years).

Tag: SWE_te_19

Energy-Tax Exemption for Peat Used for Heating (no data available)

Peat used for heating is fully exempted from the energy tax.

While Sweden reports this exemption as a tax expenditure, it cannot be isolated from other fuels (biofuels and biogas) reported under the same item. The annual payments are therefore not included in the Inventory.

Source: Ministry of Finance (various years).

CO_2-Tax Exemption for Peat (data for 2003–2010)

Peat is fully exempted from the CO2 tax. Since the beginning of 2011, Sweden has not treated this exemption as a tax expenditure since almost all peat used in Sweden is now included in EU ETS.

Source: Ministry of Finance (various years).

Tag: SWE_te_20

Reduced CO_2-Tax Rate for Diesel Used by the Mining Industry (data for 2010-)

This tax expenditure was introduced in 2010. Diesel used in motorised vehicles (other than passenger cars, trucks or busses) for mining purposes is granted a 70% reduction of the CO2-tax rate on all fossil fuels used for heating purposes. The benchmark against which this tax expenditure is calculated is the standard CO2-tax rate of SEK 1.05 per kg of CO2. This reduction is planned to be diminished to 40% in 2015.

Source: Ministry of Finance (various years).

Tag: SWE_te_21

Reduced CO_2-Tax Rate for District Heating Supplied to Industry (data for 2000-)

Fuels that are used for producing heat in district heating, which is then used for industrial-production processes, are subject to a lower CO2-tax rate. Until the end of 2010, these fuels were granted a 79% reduction of the CO2-tax rate; in 2011 this reduction was diminished to 70%. The benchmark against which this tax expenditure is calculated is the standard CO2-tax rate of 1.05 SEK per kg of CO2. This reduction has been declining over time and further reductions are planned: industrial consumers will be granted a 40% reduction in 2015.

The tax expenditure comprises only those reductions that were granted to industry consumers outside EU ETS starting from 2010.

We allocate the annual amounts to coal, LPG and natural gas, on the basis of the IEA's Energy Balances for the industrial sector.

Source: IEA; Ministry of Finance (various years).

Tag: SWE_te_22

Temporary Energy-Tax Exemption for Diesel Used in Forestry (data for 2005 and 2006)

This energy-tax exemption was temporarily granted to machinery used in the forests on southern Sweden from 8 January 2005 until the end of 2006. It was introduced to deal with

the consequences of a storm that hit the southern part of the country at the beginning of 2005.

The benchmark against which this tax expenditure is calculated is the standard energy-tax rate applied to diesel used in machinery in the forestry sector.

Source: Ministry of Finance (various years).

Tag: SWE_te_23

Temporary CO_2-Tax Exemption for Diesel Used in Forestry (data for 2005 and 2006)

This CO2-tax exemption was temporarily granted to machinery used in the forests on southern Sweden from 8 January 2005 until the end of 2006. It was introduced to deal with the consequences of a storm that hit the southern part of the country at the beginning of 2005.

The benchmark against which this tax expenditure is calculated is the standard CO2-tax rate of SEK 1.05 per kg of CO2.

Source: Ministry of Finance (various years).

Tag: SWE_te_24

CO_2-Tax Exemption for Electricity Production (data for 1997-2007)

Until 2007, fossil fuels that are used for electricity production were exempt from CO2-tax payments. Since CO2 tax is not applied to electricity, this tax expenditure constitutes fossil-fuel support.

The annual amounts reported in the tax-expenditure reports are allocated to all those fossil fuels (except for peat as it is not encompassed by CO2 taxation) that are used as inputs by the electricity-generation sector, on the basis of the IEA's Energy Balances.

Source: IEA; Ministry of Finance (various years).

Tag: SWE_te_25

Reduced CO_2-Tax Rate for Fuels Used in CHP Plants (data for 2004-2009)

Until 2009, the share of fuels used in CHP plants that is used for heat production benefitted from a 79% CO2-tax reduction. The benchmark against which this tax expenditure is calculated is the standard CO2-tax rate of SEK 1.05 per kg of CO2.

We allocate the annual amounts to fossil fuels used in CHP generation, on the basis of the IEA's Energy Balances for the combined heat and power sector. Since CO2 taxation does not apply to peat, no payments are allocated to this particular fossil fuel.

Source: IEA, Ministry of Finance (various years).

Tag: SWE_te_26

CO_2-Tax Deduction for Coal Used in Metallurgical Processes (data for 1997 and 1998)

CO_2-tax deductions are granted to various kinds of coal used in metallurgical processes.

We allocate the annual amounts to various types of coal concerned on the basis of the IEA's Energy Balances for the industries producing iron and steel.

Source: IEA; Ministry of Finance (various years).

Tag: SWE_te_27

Sources

Policies or transfers

Ministry of Finance (various years), *Redovisning av skatteutgifter* (Report on Tax Expenditures), Available at: *www.regeringen.se*.

Energy statistics

IEA (2011), *Energy Balances of OECD Countries,* International Energy Agency, Paris.

Table 31.1. Summary of fossil-fuel support to coal - Sweden

(Millions of SEK, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Consumer support								
CO_2-tax exemption for electricity production	Central	707	890	851	n.a.	n.a.	n.a.	n.a.
Reduced CO_2-tax rate for fuels used in CHP plants	Central	726	717	538	542	445	n.a.	n.a.
Reduced CO_2-tax rate for district heating supplied to industry	Central	402	216	218	251	213	14	10
Reduced energy-tax rate for fuels used in CHP plants	Central	115	130	83	63	45	98	88
CO_2-tax reduction for energy-intensive companies	Central	114	105	106	13	3	5	5
CO_2-tax exemption for peat	Central	1950	1620	1490	1900	1840	1840	n.a.
Reduced CO_2-tax rate for industrial consumers outside EU ETS (1)	Central	2013	2062	1938	2054	1687	469	392
Reduced energy-tax rate on heating fuels for industrial consumers	Central	525	531	489	463	381	323	333

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances. (1) Includes industry as a whole until 2009 and only companies outside EU ETS thereafter.

Table 31.2. Summary of fossil-fuel support to petroleum - Sweden

(Millions of SEK, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Consumer support								
Temporary energy-tax exemption for diesel used in forestry	Central	110	110	n.a.	n.a.	n.a.	n.a.	n.a.
CO_2-tax exemption for diesel-powered trains	Central	150	20	20	20	20	20	30
CO_2-tax reduction for energy-intensive companies	Central	176	185	154	17	7	5	5
Reduced CO2-tax rate for industrial consumers outside EU ETS (1)	Central	2179	2188	1971	2004	1811	427	357
Reduced CO_2-tax rate for district heating supplied to industry	Central	435	230	222	245	229	13	9
Temporary CO_2-tax exemption for diesel used in forestry	Central	60	60	n.a.	n.a.	n.a.	n.a.	n.a.
Reduced energy-tax rate on heating fuels for industrial consumers	Central	568	564	498	452	409	294	304
Reduced energy-tax rate on heating fuels for greenhouses and agriculture	Central	19	13	17	18	13	12	8
Specific CO_2-tax reduction for greenhouses and agriculture	Central	..	..	..	18	26	26	18
Energy tax exemption for domestic aviation	Central	..	..	1160	1070	1010	1050	930
Reduced CO_2-tax rate for fuels used in CHP plants	Central	593	581	488	366	234	n.a.	n.a.
Reduced CO_2-tax rate for diesel used by the mining industry	Central	..	..	..	..	..	200	190
CO_2-tax exemption for electricity production	Central	1411	1380	1345	n.a.	n.a.	n.a.	n.a.
Reduced energy-tax rate for fossil fuels used for heating	Central	205	217	231	235	271	324	n.a.
Energy-tax exempion for diesel-powered trains	Central	180	20	20	30	30	30	30
Reduced energy-tax rate for fuels used in CHP plants	Central	171	158	117	94	56	161	144
Energy-tax exemption for domestic shipping	Central	800	620	620	610	350	690	560
Reduced energy-tax rate for diesel used in transport	Central	11530	11110	11600	11300	10830	12030	11300
CO_2-tax reduction for diesel used in agriculture and forestry	Central	1250	1360	1320	1330	1350	1360	1230
Reduced energy-tax rate on diesel for the mining industry	Central						110	120
CO_2-tax exemption for domestic shipping	Central	650	520	510	540	310	620	500
CO_2-tax exemption for domestic aviation	Central	..	..	1010	990	930	970	860
General CO_2-tax reduction for greenhouses and agriculture	Central	414	410	394	427	431	381	328

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances. (1) Includes industry as a whole until 2009 and only companies outside EU ETS thereafter.

Table 31.3. Summary of fossil-fuel support to natural gas - Sweden

(Millions of SEK, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Consumer support								
Reduced energy-tax rate on heating fuels for industrial consumers	Central	487	525	473	375	301	313	323
Reduced energy-tax rate for fuels used in CHP plants	Central	84	72	90	63	110	222	199
General CO_2-tax reduction for greenhouses and agriculture	Central	36	40	46	53	59	49	42
Energy-tax exemption for natural gas and LPG used in transport	Central	..	..	120	120	200	170	230
Reduced CO_2-tax rate for natural gas and LPG used in transport	Central	..	..	30	30	50	40	40
CO_2-tax exemption for electricity production	Central	513	490	914	n.a.	n.a.	n.a.	n.a.
Reduced energy-tax rate for fossil fuels used for heating	Central	175	203	219	195	199	346	n.a.
Reduced CO_2-tax rate for fuels used in CHP plants	Central	290	262	374	262	461	n.a.	n.a.
Reduced energy-tax rate on heating fuels for greenhouses and agriculture	Central	131	137	123	132	137	128	92
Reduced CO_2-tax rate for industrial consumers outside EU ETS (1)	Central	1869	2040	1872	1662	1332	455	380
Reduced CO_2-tax rate for district heating supplied to industry	Central	373	214	210	203	168	13	10
Specific CO_2-tax reduction for greenhouses and agriculture	Central	..	..	..	2	4	4	2

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances. (1) Includes industry as a whole until 2009 and only companies outside EU ETS thereafter.

Chapter 32.

SWITZERLAND

This chapter identifies, documents, and provides estimates of the various budgetary transfers and tax expenditures that relate to the production or use of fossil fuels in Switzerland. An overview of the country's energy economy is first given to place the measures listed into context. A data-documentation section then describes those measures in a systematic way. Whenever possible, the description details a measure's formal beneficiary, its eligibility criteria and functioning, and the fuels whose production or use stand to benefit from the measure. The chapter ends with a set of tables that provide, subject to availability, quantitative information and estimates for the various measures listed.

Energy resources and market structure

Switzerland does not produce any fossil fuels and relies heavily on hydro-electricity and nuclear power to meet its electricity needs. Energy imports account for about 60% of the country's total primary energy supply and for about 79% of its total final energy consumption. Oil is by far the largest contributor (45%) to its TPES, followed by nuclear power (23%), hydro-electric power (12%) and natural gas (10%). The rest is supplied by renewable sources of energy such as solar, wind and waste. The importance of hydro-electric power in the total energy mix owes much to Switzerland's mountainous geography. Its central location in Western Europe makes the country a major transit route for natural gas and electricity.

Switzerland imports all of the petroleum it consumes, including in the form of crude oil. The country's two refineries are majority-owned by the private sector and have a combined output covering 36% of total domestic demand for petroleum products. The retail market is fully liberalised and dominated by BP, Exxon, Shell and Tamoil. In addition, more than 5% of the country's filling stations sell biofuels. Switzerland is also entirely dependent on imports for the natural gas it uses, the market for which is not liberalised. The law allows for open third-party access to the high-pressure grid but transmission and distribution are still vertically integrated for the most part. The Swiss Gas Industry Association has, however, formulated basic principles for local natural-gas suppliers to calculate charges for using their networks.

Fossil fuels contribute very little to electricity generation in Switzerland since hydro-electric and nuclear power can cover up to 97% of the country's electricity needs, depending on hydrological conditions. With a few exceptions in recent years (2005, 2006, and 2010), the country has traditionally been a net exporter of electricity. Competition was only recently introduced for large customers with the 2008 Law on Electricity Supply (the *Stromversorgungsgesetz*), which unbundled the electricity market and established an independent regulator (ElCom) to oversee open and non-discriminatory access to the grid. The further introduction of competition for those end-users that have an annual consumption below 100 MWh remains subject to a facultative referendum. Electricity generation is dominated by four vertically integrated companies that are either partially or wholly owned by the cantons and municipalities (AXPO, BKW-FMB Energie, ALPIQ, and Elektrizitätswerk der Stadt Zürich). However, the 2008 Law on Electricity Supply foresees that the transmission network shall be owned by Swissgrid (the Swiss National Grid Company) by 2013.

Switzerland lies at the centre of several electricity transit routes. Imports generally come from France and Germany, while exports are primarily destined to Italy. Good interconnection management is therefore crucial for securing supply in the whole region. Switzerland has also entered negotiations on an agreement with the EU that would regulate cross-border electricity trade and grant mutual market access.

Prices, taxes and support mechanisms

The prices of petroleum products in Switzerland are set by the market. Wholesale prices for natural gas do not vary much across the country since it is sold to utilities at cost by Swissgas AG and four regional associations. Retail gas prices are, however, subject to more variation, depending on local circumstances. For electricity, ElCom (*Commission fédérale de l'électricité*), the electricity regulator, monitors monopoly pricing and grid fees to prevent abuse. As in the case of natural gas, retail electricity prices vary significantly from one supply area to another. Final electricity consumption is subject to a grid levy of CHF 0.0077 per kWh, the purpose of which is to finance system services. The Swiss electricity market is only partially liberalised. Most companies and all households are subject to regulated prices, which in the past have generally been lower than the ones at the electricity exchange. In addition, energy-intensive industries must pay a capped surcharge to finance feed-in tariffs.

This surcharge shall not exceed 3% of the electricity costs for consumers in cases where these costs account for more than 10% of a consumer's gross value added. This measure is in line with regulations in most EU countries.

All energy sales in Switzerland are subject to value-added tax (VAT) at the normal rate of 8%. In addition, a CO_2 levy on heating and process fuels was introduced in 2008 to internalise the external costs associated with CO_2 emissions and encourage a more efficient use of these particular fossil fuels. The tax is levied by the Federal Customs Administration (*Administration fédérale des douanes*) at a rate of CHF 36 per tonne of CO_2. Energy-intensive companies can, however, be exempted from the CO_2 tax provided they commit to legally binding CO_2 reduction targets. Revenues from the CO_2 tax are redistributed to the population through the social security system, and to businesses in proportion of wages paid. Since 2010, the tax has been partly earmarked for modernisation and promotion of renewable energies in buildings. For transport fuels, a private initiative known as the Climate Cent exists since 2005, whereby a surcharge of CHF 0.015 per litre is levied by mineral-oil importers on imports of both gasoline and diesel. Revenues from this surcharge are invested into CO_2-reduction projects both in Switzerland and abroad.

In addition, Switzerland levies excise duties on sales of mineral oils such as diesel (CHF 0.7587 per litre), unleaded petrol (CHF 0.7312 per litre) and light heating oil (CHF 0.003 per litre). Natural gas and LPG are also subject to excise duties. Because gasoline in Switzerland is taxed at a lower rate than in neighbouring countries, and depending on the prevailing exchange rate between the euro and the Swiss franc, the country can sell considerable volumes of fuel to drivers from France, Germany and Italy in a given year. With high values for the Swiss franc compared to the euro over the last 12 to 18 months, this phenomenon has, however, been less pronounced. The performance-related heavy-vehicle fee (HVF), which has been in force since 2001, is a federal tax levied on the basis of total weight, emissions level, and the distance (in kilometres) travelled inside Switzerland. It is levied on all vehicles and trailers that have a total weight above 3.5 tonnes, are used for freight, are licensed in Switzerland and abroad, and make use of the country's public-roads network.

At the federal level, a few tax exemptions and reductions provide some form of support to users of fossil fuels and biofuels. Farmers, foresters, fishermen, as well as certain public transport companies benefit from reductions in the rate of the excise tax. Since July 2008, biofuels have attracted either full or partial relief from the excise tax, provided they comply with certain environmental and social criteria. Some vehicles are also exempt from the HVF: agricultural vehicles; vehicles used for the concessionary transport of persons; vehicles used by emergency services; military vehicles; etc..

Data documentation

General notes

The fiscal year in Switzerland coincides with the calendar year.

Consumer Support Estimate

Excise Tax Exemption for Certain Transport Companies (data for 2004 and 2010)

This tax provision allows companies that have been granted a concession for the transport of persons to benefit from a reduction in the rate of the excise tax that normally applies to mineral oils consumed in Switzerland.

The annual estimates reported in Département Fédéral des Finances (2011) are allocated to diesel fuel and gasoline on the basis of the IEA's Energy Balances for the road transport sector.

Sources: Département Fédéral des Finances (2011), IEA.

Tag: CHE_te_01

Excise Tax Refund for Farming, Forestry and Fishing (data for 1997-)

The use of fuel for farming, forestry and fishing purposes is entitled to a refund from the excise tax that normally applies to mineral oils consumed in Switzerland.

We allocate the annual estimates provided by the Département Fédéral des Finances to diesel fuel and gasoline on the basis of the measure's actual breakdown by fuel for the year 2010.

Sources: Département Fédéral des Finances (2011).

Tag: CHE_te_02

Excise Tax Refund for Public Interest (data for 2004 and 2010)

The use of fuels is in certain cases of public interest entitled to a refund of the excise tax that normally applies to most sales of mineral oils in Switzerland (e.g. stationary electricity generation).

In the absence of more details, we allocate this measure to diesel fuel.

Sources: Département Fédéral des Finances (2011).

Tag: CHE_te_03

CO_2-Tax Exemption for Large Consumers (data for 2008-)

This measure exempts certain large consumers (i.e. energy-intensive companies) from Switzerland's CO_2 tax on heating and process fuels. Companies exempted from the CO_2 tax must, however, commit to legally-binding CO_2 reduction targets.

The annual estimates reported in Département Fédéral des Finances (2011) are allocated to the different types of fossil fuels on the basis of the IEA's Energy Balances for energy-intensive sectors such as the iron and steel industry, the cement industry, and the paper and pulp industry.

Sources: Département Fédéral des Finances (2011), IEA.

Tag: CHE_te_04

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Policies or transfers

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Energy statistics

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Table 32.1. Summary of fossil-fuel support to coal - Switzerland

(Millions of CHF, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Consumer support								
CO_2-tax exemption for large consumers	Federal	n.a.	n.a.	n.a.	4	9	19	31

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Table 32.2. Summary of fossil-fuel support to petroleum - Switzerland

(Millions of CHF, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Consumer support								
Excise tax refund for farming, forestry and fishing	Federal	71	72	71	70	69	68	68
Excise tax exemption for certain transport companies	Federal	..	..	..	..	..	67	62
Excise tax refund for public interest	Federal	..	..	..	..	..	5	6
CO_2-tax exemption for large consumers	Federal	n.a.	n.a.	n.a.	5	10	19	32

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Table 32.3. Summary of fossil-fuel support to natural gas - Switzerland

(Millions of CHF, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Consumer support								
CO_2-tax exemption for large consumers	Federal	n.a.	n.a.	n.a.	8	16	33	54

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Chapter 33.

TURKEY

This chapter identifies, documents, and provides estimates of the various budgetary transfers and tax expenditures that relate to the production or use of fossil fuels in Turkey. An overview of the country's energy economy is first given to place the measures listed into context. A data-documentation section then describes those measures in a systematic way. Whenever possible, the description details a measure's formal beneficiary, its eligibility criteria and functioning, and the fuels whose production or use stand to benefit from the measure. The chapter ends with a set of tables that provide, subject to availability, quantitative information and estimates for the various measures listed.

Energy resources and market structure

Turkey has negligible fossil-fuel resources, and imports practically all of the oil and natural gas it uses from countries to the east. It is, however, a major energy transit route owing to its proximity to major oil and gas reserves. Turkey depends on imports for about 72% of its total primary energy supply (TPES). In 2010, fossil fuels accounted for nearly 90% of TPES while renewable energy sources provided the remaining 10%. Natural gas is the leading fossil fuel in TPES, accounting for 30% and followed by oil (27%) and coal (32%). Since 2000, Turkey's electricity supply has increased by around 75%. In 2010, natural gas fuelled nearly half of all power generation, while coal provided 26%, hydropower 25%, and oil 1%. Only a half per cent of Turkey's electricity is exported. In order to meet the growing demand, Turkey has already started the construction of its first nuclear plant, and is planning to build a second one.

Turkey produces both hard coal and lignite. However, domestic production only covered around 47% of total domestic consumption in 2010. Although its hard-coal resources are meagre, the country is richly endowed when it comes to lignite, with several production facilities scattered all over the country. Turkey consumes all the lignite it produces but imports around 90% of its total hard-coal needs.

Following the enactment of the 2001 Electricity Law, Turkey unbundled its state-owned vertically-integrated enterprises into different business activities, notably generation, transmission, distribution, wholesale trading and retail supply. Since 2003, private-sector investment in generation capacity has increased significantly while the government has already started to privatise a significant share of its state-owned generation assets. In 2005, the government-owned distribution company was divided into 20 different companies for which privatisation have already begun. The electricity law also mandated an independent regulatory authority, namely the Energy Market Regulatory Authority (EMRA), to issue licenses; determine and approve tariffs; set the eligibility limits for market opening; draft secondary legislation; and solve disputes and apply penalties in electricity, natural-gas, petroleum and LPG markets.

In 2001, Turkey passed the Natural Gas Market Law with the objective of establishing a competitive natural-gas market. Although the law requires the government-owned Petroleum Pipeline Corporation (BOTAŞ) to unbundle its import, transmission, storage and trade activities, BOTAS remains a major player in the natural-gas market. The natural-gas market reform prioritises contract transfer in order to limit the share of any importer or wholesaler in the domestic market to 20%. In 2006, BOTAS gave four companies the right to import around 12% of all natural-gas imports for a period of 15 years. Third-party access (TPA) to the transmission and distribution network is regulated by EMRA, and is non-discriminatory. As part of its market reform, Turkey has also started to privatise gas-distribution activities with a view to extending the network. EMRA granted licenses for a total of 60 cities, 53 of which are new distribution areas and include an obligation to build a gas network.

Turkey's domestic oil and natural-gas transmission network is owned and operated by BOTAS. Owing to its location between Europe, the Middle-East and the Caspian region, Turkey has become a major hub for international pipeline connections. Gas from Russia is transported to Bulgaria through the Russia-Turkey Bluestream and the Russia-Turkey West gas pipelines, while gas from Azerbaijan is transported through the Baku-Tbilisi-Erzurum pipeline. There are also a number of projects that are being contemplated and which would increase Turkey's international pipeline connections. The Nabucco pipeline is one such project that would enable new suppliers from the Middle-East and the Caspian region to access the European gas market.

Prices, taxes and support mechanisms

As part of its natural-gas and electricity markets reform, Turkey is moving towards a fully cost-reflective tariff structure. Although wholesale prices for the gas and electricity markets are already cost-based, retail prices remain regulated by means of a uniform national retail tariff, which is approved by EMRA. Hence, the retail tariff does not reflect the differences in costs across the distribution regions.

Retail prices for electricity remained constant between 2002 and 2007 in spite of a significant increase in generation costs, which itself resulted from high feedstock prices. Since 2008, tariffs have been adjusted quarterly to take into account input prices, inflation and exchange rates. The transition to this system involved three large tariff increases (in January, July, and October 2008), which raised the average retail tariff by about 50%.

The Automatic Pricing Mechanism (APM), which operated between July 1998 and the end of 2004, set a ceiling on the prices of almost all oil products. In the beginning of 2005, the government decided to remove price caps, which led to an increase in pre-tax prices. Since then, oil prices have been set by the market.

Turkey levies an 18% value-added tax (VAT) on all energy products. Prices for gasoline and diesel fuel are among the highest in the OECD, owing to the relatively high excise taxes levied on petroleum products. As of July 2011, the excise tax for regular gasoline (TRY 1.8915 per litre) was higher than that for diesel (TRY 1.3045 per litre). Excise taxes in Turkey are identical for both commercial and non-commercial users. Jet kerosene and aviation gasoline are, however, exempted from excise taxes.

The most important measure supporting energy production in Turkey is the financial assistance benefitting the hard-coal industry. Support is mostly provided through transfer payments from the Turkish Treasury to Turkish Hard-Coal Enterprises (TTK). The Ministry of Energy & Natural Resources also distributes coal for heating purposes to poor households. The country supports R&D in relation to clean-coal technologies, including coal gasification, CO_2 storage and transport, and fuel production from biomass and coal blends. Meanwhile, there are a number of tax exemptions and rebates targeting specific fuels and sectors. These include: fuels used in domestic maritime shipping and in vehicles used for national-security purposes; diesel fuel used in agriculture for specific crops; and oil and gas exploration, transportation and distribution.

Data documentation

General notes

The fiscal year in Turkey coincides with the calendar year.

Producer Support Estimate

Aid to the Hard-Coal Industry (data for 1991-)

Turkey's reserves of hard-coal are relatively small compared with those for lignite, and producers receive significant amounts of support to compensate them for costs in excess of revenues. Production costs for hard coal from Turkish Hard Coal Enterprises (TTK) stood at an average of USD 289 per tonne in 2008. Meanwhile, steel producers and power generators could purchase coal at prices ranging between USD 50 and USD 180 per tonne. State aid per tonne of coal has increased significantly over the years while production has declined.

Estimates for this measure are expressed in USD. Data prior to 2008 come from the IEA while those for later years come from TTK.

Sources: IEA (2009; 2005), TTK.

Tag: TUR_dt_01

Aid to the Lignite Industry (no data available)

Lignite makes a significant contribution to Turkey's domestic total coal supply. Turkish Coal Enterprise (TKI) is responsible for the exploration, production and marketing of both domestic lignite and asphaltite. Although TKI used to receive support from the Turkish government, the company has been able to cover its costs and make a profit since 1995.

Sources: IEA (2009; 2005).

Tax Exemption for Oil and Gas Exploration and Transportation (no data available)

This tax exemption was introduced in 1984 to encourage the exploration of oil and precious metals. According to the Turkish VAT Law (No. 3065), the Corporate Tax Law (No. 5520), and the Special Consumption Tax Law (No. 4760), activities connected to the exploration, processing, enrichment and refining of gold, silver and platinum, and those falling under the scope of the Oil Law (No. 6326), are entitled to tax-free provisions of services and delivery of goods. Eligible companies must be involved in certified oil-exploration activities. In addition, the delivery of machines and equipment to the owner of an investment-incentive certificate is exempted from value-added tax.

No estimates are available for this particular provision.

Sources: VAT Law No. 3065, Special Consumption Tax Law No. 4760, Tax Expenditure Report (2007).

Tax Exemption for the Transportation and Distribution of Oil and Gas (no data available)

This tax exemption was also introduced in 1984. It allows the transportation through pipelines of foreign crude oil, natural gas, and their by-products (including the construction and the services involved such as stations, pumps, measurement, and communication tools) to be exempted from both VAT and property tax.

No estimates are available for this particular provision.

Sources: Property Tax Law No. 1319, Tax Expenditure Report (2007).

Consumer Support Estimate

Tax Exemption for LPG Consumption (no data available)

Between 1999 and 2001, the Turkish government supported the residential use of LPG for cooking purposes by foregoing both VAT and the special consumption tax. Those tax exemptions resulted in the price of LPG dropping below that of both gasoline and diesel fuel. As regular motor engines cannot use LPG, the government expected its use in cars to remain limited. However, an underground industry soon developed to make gasoline and diesel engines compatible with LPG. With a payback period of less than two years, the operation proved sufficiently simple and cheap for drivers to convert massively their vehicles to LPG use. Alerted by the resulting loss in tax revenue, the government began to phase out this tax expenditure at the end of 2000. This provision resulted in significant increases in LPG consumption.

No estimates are available for this particular provision.

Sources: IEA (2001).

Rebate for Diesel Used in Agriculture (data for 2008-)

The excise tax rate on diesel fuel is very high in Turkey, which creates a burden for farmers whose profit margins are significantly low. This programme was introduced by the Ministry of Agriculture in 2007 to help farmers grow specific crops. There are three different types of crops defined by the ministry, which correspond to different aid levels. The amounts of aid are calculated according to the area of the land (in decares) used in growing specified crops, and paid according to a schedule defined by the cabinet. There are no restrictions on how grant money is spent. This measure is to be phased out.

Sources: Ministry of Agriculture and Rural Affairs (2007), Turkish Grand National Assembly.

Tag: TUR_te_01

Fuel-Tax Exemption for Domestic Commercial Aviation (no data available)

In addition to the VAT, the Turkish government levies a "Special Consumption Tax" for every litre of fuel consumed. While gasoline, LPG and diesel fuel are all subject to this tax, the domestic use of aviation and jet fuel has been exempted since the introduction of the excise tax law in 2002.

No estimates are available for this particular provision.

Sources: Revenue Administration.

Coal Aid to Poor Families (data for 2009-)

This programme was initiated in 2003 by the Ministry of Energy and Natural Resources to assist poor families. In Turkey, a significant number of households still burn lignite for heating purposes. Coal is supplied by TKI and distributed by local governments. According to the Minister of Energy, an average of 1.7 million families received coal aid between 2003 and 2009. However, quantifying the total amount spent by the ministry is hampered due to lack of data.

We allocate this measure entirely to lignite coal.

Sources: Ministry of Energy and Natural Resources (2010), Turkish Court of Accounts (various years).

Tag: TUR_dt_02

Fuel-Tax Exemption for Ships in Cabotage Lines (data for 2007)

This fuel-tax exemption was introduced by the government in 2003 to support the domestic maritime navigation sector. The high special consumption tax on fuel was at the time considered to be a major barrier to the development of the sector in Turkey. The government therefore decided to abolish the special consumption tax as it applied to sales of fuel for ships. Eligible ships are those carrying cargo and passengers within the cabotage lines registered with the Turkish International Ship Registry and National Ship Registry, commercial yachts, and service and fishing ships.

Estimates are only available for the year 2007.

Sources: Tax Expenditure Report (2007), Ministry of Finance.

Tag: TUR_te_02

Fuel-Tax Exemption for Vehicles used for National Security (no data available)

Fuel purchased by the Ministry of Defence, the General Command of Gandermarie, the General Command of Coast Guard, and the National Intelligence Agency is fully exempt from both VAT and the special consumption tax.

No estimates are available for this particular provision.

Sources: Tax Expenditure Report (2007), Ministry of Finance.

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Policies or transfers

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Table 33.1. Summary of fossil-fuel support to coal - Turkey

(Millions of TRY, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Producer support								
Income support								
Aid to the hard-coal industry (1)	Central	282	397	305	293	250	298	298
Consumer support								
Coal aid to poor families	Central	..	..	..	..	252	486	486

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. (1) Estimates for this one particular measure are expressed in millions of USD.

Table 33.2. Summary of fossil-fuel support to petroleum - Turkey

(Millions of TRY, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Consumer support								
Fuel-tax exemption for ships in cabotage lines	Central	..	..	172	..	..	..	..
Rebate for diesel used in agriculture	Central	n.a.	n.a.	n.a.	473	468	512	512

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic.

Chapter 34.

UNITED KINGDOM

This chapter identifies, documents, and provides estimates of the various budgetary transfers and tax expenditures that relate to the production or use of fossil fuels in the United Kingdom. An overview of the country's energy economy is first given to place the measures listed into context. A data-documentation section then describes those measures in a systematic way. Whenever possible, the description details a measure's formal beneficiary, its eligibility criteria and functioning, and the fuels whose production or use stand to benefit from the measure. The chapter ends with a set of tables that provide, subject to availability, quantitative information and estimates for the various measures listed.

Energy resources and market structure

The United Kingdom (UK) has been a major producer of oil and natural gas from the continental shelf in the North Sea since the 1980s, though output has been declining steadily for several years with the depletion of reserves. Historically, the country was a big coal producer too, but high costs have rendered most production uneconomic and output is now modest. Today, crude-oil production represents about 83% of primary oil supply while most coal is imported. Natural gas is the dominant fuel in the primary energy mix, accounting in 2010 for 41% of total supply, followed by oil and petroleum products (32%) and coal (15%). Nuclear power contributes a further 8% and biomass for most of the remaining 4%. Since the 1980s, gas has displaced coal and oil, especially in power generation. Although UK import dependence has risen in recent years, indigenous production still accounts for about 73% of the country's total primary energy supply (counting nuclear power as domestic production).

The United Kingdom has been a pioneer in deregulating and liberalising energy markets through price decontrol, the closure of inefficient coal mines, the removal of subsidies, privatisation and the introduction of competition and open access to electricity and natural gas networks, regulated by an independent regulatory body. Today, there is virtually no state ownership of energy assets and all markets are competitive.

The state-owned British Coal Corporation was sold in 1994, since which time all coal mining in Great Britain has been carried out by the private sector. The state, in the form of the Coal Authority (a non-departmental public body), remains the freehold owner of unworked coal reserves. With the phasing out of state aid to the coal industry, production has fallen sharply since the 1980s. Oil and gas exploration and production are carried out by a large number of private companies, including major international ones. Similarly, there is no state ownership within the downstream sector. The country's eight refineries are owned mainly by international oil companies.

The natural-gas sector was transformed in the 1980s and 1990s with the privatisation of the monopoly gas utility, British Gas, and the introduction of competition. Today, there are a large number of licensed wholesale and retail suppliers. The high-pressure transmission grid throughout Great Britain is operated by the National Grid. Five low-pressure gas distribution networks are owned by four gas distribution companies. Since the introduction of consumer choice in the 1990s, well over half of all retail customers have switched from the incumbent suppliers (British Gas, now Centrica in most parts of the country).

The UK electricity sector began a fundamental transformation in 1990 through a process of unbundling and privatisation. Today, the entire industry is privately-owned, apart from the 1.9 GW of old Magnox nuclear power stations that the government was not able to sell. The break-up of the former monopoly generating company, the entry of a wide range of new independent producers and divestitures by the largest initial generation companies throughout the 1990s has resulted in a high degree of fragmentation of ownership of generation assets, creating a competitive market structure. The National Grid owns and operates the England and Wales transmission system; the Scottish transmission system is owned by Scottish Power and Scottish and Southern Energy, and the Northern Ireland network by Northern Ireland Electricity. Licences for 14 distribution areas in Great Britain are currently held by seven different companies. Retail supply, which is unbundled from distribution, is dominated by six large companies which supply virtually all consumers. The majority of consumers have switched away from their incumbent supplier.

Prices, taxes and support mechanisms

There are no energy-price controls in the United Kingdom and all prices are set freely by the market. The Office of Gas and Electricity Markets (Ofgem) regulates electricity and gas network access charges through five-year price control periods that set the maximum amount of revenue which energy network owners can take through charges they levy on users of their networks. These prices are meant to cover their costs and earn them a return, while providing incentives to be efficient and to innovate technically.

Oil and gas production is subject to three taxes: the Petroleum revenue tax (PRT), which is levied at a rate of 50% on gross profits made on fields that were approved for development before 16 March 1993; the ring-fence corporation tax (30%); and a supplementary charge (which was raised from 20% to 32% in March 2011). PRT is a deductible expense for corporation tax and the supplementary charge. Various allowances are available in computing tax liabilities, including a new-field allowance that was introduced in 2009 for small, ultra-high-pressure and high-temperature oil fields, and ultra-heavy oil fields. This allowance was subsequently extended by the government to cover remote deep-water gas fields (March 2010), very deep fields with sizeable reserves (March 2012), and certain large shallow-water gas fields (July 2012). Other measures to support certain types of production include Promote licences, which allow small and start-up companies to obtain a production license first and secure the necessary operating capacity and financial resources later through reduced rent for the first two years.

Energy sales are subject to VAT (at a rate of 20%), excise taxes, and a Climate Change Levy (CCL). A reduced rate of VAT of 5% is applied to domestic fuel and power, as well as to the installation of certain energy-saving materials into domestic properties. Excise taxes are levied on oil products used for both commercial and non-commercial purposes. Businesses users pay the CCL on purchases of oil products (excluding transport fuels), natural gas, coal and electricity, though there are discounts and exemptions, depending on the source and use of the fuel (power generators are exempt, for example).

There are very few measures other than tax exemptions or reductions that support energy consumption in the United Kingdom. Schemes such as winter fuel payments for the elderly or cold-weather payments do not depend on the price of fuels and are provided in-cash to eligible households. Most of the remaining measures target consumption technologies such as low-carbon vehicles and hydrogen refuelling equipment rather than energy use *per se*.

Data documentation

General notes

The fiscal year in the United Kingdom runs from 1 April to 31 March. Following OECD convention, data are allocated to the starting calendar year so that data covering the period April 2005 to March 2006 are allocated to 2005.

Producer Support Estimate

Taxation of the oil and gas sector in the United Kingdom occurs through a variety of taxes. Fields approved for development prior to 16 March 1993 remain subject to the old Petroleum Revenue Tax (PRT), which was instituted in 1975. The PRT is a project-based tax that is levied at a rate of 50% of the profits from a given field. It allows for the full deduction of both operating and capital expenditures. The PRT does not, however, allow the deduction of interest costs and other financing charges from taxable profits.

Meanwhile, oil and gas corporations are also subject to a modified version of the regular corporation tax, namely the Ring-Fence Corporation Tax (RFCT). The imposition of a "ring fence" around upstream oil and gas activities means that these particular activities are to be treated separately for tax purposes from any other trade in which oil and gas companies may be engaged. This therefore allows upstream oil and gas activities to be taxed differently at the company-level. Differences in taxation include, for instance, the impossibility for companies to use losses in other activities as deductions against the income arising from oil and gas extraction.

While all fields are subject to the RFCT, those that were approved for development prior to 16 March 1993 can deduct the amount of PRT taxes paid from their RFCT tax base. This ensures that the fields that are still subject to the old PRT regime are not taxed twice on the same profits. In addition, all types of fields are liable to the so-called Supplementary Charge (SC), which was introduced in the Finance Act of 2002. The SC is a 32% tax on profits from oil and gas production that is levied on top of the RFCT.

The immediate write-off of both capital and exploration-and-development expenditures is normally considered under the systems in many countries to amount to a preferential tax treatment. The reason is that in calculating taxable profits in most income-tax systems, capital expenses are allocated over the period to which they contribute to earnings. Allowing the immediate writing-off these types of expenditure therefore provides companies with something akin to a zero-interest loan from the government since it delays the collection of taxes. A present-value calculation would indeed show a positive transfer from the government to the companies benefiting from such provisions.

However, when combined with impossibility for companies to deduct interest costs and other financing charges, the immediate write-off of both capital and exploration-and-development expenditures may not be considered a preferential tax treatment. This is due to the fact that this particular combination of tax provisions may approximate what is known as a "cash-flow" tax system. Cash-flow tax systems can be theoretically equivalent to the more common imputed-income tax systems where the objective is to levy a neutral business tax (Boadway and Bruce, 1984). For that reason, provisions such as the expensing of exploration and development costs may not be preferential tax provisions in the particular case of the United Kingdom.

PRT Exemption for Sales to British Gas (data for 1997-)

Proceeds from the sale of natural gas to what was formerly the British Gas Corporation are exempt from PRT if contracts were signed prior to 30 June 1975. This provision still applies to those contracts that have not been subject to any kind of "fundamental alteration" since then. The associated revenue losses are, however, expected to become negligible over time.

Sources: HM Revenue & Customs (various years), HM Revenue & Customs (2008).

Tag: GBR_te_01

PRT Tariff Receipts Allowance (data for 1997-)

This provision was introduced in 1983 and excludes some tariff receipts from taxable profits under the PRT regime. Tariffs are here understood as payments to a company for the use of its assets by other oil and gas companies.

We use production data from the IEA's Energy Balances to allocate the annual amounts reported in HM Revenue & Customs (various years) to oil and natural-gas extraction.

Sources: HM Revenue & Customs (various years), HM Revenue & Customs (2008), IEA.

Tag: GBR_te_02

PRT Uplift for Certain Capital Expenditures (data for 1997-2007)

The 1975 Oil Taxation Act allows oil and natural-gas companies subject to the PRT regime to obtain an additional 35% deduction for certain qualifying capital expenditures. Eligible types of expenditure include the costs incurred in "substantially improving the rate of production or transportation". HM Revenue & Customs (2008) also mentions that this PRT uplift is meant to compensate companies for the non-deductibility of interest costs and other financing charges.

This relief is available only while the field in question is in its initial phase and has yet to recover its start-up costs. Since PRT only applies to fields that were given development consent prior to 16 March 1993, availability of the uplift is restricted to a limited number of cases.

We use production data from the IEA's Energy Balances to allocate the annual amounts reported in HM Revenue & Customs (various years) to oil and natural-gas extraction. Estimates are not available for the years following FY2007/08.

Sources: HM Revenue & Customs (various years), HM Revenue & Customs (2008), IEA.

Tag: GBR_te_03

PRT Oil Allowance (data for 1997-)

The Oil Allowance was introduced in 1975 to encourage the development of small and marginal fields. It is a relief against PRT applicable to profits after all losses and expenditures have been relieved. The value of the allowance itself is determined using a statutory formula that depends in part on the date at which the field was developed and its location. The Oil Allowance is normally available for a period of ten years but relief can be claimed for a much longer period if there are sufficient profits to absorb all of the available deductions.

We use production data from the IEA's Energy Balances to allocate the annual amounts reported in HM Revenue & Customs (various years) to oil and natural-gas extraction.

Sources: HM Revenue & Customs (various years), HM Revenue & Customs (2008), IEA.

Tag: GBR_te_04

PRT Safeguard (data for 1997-2007)

The PRT Safeguard is a provision contained in the Oil Taxation Act of 1975. Safeguard, like the Oil Allowance, forms part of a package of measures designed to reduce the incidence of PRT on small, marginal fields. The PRT Safeguard is a relief against the amount of tax payable, and so applies only if there remains a tax liability once all expenditure and other reliefs have been taken into account. As for the PRT Uplift for Certain Capital Expenditures, Safeguard is only applicable to a limited number of fields.

We use production data from the IEA's Energy Balances to allocate the annual amounts reported in HM Revenue & Customs (various years) to oil and natural-gas extraction. Estimates are not available for the years following FY2007/08.

Sources: HM Revenue & Customs (various years), HM Revenue & Customs (2008), IEA.

Tag: GBR_te_05

Ring-Fence Expenditure Supplement (no data available)

The Ring-Fence Expenditure Supplement (RFES) was introduced in January 2006 to replace the former Exploration Expenditure Supplement (EES). In its current version, it provides oil and natural-gas companies with a yearly 10% increase in the value of unclaimed deductions for expenses related to exploration and appraisal for a period of up to six years.

No estimates are available for this particular provision.

Sources: HM Revenue & Customs (2008).

Field Allowance (no data available)

This new allowance was first introduced in 2009 and later extended to encourage the development of small or technically-challenging fields. Before 2012, qualifying fields had to be small in size, feature ultra-high pressure or temperature, possess ultra-heavy oil reserves, or be remote deep-water gas fields. In 2012, it was then announced that new field allowances would also be extended to very deep fields with sizeable reserves, and large shallow-water gas fields. This extension is expected to generate revenue losses of about GBP 20 million per year (HM Treasury, 2012).

The field allowance provides companies with a partial exemption from the Supplementary Charge. Relief is calculated at the level of the field but is provided at the company-level. Unclaimed allowances can be carried forward.

No estimates are available for this particular provision.

Sources: HM Revenue & Customs (2011[a]), HM Treasury (2012).

UK Coal Operating Aid Scheme (data for 2000-2002)

The UK Coal Operating Aid Scheme (UKCOAS) was a temporary programme designed to provide short-term financial support to otherwise viable coal producers. It was introduced in 2000 for a period of three years over which a total amount of GBP 162 million was to be spent in four tranches. The programme was approved by the European Commission under the rules of the former European Coal and Steel Community. Applications were closed after 31 December 2002.

We use production data from the IEA's Energy Balances to allocate the annual amounts reported in official documents to the various types of coal concerned.

Sources: DECC (2006[a]), IEA.

Tag: GBR_dt_01

Coal Investment Aid (data for 2004-2008)

The Coal Investment Aid (CIA) was introduced in 2003 to reimburse up to 30% of qualifying investment costs incurred by coal producers. Transfers were meant to secure access to reserves at twelve deep mines. Applications are now no longer accepted.

We use production data from the IEA's Energy Balances to allocate the annual amounts reported in official documents to the various types of coal concerned.

Sources: DECC (2006[b]), IEA.

Tag: GBR_dt_02

Mineral Extraction Allowance (no data available)

The Mineral Extraction Allowance (MEA) was introduced in 1986 to provide mining companies (including coal, oil, and natural-gas producers) with faster rates of depreciation for qualifying capitalised expenditures. The latter include the acquisition of mineral rights or deposits and expenditures connected to access to the reserves. Prescribed rates vary with the type of expenditure to which the provision applies. Analysis of this provision is, however, complicated by the interaction of the MEA with the general tax regime that applies to oil and gas extraction. These caveats do not apply to coal though.

Although this provision applies to the mining sector as a whole, data from the OECD's STAN database indicate that mining of fossil fuels accounts for nearly 90% of total gross output for the mining and quarrying sector (as defined in the standard ISIC Rev.3 sector classification).

No estimates of the revenue foregone due to the MEA are available.

Sources: HM Revenue & Customs (2008), Office of Tax Simplification (2011).

Abandonment Costs (no data available)

This provision allows capital expenditures connected to the abandonment of fields and mines to be deducted in full in the year in which they are incurred. Deductions are coupled with a carry-back provision which makes it possible for companies to use losses arising from decommissioning costs against profits earned in earlier years. This may therefore result in tax refunds.

Although this provision applies to the mining sector as a whole, data from the OECD's STAN database indicate that mining of fossil fuels accounts for nearly 90% of total gross output for the mining and quarrying sector (as defined in the standard ISIC Rev.3 sector classification).

No estimates of the revenue foregone due to the expensing of abandonment costs are available.

Sources: HM Revenue & Customs (2008).

Consumer Support Estimate

Reduced Rate of VAT for Fuel and Power (data for 1997-)

The domestic consumption of both heating fuel and power in the United Kingdom is subject to a much lower rate of VAT than that applied to regular products (20% as of January 2011). Domestic fuel and power were initially zero-rated when VAT was first introduced in 1973 but subsequently became liable to an 8% rate with the VAT Act of 1994. The latter rate was eventually lowered to 5% (the EU minimum) in 1997.

We allocate the annual amounts reported in HM Revenue & Customs (various years) to the various energy sources concerned (including electricity and heat) on the basis of the IEA's Energy Balances for the residential sector. We only report, however, the amounts attributable to fossil fuels like natural gas, kerosene, and coal.

Sources: HM Revenue & Customs (various years), IEA.

Tag: GBR_te_06

Reduced Rate of Excise for Red Diesel (no data available)

The use of "red diesel" (i.e. dyed diesel) and other such petroleum products in the United Kingdom is subject to a reduced rate of excise duty. Eligible uses include off-road vehicles such as those used for agriculture, road construction or clearing snow.

No estimates of the revenue foregone due this provision are available.

Sources: HM Revenue & Customs (2011[b]).

General Services Support Estimate

Inherited Liabilities Related to Coal-Mining (data for 1997-2009)

The Coal Authority was established by the Coal Industry Act of 1994 to address those inherited liabilities for which no licensed coal-mine operator can be held responsible. Abandoned mining sites managed by the Coal Authority include all former British Coal Corporation pits. Mine subsidence and historic liabilities such as the treatment of mine-water discharges are the Authority's two main programmes that we include here.

Data come from the Coal Authority's annual reports where yearly operating income and expenses are reported for each class of business. We therefore report for each year the sum of the net expenses associated with each of these classes (excluding those classes that do not constitute general support like "licensing" or "mining assets").

We use production data from the IEA's Energy Balances to allocate the annual amounts reported in official documents to the various types of coal concerned.

Sources: Coal Authority (various years), IEA.

Tag: GBR_dt_03

Sources

Policies or transfers

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Energy statistics

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Table 34.1. Summary of fossil-fuel support to coal – United Kingdom

(Millions of GBP, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Producer support								
Support for capital formation								
Coal investment aid	Central	19	10	0.4	1	n.a.	n.a.	n.a.
Consumer support								
Reduced rate of VAT for fuel and power	Central	27	34	41	58	48	68	81
General services support								
Inherited liabilities related to coal mining	Central	37	27	13	12	8	50	4

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Table 34.2. Summary of fossil-fuel support to petroleum – United Kingdom

(Millions of GBP, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Producer support								
Support for land and natural resources								
PRT oil allowance	Central	416	447	320	364	188	178	136
PRT safeguard	Central	21	26	0	..	..	..	..
Support for capital formation								
PRT tariff receipts allowance	Central	42	26	33	33	34	33	23
PRT uplift for certain capital expenditures	Central	42	53	0	..	..	..	..
Consumer support								
Reduced rate of VAT for fuel and power	Central	144	197	197	263	223	317	380

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Table 34.3. Summary of fossil-fuel support to natural gas – United Kingdom

(Millions of GBP, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Producer support								
Support for land and natural resources								
PRT oil allowance	Central	374	403	260	306	142	142	104
PRT safeguard	Central	19	24	0	..	..	..	..
PRT exemption for sales to British Gas	Central	40	80	40	30	20	0	0
Support for capital formation								
PRT uplift for certain capital expenditures	Central	38	47	0	..	..	..	..
PRT tariff receipts allowance	Central	38	24	27	27	26	27	17
Consumer support								
Reduced rate of VAT for fuel and power	Central	1475	1851	2009	2589	2061	2930	3510

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances.

Chapter 35.

UNITED STATES

This chapter identifies, documents, and provides estimates of the various budgetary transfers and tax expenditures that relate to the production or use of fossil fuels in the United States. An overview of the country's energy economy is first given to place the measures listed into context. A data-documentation section then describes those measures in a systematic way. Whenever possible, the description details a measure's formal beneficiary, its eligibility criteria and functioning, and the fuels whose production or use stand to benefit from the measure. The chapter ends with a set of tables that provide, subject to availability, quantitative information and estimates for the various measures listed.

Energy resources and market structure

The United States is the leading producer and consumer of energy in the world, with large and diverse energy resources. Reserves and production of oil and natural gas were in decline until recently, but have been boosted by new hydrocarbon discoveries in the Gulf of Mexico and by the deployment of new technologies that have made possible the economic development of vast new resources of unconventional gas, notably shale gas. The United States is fully self-sufficient in coal, exporting small volumes, and is largely self-sufficient in natural gas, importing a small share of its gas needs as LNG and by pipeline from Canada. By contrast, it is heavily dependent on imports of oil, which contribute 61% of its total crude-oil supply. Overall, the United States produces 78% of its energy needs domestically, down from more than 85% in 1990.

Fossil fuels make up about 84% of US primary energy supply, a relatively high share by OECD standards. Oil is the leading fuel, accounting for 36% of supply, followed by natural gas (25%) and coal (23%). Nuclear power contributes a further 10%, with renewable energy—mainly biomass—making up the remaining 6%. The fuel mix has barely changed over the last decade. Energy use rose steadily between 1981 and 2007, but fell sharply as a result of the economic crisis; by 2009, it was 7% below its peak, though it is thought to have rebounded since.

The United States has a strong tradition of private ownership in energy and takes a market-based approach to energy policy. It was among the first countries to deregulate the upstream oil and gas sector (in the 1980s) and to pursue structural reforms in wholesale natural-gas and electricity markets to boost the role of competition as a means of achieving more efficient supply and lower prices.

The coal industry is entirely privately owned. Significant deposits lie on federal lands in the west, which are leased out to mining companies. The three largest coal producers account for 40% of total coal production, with the top producer, Peabody Energy, alone accounting for 18%. Most of the coal produced is used for power generation, for which coal is the leading fuel input nationally.

The US oil market is fully deregulated and open to competition. Oil and natural-gas production is fully in the hands of private enterprises, even though about four-fifths of the country's recoverable resources are on federal land or in federally controlled offshore waters. There are more than 15 000 operating companies active in oil and gas exploration and production, including many foreign companies. The US downstream oil sector is also fully privately-owned. There are 144 refineries, the largest number anywhere in the world, most of which are relatively sophisticated with a large capacity to upgrade low-quality crude oil into light products. The distribution network comprises common-carrier and proprietary pipelines, barge and tanker fleets, and storage installations. Companies active in the sector can be fully integrated or operate as independent traders in specific market segments. The retail sector is characterised by a large number of suppliers, ranging from vertically-integrated major companies to independent operators.

The natural-gas market is dynamic and highly competitive, with a very active spot and futures market. Regional US markets are highly integrated, thanks to an extensive national network of high-pressure transmission pipelines, market centres and hubs, and are also well-integrated with the markets of Canada and Mexico. The industry has a high degree of private ownership with little vertical integration. Production, transmission and distribution are for the most part carried out by separate companies. Only a few large gas distributors own transmission pipelines. There are roughly 1 400 local gas distribution companies, most of which are small companies with a few thousand customers, though there are several with over a million customers. The only public ownership in the United States gas industry is in gas

distribution; around 950 municipality-owned gas utilities account for about 7% of all domestic gas sales. Retailing is carried out by a mixture of unbundled independent marketers and incumbent distributors, according to the degree to which retail markets have been opened to competition (which varies widely across states).

The structure of the electricity-supply industry is complex and fragmented. Less than half of the investor-owned utilities (IOUs) are vertically integrated, owning transmission and distribution assets, while three-quarters of the publicly-owned or co-operative utilities are involved solely in local distribution. Retail sales are dominated by IOUs, accounting for more than two-thirds of total sales, while wholesale power purchases are primarily undertaken by power marketers and energy service providers. Independent power producers (IPPs) mostly sell their output on the wholesale market only; few of them supply power on the retail market. Generation is dominated by the IOUs, which account for around 60% of generation by volume, while IPPs account for about 30%. The remainder is produced by subsidiaries of three federal agencies (of which only the Tennessee Valley Authority generates any electricity from fossil fuels) and by the small number of municipally-owned and co-operatively owned electric utilities that generate electric power.

The US electricity industry and the downstream natural-gas industry are subject to regulation at the local, state and federal levels. Intra-state activities are subject to regulation by state regulatory commissions, which approve plant and transmission line construction, and retail prices for the incumbent utilities. Where a utility activity crosses state boundaries, it is subject to federal regulation by the Federal Energy Regulatory Commission (FERC). Wholesale prices, plus other matters such as hydro-electric and nuclear-plant permitting issues, are under federal regulation. States have responsibility for making decisions about liberalisation of intra-state markets, but have been encouraged to do so by FERC and the federal government in recent years. Electricity market liberalisation has progressed less rapidly than in the gas sector and in some other OECD countries, primarily as a consequence of the electric-power crisis in California a decade ago, which resulted in part from poorly designed reforms, and of broader concerns about system reliability in a competitive environment. Moves to introduce or expand competition in wholesale and retail electricity markets have been suspended or halted completely in a number of states.

Prices, taxes and support mechanisms

In general, non-network forms of energy are not subject to any price controls in the United States. However, some states have the power to implement price ceilings for oil products. Electricity and natural-gas prices are generally regulated by the FERC at the wholesale level and by state regulatory commissions at the retail level. Prices and network charges are set on a cost-of-service basis.

Compared with other IEA member countries, energy is taxed at a relatively low rate in the United States. Taxes are levied by the states and by the federal government. In nearly all states, a sales tax is levied on all sales of goods and services to non-commercial users. The rates vary between the states, but generally automotive fuels are exempt from sales tax, as special taxes on these fuels are always levied at the state and, in some cases, local level. At the federal level, excise taxes are levied on highway motor fuels, aviation fuels used in domestic flights, and fuel used in powering commercial cargo vessels navigating on inland or intra-coastal waterways. An USD 0.08 per-barrel excise tax is also levied on crude oil to finance the Oil Spill Liability Trust Fund.

Mineral rights for the production of coal, oil or natural gas on federal lands and in federal offshore waters are subject to federal taxation and royalties. Royalties, bonuses and rents paid by minerals companies for mining on federal land are collected by the Bureau of Ocean

Energy Management and the Bureau of Safety and Environmental Enforcement (formerly the Minerals Management Service), and are shared on a 50/50 basis with the state in which the land lies. The state revenues are distributed in part to the counties in which production occurs. In non-federal onshore areas and offshore state waters, each state determines what royalties, severance taxes or rents are to be paid. Some jurisdictions do not levy any state-wide severance tax on the extraction of oil or natural gas.[1]

Federal tax breaks are available for some types of offshore oil and gas production. For example, oil and gas producers are allowed to expense a share of intangible exploration and production drilling costs rather than amortise them over time; non-integrated oil and gas producers can amortise geological and geophysical expenditure over a two-year period and integrated producers over seven years; and oil producers are granted a tax credit amounting to 15% of the investment costs related to the use of enhanced oil recovery methods (when the real price of crude falls below a set level). Some states also give favourable tax treatment to some types of oil and gas production. Federal tax breaks are available for refiners, notably a temporary provision in the 2005 Energy Policy Act (EPAct) allowing them to expense 50% of the cost of capital equipment used to increase refinery capacity. Support to coal mining includes the favourable tax treatment of royalty income, the partial expensing of advanced mine-safety equipment, and tax concessions for thin-seamed coal in producing states like Kentucky and West Virginia.

In the electric-power sector, municipally-owned utilities, as well as other publicly-owned utilities, are able to issue low-cost, tax-exempt debt to finance the construction of power plants and other long-lived capital facilities. A federal measure allows power generators to amortise certain pollution-control facilities over a period of seven years; tax credits are also available for investment in clean-coal technologies, such as integrated gas-combined cycle, with a view to encourage the development of advanced coal-fired power plants.

There are a number of programmes and measures relating to fossil-energy consumption. At the federal level, the Low Income Home Energy Assistance Program, set up in 1981, provides grants to poor households to help them pay their energy bills. Off-road users of gasoline and diesel fuels, including the farming, fishing, forestry and mining sectors, are not subject to federal excise taxes on fuel; most states also grant exemptions or levy reduced rates of excise tax on fuels used by these sectors.

The Strategic Petroleum Reserve (SPR), created in 1975 to provide a secure reserve of petroleum that could be accessed quickly in the event of a major disruption in supply, is also a source of support to the oil industry, as the cost is covered entirely by the federal government. The SPR accounts for about half of the US emergency stocks in terms of days of net imports, with the rest being held by the private sector. Another important source of support is the federal fossil-energy research and development programme, which provides funding for developing technologies related to fossil energy such as fuels conversion or coal liquefaction. The programme has a long history, but funding was temporarily increased under the 2009 American Recovery and Reinvestment Act. A number of states also provide support to the production and consumption of coal, oil or natural gas, mainly through the tax system.

[1] California, for example, does not levy any state-wide severance tax while Pennsylvania has only recently introduced a drilling impact fee for natural gas (including for Marcellus shale-gas wells).

Data documentation

General notes

The fiscal year in the United States runs from 1 October to 30 September. Following OECD convention, data are allocated to the ending calendar year so that data covering the period October 2005 to September 2006 are allocated to 2006. States may, however, have a different fiscal year.

Since the United States is a federal country, the data collection exercise was also conducted for a sample comprising the following states: Alaska (AK), California (CA), Colorado (CO), Kentucky (KY), Louisiana (LA), Oklahoma (OK), Pennsylvania (PA), Texas (TX), West Virginia (WV), and Wyoming (WY).

Federal government

Producer Support Estimate

Alternative Fuels Production Credit (data for 1987-)

Early versions of this measure predate the Internal Revenue Code of 1986. Since then, the Alternative Fuels Production Credit has changed markedly in terms of fuel coverage. The Energy Policy Act of 2005 provided a temporary income-tax credit equal to USD 3 (generally adjusted for inflation) per Btu oil-barrel equivalent for coke and coke gas produced in the United States. This credit applies to coke or coke gas produced during a four-year period beginning on the later of 1 January 2006 or the date at which the qualified facility[2] was placed in service. The amount of credit-eligible coke produced at any one facility may not exceed an average of 4 000 barrels of oil-equivalent a day.

An income-tax credit was also available through 2002 for oil produced from shale and tar sands, as well as natural gas produced from geo-pressured brine, Devonian shale, coal seams, and tight formations, provided that the wells were drilled before 1993. For natural gas produced from biomass, and synthetic fuels produced from coal or lignite, the credit was available through 2007, provided that the facility was placed in service before July 1998. Credits can be carried forward 20 years since the Alternative Fuels Production Credit is part of the general business credit.

EIA (1999) suggests that coalbed methane producers were the main beneficiaries of this measure until 31 December 2002, at which point coalbed methane ceased to be eligible for this particular tax credit. In the years that followed and prior to 2007, the measure then primarily benefitted synthetic coal obtained through the use of bituminous coal as feedstock (EIA, 2008). Starting in 2007, the credit now only applies to coke and coke gas, which are both produced from coking coal. We therefore allocate the measure to natural gas for the years before 2003 and to hard coal thereafter.

Sources: EIA (1999), EIA (2008), OMB (various years).

Tag: USA_te_01

2 For purposes of the credit as it applies to coke, the qualified facilities are those that were placed in service before 1 January 1993 or after 30 June 1998, and before 1 January 2010. Qualified facilities do not include facilities that produce petroleum-based coke or coke gas.

Refined Coal Credit (no data available)

This measure is meant to encourage the production of refined coal in the United States through two separate tax credits: one for the production of refined coal used to generate steam, and one for the production of fuel for the steel industry. Both credits are described below.

A first temporary income-tax credit is available for producing certain types of refined coal used to generate steam. Eligible companies may generally claim the credit during a ten-year period commencing with the date at which the qualified facility was placed in service. Qualified facilities must have been placed in service after 22 October 2004 and before 1 January 2010.

In addition, each barrel-of-oil-equivalent of steel-industry fuel produced at a qualified facility generally receives an income-tax credit. A qualified facility is any facility capable of producing steel-industry fuel and that was placed in service before 1 January 2010. Steel-industry fuel is defined as a fuel produced through a process of liquefying coal-waste sludge, distributing the liquefied product on coal, and using the resulting mixture as feedstock for the manufacture of coke. The credit is generally available for one year starting at the date at which the facility was placed in service or 31 December 2009.

This measure forms part of the broader "Energy Production Credit" as reported in OMB (various years), which also benefits several renewable-energy sources such as wind energy, biomass, and geothermal energy. The OMB does not, however, produce a separate annual estimate of the associated tax expenditure for refined coal. The Joint Committee on Taxation nevertheless estimates this particular tax expenditure to be less than USD 50 million per year (see JCT, various years).

Sources: OMB (various years), JCT (various years).

Indian Coal Credit (no data available)

Producers of coal from lands owned by Native Americans are eligible to receive a temporary income-tax credit. The measure is available for a seven-year period beginning 1 January 2006 and ending 31 December 2012. A qualified coal facility is a facility that was placed in service before 1 January 2009, and that produces coal from reserves.

This measure forms part of the broader "Energy Production Credit" as reported in OMB (various years), which also benefits several renewable-energy sources such as wind energy, biomass, and geothermal energy. The OMB does not, however, produce a separate annual estimate of the associated tax expenditure for Indian coal. The Joint Committee on Taxation nevertheless estimates this particular tax expenditure to be less than USD 50 million per year (see JCT, various years).

Sources: OMB (various years), JCT (various years).

Capital Gains Treatment of Royalties on Coal (data for 1987-)

This tax provision allows individual owners of coal-mining rights to benefit from the more favourable capital-gains tax rate rather than the regular income-tax regime when receiving royalties. The measure was introduced in 1951 with the intention of boosting coal production.

We use production data from the IEA's Energy Balances to allocate the annual amounts reported in budget documents to the various types of coal concerned (bituminous and sub-bituminous coal, lignite, and coking coal).

Sources: EIA (2008), OMB (various years), IEA.

Tag: USA_te_03

Partial Expensing for Advanced Mine Safety Equipment (data for 2006-2010)

This measure was introduced in 2006 to encourage the adoption of advanced mine safety equipment in coal extraction. For tax purposes, the Internal Revenue Code allows a 50% expensing of qualifying equipment as opposed to a regular amortisation.

We use production data from the IEA's Energy Balances to allocate the annual amounts reported in budget documents to the various types of coal concerned.

Sources: EIA (2008), OMB (various years), IEA.

Tag: USA_te_05

Expensing of Exploration and Development Costs (data for 1987-)

This measure dates back to 1986 in its present form although older versions go as far back as 1916. It allows independent oil and natural-gas producers to deduct immediately (i.e. expense) intangible drilling costs (IDCs) associated with investments in domestic oil and gas wells, and exploration and development costs for other fuels. IDCs consist of wages, machinery used for grading and drilling, and unsalvageable materials used in developing a well. Integrated oil and natural-gas companies may deduct up to 70% of such costs and recover the remaining 30% over a five-year period. Because these expenses occur prior to production and are properly attributable to future output, normal income-tax rules would treat them as capital costs and allow deductions for depletion only as the resources from the well are extracted. Similar rules apply in the case of mining exploration and development costs for minerals other than oil and natural gas (e.g. coal).

We use production data from the IEA's Energy Balances to allocate the annual amounts reported in budget documents to oil and natural-gas extraction. As is the case for most accelerated capital-depreciation provisions (of which expensing is a particular type), annual budgetary estimates can sometimes be negative. This is for instance the case when the industry to which the provision applies contracts, thereby slowing (or even reversing) capital accumulation. Accelerated depreciation causes tax revenues in the later years of a given asset's useful life to exceed what they would have been had the asset been depreciated in a conventional way. Thus, a decline in capital investment may result in tax deductions on new equipment proving not sufficient to outweigh the higher revenue flow arising from the older equipment being already depreciated for tax purposes.

Sources: EIA (2008), OMB (various years), IEA.

Tag: USA_te_06

Excess of Percentage over Cost Depletion (data for 1987-)

Under normal income-tax treatment, expenses that are capitalised into the basis of mineral properties would be recovered over time as output is extracted from the wells or mines. Under percentage depletion, producers can, however, recover these costs by claiming as a depletion allowance a fixed percentage of gross income from the property. Over time, the sum of these deductions can be several times the original cost of the investment. For oil and natural-gas properties, the percentage ranges from 15% to 25% and, except in the case of marginal wells, the deduction may not exceed 100% of the net income from the property. In addition, the percentage depletion deduction for oil and gas properties may not exceed 65% of the taxpayer's overall taxable income.

Only independent producers and royalty owners (in contrast to integrated oil companies) qualify for the percentage depletion deduction. In addition, oil and gas producers may claim percentage depletion only on up to 1 000 barrels of average daily production of domestic crude oil or an equivalent amount of domestic natural gas.

A taxpayer may also qualify for percentage depletion with respect to coal and other hard-mineral fossil-fuel properties. The amount of the deduction is in that case a statutory percentage of the gross income from the property. This percentage is 10% for coal and lignite, and 15% for shale oil.[3] The deduction may not exceed 50% of the taxable net income from the property (determined before the deductions for depletion and domestic manufacturing).

Official budget documents provide estimates of the excess deductions stemming from the use of percentage depletion by oil & gas and coal-mining companies (the baseline being the use of cost depletion). We use production data from the IEA's Energy Balances to allocate the annual amounts reported in budget documents to oil, natural-gas, and coal extraction.

Sources: EIA (2008), OMB (various years), IEA.

Tag: USA_te_07

Amortisation of Geological Expenditure (data for 2006-)

This measure allows non-integrated oil and natural-gas producers to amortise geological and geophysical expenditure over a two-year period. The amortisation period is lengthened to seven years for integrated producers. This tax provision was introduced as part of the Energy Policy Act of 2005.

We use production data from the IEA's Energy Balances to allocate the annual amounts reported in budget documents to oil and natural gas extraction.

Sources: EIA (2008), OMB (various years), IEA.

Tag: USA_te_08

Accelerated Depreciation of Natural-Gas Distribution Pipelines (data for 2006-)

The Energy Policy Act of 2005 established a statutory 15-year recovery period for natural-gas distribution pipelines placed in service after 11 April 2005 and before 1 January 2011. Prior to this, natural-gas distribution pipelines were assigned a 20-year recovery period under the Modified Accelerated Cost Recovery System. According to the IRS, the actual working life of most natural-gas pipelines is typically on the order of 20 to 25 years.

Sources: EIA (2008), OMB (various years).

Tag: USA_te_09

Exception from Passive Loss Limitation (data for 1988-)

This measure dates back to 1986 and allows partnerships and individuals having interests in oil and natural-gas properties to offset the passive losses they have incurred against their active income. The IRS defines "passive losses" as losses on activities in which the taxpayer does not materially participate (e.g. rents, royalties or dividends). Normally, these losses cannot be deducted from active income (e.g. wages) but can be carried forward for

[3] Other than shale oil to which a 7.5% depletion rate applies when used for certain non-fuel purposes.

later use against future passive-income flows. The present tax provision is an exception to this rule.

We use production data from the IEA's Energy Balances to allocate the annual amounts reported in budget documents to oil and natural-gas extraction.

Sources: EIA (2008), OMB (various years), IEA.

Tag: USA_te_10

Temporary Expensing of Equipment for Refining (data for 2006-)

This temporary tax provision was introduced as part of the Energy Policy Act of 2005. It allows eligible producers to expense 50% of the cost of any qualified property used for processing liquid fuel from crude oil or other qualified fuels. Qualified property must increase total refining capacity by 5% or more. The remaining 50% are then recovered under the otherwise applicable rules.

We allocate the annual amounts reported in budget documents to diesel fuel, kerosene, LPG, gasoline, and fuel oil on the basis of the IEA's Energy Balances for the refining sector. Because the EIA mentions that it is a "transportation fuel subsidy", we exclude such non-liquid refinery products such as paraffin wax and bitumen.

Sources: EIA (2008), OMB (various years), IEA.

Tag: USA_te_11

Aid to Small Refiners for EPA Capital Costs (data for 2005-2010)

Small-business refiners were allowed to immediately deduct as an expense 75% of the capital costs paid or incurred for purposes of complying with the Highway Diesel Fuel Sulfur Control requirement of the Environmental Protection Agency (EPA). Costs qualifying for the deduction were those costs paid or incurred during the period beginning on 1 January 2003 and ending on 31 December 2009 at the latest. Small-business refiners were defined as crude-oil refiners that had no more than 1 500 individuals engaged in refinery operations on any given day, and that had an average daily refinery run (or average retained production) of not more than 205 000 barrels for the one-year period ending on 31 December 2002.

Small-business refiners were also allowed to claim a tax credit of USD 0.05 per gallon for each gallon of low-sulphur diesel fuel produced during a taxable year. The total production credit claimed by a given taxpayer could not exceed 25% of the qualified costs incurred in complying with the EPA diesel-fuel requirements. Costs qualifying for the credit were those costs paid or incurred with respect to any facility of a small-business refiner during the period beginning on 1 January 2003 and ending on 31 December 2009 at the latest.

Sources: EIA (2008), OMB (various years).

Tag: USA_te_12

Enhanced Oil Recovery Credit (data for 1993-)

This provision gives oil and natural-gas producers a tax credit amounting to 15% of the investment costs related to the use of enhanced oil-recovery methods. "Tertiary recovery methods" make it possible to extract more oil from a given reservoir than is the case with conventional primary or secondary methods. Starting in 2004, the measure also applies to capital investment connected to transportation of the Alaskan natural gas. A phase-out

provision ensures, however, that the credit becomes unavailable when the real price of crude exceeds a certain level. This has proved to be the case every year since FY2006.

We use production data from the IEA's Energy Balances to allocate the annual amounts reported in budget documents to oil and natural-gas extraction.

Sources: EIA (2008), OMB (various years), IEA.

Tag: USA_te_13

Consumer Support Estimate

Low-Income Home Energy Assistance Program (data for 1981-)

This federal programme was created in 1981 to help low-income households pay their energy bills. It covers the costs associated not only with heating, but also cooling in order to ensure that those states that are located in warmer areas gain access to federal funding too. Being a block grant programme, the federal government uses a complex formula to allocate total funding for LIHEAP between the different states. The latter then have some discretion in administrating the grants. Home energy assistance is often provided in-kind to households as payments can be made directly to energy providers or landlords.

Only those components of the programme that directly relate to fossil fuels are being reported here. This includes both heating benefits and crisis benefits, but excludes items such as cooling benefits or weatherisation aid. We allocate the resulting annual amounts to coal, firewood, electricity, fuel oil, natural gas, kerosene, and LPG on the basis of the IEA's Energy Balances for the residential sector. We only report, however, the amounts attributable to fuel oil, natural gas, kerosene, and LPG (the numbers for coal are negligible).

Sources: U.S. Dep. of Health and Human Services (2011), LIHEAP Clearinghouse, Kaiser and Pulsipher (2003), IEA.

Tag: USA_dt_01

Credit for Investment in Clean-Coal Facilities (data for 2006-)

An investment tax credit is available for power-generation projects that use integrated gasification combined cycle (IGCC) or other advanced coal-based electricity generation technologies. As originally enacted in the Energy Policy Act of 2005, the credit amounts to 20% for investments in qualifying IGCC projects, and 15% for investments in qualifying projects that use other advanced coal-based electricity generation technologies. The Treasury may allocate up to USD 800 million of credits to IGCC projects, and USD 500 million to the other eligible ones. Under the 2008 amendments to this provision, the credit rate was increased to 30% for new IGCC and other advanced coal projects, and the Treasury is now permitted to allocate an additional USD 1.250 billion of credits to qualifying projects. The 2008 amendments also provide that qualifying projects must include equipment that separates and sequesters 65% percent of the project's total CO_2 emissions.

A tax credit of 20% is also available for investments in certain qualifying gasification projects, with a ceiling set at USD 350 million in credits. Under the 2008 amendments to the provision, the credit rate for gasification projects was increased to 30% and the Treasury was granted permission to allocate an additional USD 250 million in credits to qualified projects that separate and sequester at least 75% of total CO_2 emissions.

Fuel allocation by type of coal relies on the EIA's (2008) description of the programme. This results in bituminous coal, sub-bituminous coal, and lignite attracting most of the tax

expenditure (62%). A significant share of the programme's estimated cost (38%) remains, however, unallocated since it is directed towards "other advanced coal technologies" in general. For that reason, we allocate those remaining amounts to the various types of coal concerned on the basis of the IEA's Energy Balances for the electricity-generation sector (main activity electricity plants).

Sources: EIA (2008), OMB (various years), IEA.

Tag: USA_te_02

Amortisation of Certain Pollution-Control Facilities (data for 2008-)

Taxpayers can generally recover the cost of any certified pollution control facility over a period of 60 months. A certified air-pollution control facility is defined as a new, identifiable treatment facility which is used in connection with a plant in operation before 1 January 1976 to abate or control water or atmospheric pollution or contamination.

A certified air-pollution control facility (but not a water-pollution control facility) used in connection with an electric-generation plant which is primarily coal-fired is eligible for 84-month amortisation if the associated plant or other property was not in operation prior to 1 January 1976. This provision was added by the Energy Policy Act of 2005, and is generally applicable to property that was constructed or acquired after 11 April 2005.

Because the Joint Committee on Taxation mentions that this measure applies primarily to coal-fired power plants, we allocate the annual amounts reported in budget documents to the various types of coal concerned on the basis of the IEA's Energy Balances for the power-generation sector (main activity electricity plants).

Sources: JCT (various years), IEA.

Tag: USA_te_04

Fuel-Tax Exemptions for Farmers (data for 1984-)

The off-road use of motor fuels in the United States is exempt from federal excise taxes on fuels. This exemption is usually not treated as a tax expenditure. The United States does not measure excise tax expenditures because of the difficulties in determining the appropriate baseline. Under a baseline that considers the motor-fuels tax to be a substitute for a road-user fee, exempting from tax the motor fuel used on farms and off-highway uses does not constitute a tax expenditure. However, there are several exceptions for fuel used by on-highway vehicles. Under this baseline, exemptions to the excise tax on fuel used by on-highway vehicles could constitute tax expenditures. Under current U.S. tax law these exemptions include: (i) an exemption for intracity buses; (ii) an exemption for school buses; (iii) a reduced rate for intercity buses; (iv) an exemption for state and local governments; and (v) an exemption for qualified blood collectors.

Under an alternative baseline where all uses of motor fuels are taxed in the same way, an exemption from the motor-fuel tax would be considered a tax expenditure. This alternative baseline implicitly assumes that the motor-fuel excise tax is specifically intended to raise general revenue by raising the price of the taxed item, or to reduce externalities associated with the consumption of the fuel, but not the externalities associated with the use of vehicles on highways, or the direct cost of funding the highway system. We adopt this approach in measuring provisions that support consumption of fossil fuels in the farming sector.

Annual estimates of the value of the fuel-tax exemptions benefitting the U.S. farming sector were estimated using official sales data from the EIA combined with historical data

on federal and state tax rates from the Federal Highway Administration (FHA). Since undertaking this for every single state would not be practical, we selected a few ones on the basis of their agricultural production: Arkansas, California, Colorado, Illinois, Iowa, Kansas, Minnesota, Nebraska, and Texas.

Data are available for the years 1984 to 2010 for both diesel fuel and kerosene.

Sources: EIA [b], FHA (2011).

Tag: USA_te_28

General Services Support Estimate

Strategic Petroleum Reserve (data for 1980-)

The Strategic Petroleum Reserve (SPR) was created in 1975 to provide a secure reserve of petroleum that could be accessed quickly in the event of a major disruption in supply. The SPR consists of several storage facilities located mainly in Texas and Louisiana. It accounts for about half of the United States' emergency stocks in terms of days of net imports, with the rest being held by the private sector.

Most OECD countries use stockpiling in order to meet their IEA obligations relating to energy security. Public provision of stockpiling does not, however, necessarily entail a transfer from taxpayers to the oil industry. In some cases, governments may charge the industry a fee to cover the costs associated with running storage facilities (e.g. as in France). In others, regulatory requirements may mandate the private sector to build and maintain the necessary stockpiles (e.g. as in the United Kingdom). In the case of the SPR, support comes from the fact that the government actually pays for it. The US Department of Energy is responsible for the programme while funding is provided through annual budgetary transfers.

The value of public provision of oil stockpiling is best measured not through the direct budgetary transfers involved, but rather as the government making an investment that indirectly benefits the industry. Estimating the support element associated with the SPR is therefore not straightforward. The method used here follows that of Koplow and Martin (1998), which estimates how much the SPR would cost had it been provided by the private sector. This cost includes various elements such as capital depreciation, operating and management costs, imputed interest charges on capital, or the gains (losses) realised on sales of SPR oil. While management costs appear as such in budget documents, we use Koplow and Martin's estimated breakdown of expenditures related to SPR facilities to separate operating costs from capital-related expenditures. It is assumed that capital depreciates over a 35-year period using the straight-line method. Imputed interest charges on both capital assets and inventories are estimated using the interest rate on US Treasury bonds with a constant 30-year maturity (data for which are available on the website of the Federal Reserve System).

The entire programme is allocated to crude oil. Because the SPR benefits the oil sector as a whole and—depending on the value of the relevant elasticities—may also benefit consumers, we allocated the measure to the GSSE.

Sources: US Department of Energy (2011), Koplow and Martin (1998), EIA.

Tag: USA_dt_02

Fossil Energy R&D (data for 1994-)

This programme provides funding for research and development projects related to fossil energy such as fuels conversion or coal liquefaction. Its creation dates back to the late

1980s but it recently gained in importance with the 2009 American Recovery and Reinvestment Act (ARRA), which provided significant extra funding. A breakdown by objective is available in budget documents, thereby allowing allocation of funds to the various energy sources (i.e. coal, natural gas, and oil). Available information does not, however, make a distinction between basic and applied research. For that reason, we allocate the measure to the GSSE as it is not clear whether this programme increases current consumption or production of fossil fuels.

For those components of the programme that cannot be directly ascribed to any particular fuel (such as "programme direction" or "plant and capital equipment"), we allocate funds using the shares of each fuel in total (fuel-specific) expenses. Since these shares tend to vary substantially from one year to the next, we use moving averages with a five-year window to smooth the series over time. This accounts for the fact that energy R&D is a long-term investment for which large yearly changes in administrative and equipment charges cannot realistically be reported. Data for the years prior to 1994 are not available.

Sources: U.S. Dep. of Energy (various years), IEA.

Tag: USA_dt_03

Northeast Home Heating-Oil Reserve (data for 2000-)

The Northeast Home Heating Oil Reserve (NEHHOR) was created in 2000 to act as a buffer stock in the event of a severe disruption in the supply of heating oil. Its name comes from the fact that most households relying on heating oil reside in the Northeast region. Contrary to the Strategic Petroleum Reserve (see above), the NEHHOR does not have its own dedicated storage facilities. The government therefore relies on the private sector for both leasing of the storage tanks and acquisition of the heating oil to be stored. Since funding was initially not available in the first year of the reserve's existence, an agreement was reached whereby the US Department of Energy would swap SPR barrels of crude oil in exchange for leasing of the storage tanks and acquisition of the first two million barrels of heating oil.

Starting in February 2011, the US Department of Energy announced that it would seek to replace NEHHOR's high-sulphur heating-oil inventory with a cleaner ultra-low-sulphur distillate. This announcement was quickly followed by the sale of 984 253 barrels of heating oil from the reserve, the proceeds of which amounted to USD 113 million. A second sale of one million barrels was then conducted, thereby raising USD 114 million and emptying the reserve. New contracts with private companies were subsequently established to provide for the storage of one million barrels of cleaner ultra-low-sulphur distillate in New England. 650 000 such barrels were purchased in November 2011 and the remaining 350 000 in early 2012.

The subsidy component of the NEHHOR is easier to estimate than in the case of the SPR since the federal government does not own the premises. For the year 2000, the average acquisition cost of crude oil by refiners (from EIA) is used to calculate the implicit leasing fee effectively paid by the government in the case of the swap agreement. For the other years, we use official data on actual NEHHOR expenditures that were provided by the US Department of Energy. To remain consistent with our estimates for the SPR, heating oil inventories are treated as government-owned assets and we also account for gains and losses on sales of NEHHOR barrels. Imputed interest charges on inventories are therefore estimated using the interest rate on US Treasury bonds with a constant 30-year maturity (data for which are available on the website of the Federal Reserve System).

The entire measure is allocated to heating oil. Because the NEHHOR benefits consumers and suppliers of heating oil as a whole, we allocated the measure to the GSSE. Estimates for the year 2011 are negative due to the high prices that sales of the reserve's inventory attracted in that particular year.

Sources: US Department of Energy (various years), EIA.

Tag: USA_dt_04

Alaska

Producer Support Estimate

[Alaska] Qualified Capital Expenditure Credit (data for 2007-)

The State of Alaska introduced this provision alongside the Petroleum Profits Tax (PPT) in 2006. It was then retained in the Clear and Equitable Share (ACES) tax which was enacted in 2007. The Qualified Capital Expenditure Credit allows oil and natural-gas companies to obtain a tax credit for as much as 20% of the qualified capital expenditures incurred in a given fiscal year. Those credits can be carried forward or transferred to other companies, and are to be set against the company's PPT liability. Qualifying capital expenditure includes drilling equipment, infrastructure, and some exploration costs. New legislation adopted in 2010 expanded the original credit and now also provides for a 40% tax credit on qualified well lease expenditure incurred south of 68 degrees North latitude.

Some fiscal measures related to oil and natural-gas production may not constitute tax expenditures under an alternative baseline where severance taxes (or production taxes) vary with market conditions and production costs. We use here the annual amounts of credit claimed as reported by the Alaska Department of Revenue (various years).

We use state-level data from IPAA on the wellhead value of production to allocate the annual amounts reported in Alaska Department of Revenue (various years) to oil and natural-gas extraction.

Sources: Alaska Department of Revenue (various years), IPAA.

Tag: USA_te_19

[Alaska] Development Credit for Certain Producers (data for 2007-)

The State of Alaska provides certain producers with a full tax credit on the amounts of oil and natural-gas produced in the state. This measure was adopted in 2006 alongside the new Petroleum Profits Tax. Two categories of producers are eligible for the credit. The first one includes those companies that operate outside the North Slope and Cook Inlet areas and that produce less than 100 000 barrels of oil equivalent a day. The second category is broader and comprises all companies producing less than 100 000 barrels of oil equivalent a day. Credits available to the first category are capped at USD 6 million per company per year while those for the second category are capped at USD 12 million. In both cases, producers are required to have a positive tax liability before other tax credits are applied, and cannot transfer nor carry the credits forward.

Some fiscal measures related to oil and natural-gas production may not constitute tax expenditures under an alternative baseline where severance taxes (or production taxes) vary with market conditions and production costs. We use here the annual amounts of credit claimed as reported by the Alaska Department of Revenue (various years).

We use state-level data from IPAA on the wellhead value of production to allocate the annual amounts reported in Alaska Department of Revenue (various years) to oil and natural-gas extraction.

Sources: Alaska Department of Revenue (various years), IPAA.

Tag: USA_te_20

[Alaska] Alternative Credit for Exploration (data for 2007-)

This tax provision was introduced by the State of Alaska in 2003. It allows oil and natural-gas companies operating in the state to obtain a tax credit for certain qualifying exploration expenditures. The credit was initially worth 20-30% of eligible expenditures but was subsequently increased to 30-40% with the 2007 tax reform.

Some fiscal measures related to oil and natural-gas production may not constitute tax expenditures under an alternative baseline where severance taxes (or production taxes) vary with market conditions and production costs. We use here the annual amounts of credit claimed as reported by the Alaska Department of Revenue (various years).

We use state-level data from IPAA on the wellhead value of production to allocate the annual amounts reported in Alaska Department of Revenue (various years) to oil and natural-gas extraction.

Sources: Alaska Department of Revenue (various years), IPAA.

Tag: USA_te_21

[Alaska] Alaska Gasline Inducement Act (data for 2008-)

This item comprises a stream of matching funds that were granted by the State of Alaska to TransCanada (a natural-gas transmission company) to help finance the construction of a gas pipeline through Alaska and Canada. The Alaska Gasline Inducement Act (AGIA) was enacted in 2007 to provide incentives to a licensee for completion of a pipeline that would bring North Slope gas to the market. The licensee was to be selected among a pool of applicants from which TransCanada was eventually chosen in 2008.

The incentives are to be mostly provided in the form of reimbursements worth a total of USD 500 million, spread over several years. Expenditures that qualify for the reimbursements are certain transportation commitments, financing charges, the costs stemming from compliance with certain administrative and regulatory requirements, etc. TransCanada submitted its first request for reimbursements in late 2009. In addition, the State of Alaska has made a commitment not to provide financial and fiscal assistance to other projects that could compete with the AGIA pipeline.

Data on the value of annual transfers can be found in a 2012 follow-up report on AGIA prepared by the State of Alaska. Sums are entirely allocated to natural gas.

Sources: State of Alaska (2012).

Tag: USA_dt_08

[Alaska] Cook Inlet Jack-Up Rig Credit (no data available)

This measure was introduced in 2010 by the State of Alaska to promote the use of "jack-up rigs" (i.e. mobile drilling platforms) in the Cook Inlet area. It provides a production-tax credit to the first three companies to drill offshore exploration wells in the region.

No estimates are available for this particular measure.

Sources: Alaska Department of Revenue (various years).

[Alaska] Gas Exploration and Development Credit (no data available)

This corporate-income-tax provision of Alaska Statutes was enacted in 2003. It provides oil and natural-gas companies conducting exploration activities in areas south of 68 degrees North latitude with an income-tax credit on certain qualifying capital investments. The credit was renewed and further expanded starting in 2010.

No estimates are available for this particular measure.

Sources: Alaska Department of Revenue (various years).

[Alaska] Gas Storage Facility Credit (no data available)

This measure was first implemented in 2010 to encourage the construction and operation of gas-storage facilities in Alaska. It provides eligible companies with an income-tax credit for as much as USD 1.5 per 1 000 cubic feet of storage capacity.

No estimates are available for this particular measure.

Sources: Alaska Department of Revenue (various years).

Consumer Support Estimate

[Alaska] Small Municipality Energy Assistance Program (data for 2005-08)

This programme was created in October 2004 and provided grants to certain small municipalities of Alaska to help them pay for their fuel purchases. Qualifying municipalities were those cities that had a population of less than 2 500 residents in 2003. Grants had to be used first to repay any remaining debt that municipalities had with the Bulk Fuel Revolving Loan Fund. The latter is a loan programme that is managed by the Alaska Energy Authority. If repayments did not exhaust the grants, funds from the Small Municipality Energy Assistance Program could then be used to directly finance purchases of fuels.

The numbers reported in the database for this programme are based on appropriations. We allocate the measure entirely to heating oil.

Sources: Alaska OMB (various years).

Tag: USA_dt_05

[Alaska] Power Cost Equalization (data for 1988-)

This programme grants indirect financial assistance to power consumers located in remote areas of Alaska where provision of electricity can be very costly. The Alaska Energy Authority (AEA) administers the scheme but the level of support for each utility participating in it is set by the Regulatory Commission of Alaska. This level is in turn determined by a specific formula which compares the actual generation costs of a given utility to a floor (a ceiling) under (above) which PCE assistance becomes unavailable (capped). Participating utilities must also meet certain efficiency standards.

Although the Power Cost Equalization scheme is an electricity subsidy, virtually all of the participating utilities generate power using diesel fuel only. The programme is thus indirectly supporting the use of diesel and we allocate it correspondingly. The data

reported in the database are actual disbursements that can be found in annual reports of the AEA.

Sources: Alaska Energy Authority (various years).

Tag: USA_dt_06

[Alaska] Alaska Affordable Heating Program (data for 2009-)

This programme was created in 2009 by the state of Alaska to supplement the federally-funded LIHEAP (see "Low-Income Home Energy Assistance Program" above). While LIHEAP targets households with incomes below 150% of the poverty line, the state-funded Alaska Affordable Heating Program (formerly the Alaska Heating Assistance Program, or AKHAP) does so for households with incomes between 150% and 225% of the same threshold, thereby extending LIHEAP eligibility criteria. Both programmes are implemented in the same way with most of the payments being given directly to energy suppliers. Payments are then passed onto final consumers through credits on their heating bills.

We allocate the annual amounts reported in Alaska's budget documents to coal, firewood, electricity, heating oil, kerosene, LPG, and natural gas on the basis of state-level data from the EIA's State Energy Data System for the residential sector. We only report, however, the amounts attributable to heating oil and natural gas (the numbers for coal, LPG, and kerosene are negligible).

Sources: Alaska OMB (various years), EIA [a].

Tag: USA_dt_07

California

Producer Support Estimate

[California] Percentage Depletion of Mineral and Other Resources (data for 2002-)

This measure extends the corresponding federal provision for percentage depletion to California's own corporation tax system (see "Excess of Percentage over Cost Depletion" above). Under percentage depletion, producers of minerals and fossil fuels can recover capitalised costs by claiming as a depletion allowance a fixed percentage of gross income from the property. Under normal income-tax treatment, expenses that are capitalised into the basis of mineral properties would be recovered over time as output is extracted from the wells or mines.

As is the case at the federal level, the depletion allowance cannot exceed 50% of a producer's net income from the property (100% for oil and natural-gas properties).

Because the measure applies to all minerals and not only fossil fuels, we use data from the US Census Bureau on the total value of shipments and receipts in California's mining industry to allocate the amounts reported in California Department of Finance (various years) to fossil-fuel mining and non-fossil-fuel mining. The estimated share attributable to fossil-fuel mining is then divided between crude oil and natural gas on the basis of state-level data from IPAA on the wellhead value of production.

Sources: US Census Bureau (2002), U.S. Census Bureau (2007), California Department of Finance (various years), IPAA.

Consumer Support Estimate

[California] Sales-Tax Exemption for LPG (no data available)

This provision was introduced in 2001 and exempts the use of LPG for farm and residential purposes from California's sales and use tax.

Although the state of California does not produce annual estimates of the fiscal cost of this provision, it initially stated that revenue foregone would amount to USD 7 million in the first year following the introduction of the exemption.

Sources: California Department of Finance (various years).

[California] Sales-Tax Exemption for Diesel Used in Farming (data for 2001-)

The use of diesel fuel in activities related to farming and food processing (including transporting farm products to the marketplace) is partially exempted from California's sales and use tax. This measure was introduced in 2001 alongside a broader sales-tax exemption for farming machinery and equipment.

We allocate this measure entirely to diesel fuel.

Sources: California Department of Finance (various years).

Tag: USA_te_46

[California] Sales-Tax Exemption for Water Common Carriers (data for 2002-)

This measure exempts the use of fuels by water common carriers from the sales and use tax normally levied on most sales of merchandise in California. This exemption was introduced in its current form in 1992 and applies to shipments outside the state of California.

We allocate this measure entirely to fuel oil.

Sources: California Department of Finance (various years).

Tag: USA_te_47

[California] Fuel-Tax Exemption for Aircraft Jet Fuel (data for 2002-)

This measure exempts certain uses of jet fuel from California's fuel tax, which is normally levied on most sales of motor fuels in that state. Eligible uses include the mandated transport of persons or property and the use of jet fuel by the U.S. armed forces. This exemption is distinct from California's sales-and-use-tax exemption for fuel sold to common carriers, which serves to prevent the taxation of international flights.

We allocate this measure entirely to kerosene-type jet fuel.

Sources: California Department of Finance (various years).

Tag: USA_te_48

[California] Fuel-Tax Exemption for Schools (data for 2002-)

This measure partially exempts the use of diesel fuel by certain public transit companies and school districts from California's fuel tax.

We allocate this measure entirely to diesel fuel.

Sources: California Department of Finance (various years).

Tag: USA_te_49

Colorado

Producer Support Estimate

[Colorado] Severance-Tax Offset for Property Taxes (no data available)

Oil and natural-gas producers operating in Colorado can obtain a severance tax credit for as much as 87.5% of the amount of property tax paid on their oil and gas leaseholds. This does not include the amount of property tax paid on facilities and equipment, for which no credit can be obtained. In some cases, this measure can have the effect of effectively removing any severance-tax liability that oil and gas producers would normally have to pay.

No estimates are available for this particular measure.

Sources: Colorado Revised Statutes 39-29-105, IOGCC (2007).

[Colorado] Severance-Tax Exemption for Stripper Wells (no data available)

This provision exempts the income derived from oil and natural-gas "stripper wells" from the severance tax that is usually levied on oil and gas extraction activities conducted in the state of Colorado. "Stripper wells" are those wells that produce daily on average 15 barrels or less of oil, or 90 000 cubic feet or less of natural gas.

Some fiscal measures related to oil and natural-gas production may not constitute tax expenditures under an alternative baseline where severance taxes (or production taxes) vary with market conditions and production costs.

No estimates are available for this particular measure.

Sources: Colorado Revised Statutes 39-29-105, IOGCC (2007).

[Colorado] Impact Assistance Credit (no data available)

This measure provides mining companies (including oil and gas companies) operating in Colorado with a severance tax credit for the amount of approved contributions paid to local governments so they can deal with the social and economic impacts that mining activities have locally. The total amount of credit that can be claimed cannot exceed 50% of the severance-tax liability that taxpayers anticipate to incur in the first ten years of severance of the project.

Some fiscal measures related to oil and natural-gas production may not constitute tax expenditures under an alternative baseline where severance taxes (or production taxes) vary with market conditions and production costs.

No estimates are available for this particular measure.

Sources: Colorado Revised Statutes 39-29-107.5.

[Colorado] Severance-Tax Reductions for Low-Volume Wells (no data available)

Oil and natural-gas wells generating gross incomes below USD 300 000 per year in Colorado attract lower rates of severance tax (from 2% to 4%) as compared with the higher 5% rate prevailing in the state.

Some fiscal measures related to oil and natural-gas production may not constitute tax expenditures under an alternative baseline where severance taxes (or production taxes) vary with market conditions and production costs.

No estimates are available for this particular measure.

Sources: Colorado Revised Statutes 39-29-105.

[Colorado] Severance-Tax Reduction for Underground Coal (no data available)

Coal produced from underground mines in Colorado attracts a 50% reduction in the rate of severance tax that normally applies to coal mining in the state.

Some fiscal measures related to coal production may not constitute tax expenditures under an alternative baseline where severance taxes (or production taxes) vary with market conditions and production costs.

No estimates are available for this particular measure.

Sources: Colorado Revised Statutes 39-29-106.

[Colorado] Severance-Tax Reduction for Lignite (no data available)

The production of lignitic coal in Colorado is subject to a lower rate of severance tax than that normally applied to coal mining in the state.

Some fiscal measures concessions related to coal production may not constitute tax expenditures under an alternative baseline where severance taxes (or production taxes) vary with market conditions and production costs.

No estimates are available for this particular measure.

Sources: Colorado Revised Statutes 39-29-106.

[Colorado] Severance-Tax Exemption for Low-Volume Coal Mining (no data available)

This provision exempts the first 300 000 tons of coal produced each quarter in Colorado from the severance tax that normally applies to coal mining in the state.

Some fiscal measures related to coal production may not constitute tax expenditures under an alternative baseline where severance taxes (or production taxes) vary with market conditions and production costs.

No estimates are available for this particular measure.

Sources: Colorado Revised Statutes 39-29-106.

[Colorado] Severance-Tax Reductions for New Oil-Shale Facilities (no data available)

This measure provides new oil-shale commercial facilities operating in Colorado with reductions in the rate of severance tax that normally applies to oil-shale production in the state. Reductions range from 100% in the first 180 days after commercial production starts to 25% in the third year that follows.

Some fiscal measures related to oil and natural-gas production may not constitute tax expenditures under an alternative baseline where severance taxes (or production taxes) vary with market conditions and production costs.

No estimates are available for this particular measure.

Sources: Colorado Revised Statutes 39-29-107.

[Colorado] Severance-Tax Exemption for Low-Volume Oil-Shale Production (no data available)

This provision exempts the first 15 000 tons—or the first 10 000 barrels, whichever is greater—of oil shale produced per day in Colorado from the severance tax that normally applies to oil-shale extraction in the state.

Some fiscal measures related to oil and natural-gas production may not constitute tax expenditures under an alternative baseline where severance taxes (or production taxes) vary with market conditions and production costs.

No estimates are available for this particular measure.

Sources: Colorado Revised Statutes 39-29-107.

[Colorado] Occupational-Privilege-Tax Exemption for Oil and Gas Workers (no data available)

Occupational privilege taxes are taxes that are sometimes levied by counties and municipalities to compensate for the fact that workers there may require services from local governments for which they do not pay taxes if they are not residents. The oil and natural-gas sector in Colorado is specifically exempted from paying any such tax in the state.

No estimates are available for this particular measure.

Sources: Colorado Revised Statutes 31-15-501, IOGCC (2007).

[Colorado] Reduced Value for Certain Mineral Properties (no data available)

This provision allows oil and natural-gas leaseholds and lands in Colorado to be valued for property-tax purposes at 87.5% of the value of production sold therefrom during the preceding year. This percentage is further lowered to 75% in the case of oil and natural-gas production sites using secondary or tertiary recovery methods.

No estimates are available for this particular measure.

Sources: Colorado Revised Statutes 39-29-105 and 39-7-102, IOGCC (2007).

Consumer Support Estimate

[Colorado] Sales-Tax Exemption for Energy Used in Manufacturing (data for 2002-)

This measure was enacted in 1937 and exempts purchases of energy products by industrial users in Colorado from the sales tax that is normally levied on most sales of goods and services in the state. Eligible industrial users include the manufacturing sector, the mining sector, the refining sector, the construction sector, and the telecommunications sector.

This tax provision was temporarily repealed on 1 March 2010 when it was decided that industrial users of energy products would pay the state's regular 2.9% sales tax. The exemption was then reinstated starting on 1 July 2012.

We allocate the annual amounts reported in Colorado's sales-tax exemption study to the various energy products concerned on the basis of state-level data from the EIA's State Energy Data System for the industrial sector. We only report, however, the amounts attributable to fossil fuels such as natural gas, fuel oil or petroleum coke.

Sources: Colorado Department of Revenue (various years), EIA [a].

Tag: USA_te_50

[Colorado] Sales-Tax Exemption for Gasoline and Special Fuel (data for 2002-)

This measure dates back to 1935 and exempts purchases of gasoline and "special fuel" in Colorado from the sales tax that is normally levied on most sales of goods and services in the state. "Special fuel" in Colorado comprises fuels like diesel fuel, kerosene, LPG, and compressed natural gas when used to propel a vehicle on a highway.

We allocate the annual amounts reported in Colorado's sales-tax exemption study to gasoline, diesel fuel, LPG, and compressed natural gas on the basis of state-level data from the EIA's State Energy Data System for the transportation sector. We only report, however, the amounts attributable to gasoline, diesel fuel, and natural gas (the numbers for LPG are negligible).

Sources: Colorado Department of Revenue (various years), EIA [a].

Tag: USA_te_51

[Colorado] Sales-Tax Exemption for Residential Use of Fuel (data for 2002-)

This measure was introduced in 1979 and exempts purchases of fuel by residential users in Colorado from the sales tax that is normally levied on most sales of goods and services in the state.

We allocate the annual amounts reported in Colorado's sales-tax exemption study to the various energy products concerned on the basis of state-level data from the EIA's State Energy Data System for the residential sector. We only report, however, the amounts attributable to natural gas and LPG (the numbers for coal, fuel oil, and kerosene are negligible).

Sources: Colorado Department of Revenue (various years), EIA [a].

Tag: USA_te_52

[Colorado] Sales-Tax Exemption for Fuel Used on Farms (data for 2002-)

This provision was enacted in 1977 and exempts purchases of "special fuels" by farmers in Colorado from the sales tax that is normally levied on most sales of goods and services in the state. "Special fuel" in Colorado comprises fuels like diesel, kerosene, LPG, and compressed natural gas when used to propel a vehicle on a highway.

We allocate this measure entirely to diesel fuel (and light fuel oil) given that the use of kerosene and other special fuels is marginal in Colorado's farming sector.

Sources: Colorado Department of Revenue (various years).

Tag: USA_te_53

General Services Support Estimate

[Colorado] Mineral Resources and Mapping Program (no data available)

This programme forms part of Colorado's Geological Survey within the Department of Natural Resources. Its missions are to study mineral resources and to produce reports, maps, and statistical data on minerals and energy resources in Colorado. In addition to energy resources, the Colorado Geological Survey has also studied CO_2 sequestration opportunities.

This programme is allocated to the GSSE since it benefits Colorado's mining sector as a whole.

Sources: Colorado Department of Natural Resources (2009).

Kentucky

Producer Support Estimate

[Kentucky] Thin-Seam Tax Credit (data for 2004-)

This tax provision was introduced by the Commonwealth of Kentucky in 2000. It allows mining companies operating in the state to get a tax credit for coal mined from thin seams or from areas with a high overburden ratio. The credit is on a sliding scale from 2.25% to 3.75% of the value of the severed coal and based on the thickness of the seam, the ratio of overburden removed to coal severed, and the sulphur content of the coal.

Some fiscal measures related to coal production may not constitute tax expenditures under an alternative baseline where severance taxes (or production taxes) vary with market conditions and production costs.

We allocate this measure entirely to hard coal given that the state of Kentucky mainly produces bituminous coal and some small quantities of anthracite.

Sources: Commonwealth of Kentucky (various years).

Tag: USA_te_54

[Kentucky] Coal Transportation Expense (data for 2004-)

This provision was enacted in 1978 to encourage coal production in the state of Kentucky. It allows coal producers, when computing the gross value of production, to deduct transportation expenses incurred in transporting coal from the mine mouth or pit to a processing plant, loading point, or customer.

We allocate this measure entirely to hard coal.

Sources: Commonwealth of Kentucky (various years).

Tag: USA_te_55

[Kentucky] Excess of Percentage over Cost Depletion (data for 2004-)

This measure extends the corresponding federal provision for percentage depletion to Kentucky's own corporation tax system. It allows companies to calculate deductions from their taxable income based on a percentage of the gross income derived from mining or drilling for natural resources. Under normal income-tax treatment, producers would recover investment costs over time as resources are depleted. In the case of percentage depletion, the sum of deductions can exceed the actual cost of investment.

We allocate the measure entirely to hard coal.

Sources: Commonwealth of Kentucky (various years).

Tag: USA_te_56

[Kentucky] Sales-Tax Incentive for Alternative-Fuel or Gasification Facilities (data for 2008-)

This allowance was introduced in 2008 to exempt eligible taxpayers from the sales taxes paid on tangible personal property used in the process of constructing an alternative fuel or gasification facility.

We allocate the measure entirely to hard coal.

Sources: Commonwealth of Kentucky (various years).

Tag: USA_te_58

Consumer Support Estimate

[Kentucky] Coal Incentive Tax Credit (data for 2004-)

This tax provision was introduced in 2000 and can be claimed by any eligible electric-power company or entity operating coal-fired electric generation plants, alternative fuel facilities, or gasification facilities. The tax credit amounts to USD 2 per short ton of coal purchased in excess of the amounts purchased in a reference year. The eligible quantities of coal must be used to generate electric power or used as feedstock in an alternative fuel facility or a gasification facility.

We allocate the measure entirely to hard coal.

Sources: Commonwealth of Kentucky (various years).

Tag: USA_te_57

[Kentucky] Sales-Tax Exemption for Fuel Used in Farming (data for 2004-)

This measure was introduced in 1978 and subsequently revised in 1998. It exempts motor fuels used in farming activities to operate tractors or stationary engines from Kentucky's sales and use tax, which is normally levied on most sales of goods and services in the state.

We allocate the annual amounts reported in Kentucky's tax-expenditure analysis to diesel fuel and kerosene on the basis of state-level data from the EIA on annual sales of fuel to the farming sector.

Sources: Commonwealth of Kentucky (various years), EIA [b].

Tag: USA_te_59

[Kentucky] Sales-Tax Exemption for Energy and Energy-Producing Fuels (data for 2004-)

This tax provision was enacted in 1960. It provides that all energy and energy-producing fuels used in manufacturing, processing, mining, or refining and any related distribution, transmission, and transportation services, to the extent that the cost of the energy or energy-producing fuels used exceeds 3% of the costs of production, are exempt from Kentucky's sales and use tax.

We allocate the annual amounts reported in official documents to the various fuels concerned on the basis of state-level data from the EIA's State Energy Data System for the industrial sector.

Sources: Commonwealth of Kentucky (various years), EIA [a].

Tag: USA_te_60

[Kentucky] Sales-Tax Reduction for Jet Fuel (data for 2004-)

This measure was introduced in 2000 to provide certified air carriers in Kentucky with a tax credit after payment of the first USD 1 million in sales-and-use tax applicable to the purchase of aircraft fuel (including jet fuel) in the state.

We allocate this measure entirely to kerosene-type jet fuel since the sales volumes of aviation gasoline in Kentucky are fairly small.

Sources: Commonwealth of Kentucky (various years).

Tag: USA_te_61

[Kentucky] Gasoline Tax Exemptions (data for 2004-)

This item comprises tax provisions related to the consumption of gasoline in five different sectors in Kentucky. Estimates were aggregated since they present fairly small values if reported individually.

The first measure consists of a gasoline-tax exemption for agriculture purposes, which was introduced in 1946 and subsequently revised in 2002. This concession establishes that the gasoline used exclusively in tractors or stationary engines for agricultural purposes is exempt from the state's gasoline tax.

Gasoline-tax exemptions also include a provision for aircraft refund, which was introduced in 1942 and allows 100% of the tax paid to be refunded if the gasoline is used in an aircraft engaged in the transportation of persons or property.

The third measure comprises a tax exemption for buses, taxicabs, and the transport of senior citizens, which was enacted in 1978. It states that seven-ninths of the tax paid is refunded if the gasoline is used in regularly scheduled operations of the city and suburban buses, taxicabs, non-profit buses, or the transport of senior citizens.

The tax exemption for gasoline used in boats and watercrafts was introduced in 1960 and provides that the entire tax paid be refunded to qualified boat dock operators if the gasoline is used to operate or propel boats and watercrafts.

Last, the present item also includes a measure dating back to 1956, and which states that the gasoline sold to the U.S. Government is exempt from tax. However, the reporting of this provision changed in 2006, and gasoline sales and excise tax exemptions to the U.S. government were then removed from Kentucky's tax-expenditure reports that were published following the 2008-2010 TEA, though the policy itself has not changed.

Under a baseline that considers the motor-fuels tax to be a substitute for a road-user fee, exempting from tax the motor fuel used on farms and off-highway uses does not constitute a tax expenditure. Under an alternative baseline where all uses of motor fuels are taxed in the same way, an exemption from the motor-fuel tax would, however, be considered a tax expenditure. This baseline implicitly assumes that the motor-fuel excise tax is specifically intended to raise general revenue by raising the price of the taxed item, or to reduce externalities associated with the consumption of the fuel, but not the externalities associated with the use of vehicles on highways, or the direct cost of funding the highway system. We adopt this approach here in measuring support for the consumption of fossil fuels in Kentucky.

Sources: Commonwealth of Kentucky (various years).

Tag: USA_te_62

[Kentucky] Special-Fuels Tax Exemption for Agricultural Use (data for 2004-)

This provision was introduced in 1988 and exempts special fuels used in farming activities to operate stationary engines or tractors from Kentucky's special-fuels tax. According to Kentucky's Department of Revenue, special fuels consist of all combustible gases and liquids capable of being used in motor vehicles, excepting gasoline and liquefied petroleum gas.

This exemption may not be considered a tax expenditure depending on the baseline used to measure it (see "USA_te_62" for a discussion of tax baselines).

We allocate the annual amounts reported in Kentucky's tax-expenditure analysis to diesel fuel and kerosene on the basis of state-level data from the EIA on annual sales of fuel to the farming sector.

Sources: Commonwealth of Kentucky (various years), EIA [b].

Tag: USA_te_63

[Kentucky] Special-Fuels Tax Exemption for Non-Highway Uses (data for 2004-)

This measure was introduced in 1988 and revised in 2000. It allows taxpayers to benefit from a tax exemption for special fuels used exclusively in unlicensed vehicles or equipment meant for non-highway purposes. According to Kentucky's Department of Revenue, special fuels consist of all combustible gases and liquids capable of being used in motor vehicles, excepting gasoline and liquefied petroleum gas.

This exemption may not be considered a tax expenditure depending on the baseline used to measure it (see "USA_te_62" for a discussion of tax baselines).

We allocate this measure entirely to diesel fuel since the sales volumes of kerosene for non-highway purposes in Kentucky are fairly small.

Sources: Commonwealth of Kentucky (various years).

Tag: USA_te_64

[Kentucky] Special-Fuels Tax Exemption for Railroad Companies (data for 2004-)

This provision was introduced in 1988 and exempts the use of special fuels used by railroad companies principally engaged in the business of transporting persons or property from Kentucky's special-fuels tax. According to Kentucky's Department of Revenue, special fuels consist of all combustible gases and liquids capable of being used in motor vehicles, excepting gasoline and liquefied petroleum gas.

We allocate this measure entirely to diesel fuel.

Sources: Commonwealth of Kentucky (various years).

Tag: USA_te_65

[Kentucky] Special-Fuels Tax Exemption for Residential Heating (data for 2004-)

This measure dates back to 1988 and provides that a special exemption be allowed for special fuels used exclusively in heating personal residences. According to Kentucky's Department of Revenue, special fuels consist of all combustible gases and liquids capable of being used in motor vehicles, excepting gasoline and liquefied petroleum gas.

We allocate the annual amounts reported in Kentucky's tax-expenditure analysis to diesel fuel and kerosene on the basis of state-level data from the EIA on annual sales of fuel to the residential sector.

Sources: Commonwealth of Kentucky (various years), EIA [b].

Tag: USA_te_66

[Kentucky] Other Special-Fuels Tax Exemptions (data for 2004-)

This item comprises various tax provisions related to the consumption of so-called "special fuels" in five different sectors in Kentucky. The concessions were added together since they present fairly small values if reported individually. According to Kentucky's Department of Revenue, special fuels consist of all combustible gases and liquids capable of being used in motor vehicles, excepting gasoline and liquefied petroleum gas.

The first measure consists of a special-fuels tax exemption for buses, taxicabs, and transport of senior citizens, which was enacted in 1978. It states that seven-ninths of the tax paid is to be refunded if special fuels are used in regularly scheduled operations of the city and suburban buses, taxicabs, non-profit buses, and the transport of senior citizens.

The tax exemption for special fuels used in boats and watercrafts was introduced in 1960 and provides that the entire tax paid be refunded to qualified boat dock operators if the special fuel is used to operate or propel boats and watercrafts.

The tax exemption for special fuels used in religious, charitable or educational activities was introduced in 1988 and provides a special-fuels tax exemption applicable to sales of fuels to non-profit religious, charitable or educational organizations (for non-highway uses).

A fourth measure included here is the tax exemption for special fuels used by state and local governments, which was introduced in 1988. It provides that a special-fuels tax exemption be applied to sales of fuel to state and local government agencies (for non-highway uses).

Last, the present item also includes a measure that dates back to 1988, and which states that special fuel sold to the U.S. Government be exempted from tax. As noted above (see "USA_te_62"), the tracking of fuel-tax exemptions benefitting the federal government in Kentucky ended with the 2006-08 TEA.

These exemptions may not be considered tax expenditures depending on the baseline used to measure them (see "USA_te_62" for a discussion of tax baselines).

We allocate this item entirely to diesel fuel.

Sources: Commonwealth of Kentucky (various years).

Tag: USA_te_67

General Services Support Estimate

[Kentucky] Railroad Improvement Tax Credit (data for 2010-)

This new provision was introduced in 2009 and provides a tax credit to certain railroad companies against the costs incurred for maintenance and improvement, and for railroad expansion or upgrades to accommodate the transport of fossil energy or biomass resources.

This programme is allocated to the GSSE since it benefits Kentucky's coal-mining sector as a whole. We allocate this measure entirely to hard coal.

Sources: Commonwealth of Kentucky (various years).

Tag: USA_te_68

[Kentucky] Department for Energy Development and Independence (data for 2006-)

The Department for Energy Development and Independence (DEPI; formerly Kentucky's Office of Energy Policy) serves to promote the development of Kentucky's energy resources and help maintain low energy prices. Funding goes towards university, research and development, and demonstration programmes, with a significant focus on coal but also including some programmes for renewable energy and energy efficiency. 80% of the Department's general fund is estimated to be coal-related expenditures.

This programme is allocated to the GSSE since it benefits Kentucky's coal industry as a whole and does not increase current production or consumption of fossil fuels. We allocate this measure entirely to hard coal.

Sources: Kentucky Office of State Budget Director (various years).

Tag: USA_dt_09

[Kentucky] Coal Academy – Mining Workforce Development (data for 2006-)

The Commonwealth of Kentucky provides every year a USD 3 million grant to the Coal Academy, a mining workforce development programme offered through the Kentucky Community and Technical College System.

This programme is allocated to the GSSE since it benefits Kentucky's coal-mining sector as a whole. We allocate this measure entirely to hard coal.

Sources: Kentucky Office of State Budget Director (various years), Kentucky Community and Technical College System.

Tag: USA_dt_10

[Kentucky] Mine Safety and Licensing (data for 2006-)

The state of Kentucky's general fund contributes funding to the Office of Mine Safety and Licensing, which provides education and training to coal miners and ensures safe work practices.

This programme is allocated to the GSSE since it benefits Kentucky's coal-mining sector as a whole. We allocate this measure entirely to hard coal.

Sources: Kentucky Office of State Budget Director (various years).

Tag: USA_dt_11

Louisiana

Producer Support Estimate

[Louisiana] Excess of Percentage over Cost Depletion (data for 1997-)

This measure was introduced in 1934 and extends the corresponding federal provision for percentage depletion to Louisiana's corporation tax system. It allows oil and natural-gas producers to calculate deductions from their taxable income based on a percentage of the gross value of the resources being extracted. Under normal income-tax treatment, producers would recover investment costs over time as resources are depleted. In the case of percentage depletion, the sum of deductions can exceed the actual cost of investment.

The state of Louisiana limits the percentage depletion deduction to 50% of a taxpayer's net income. The Louisiana percentage depletion rate for oil and gas is 22%, which is higher than the federal rate of 14%.

We use state-level data from IPAA on the wellhead value of production to allocate the annual amounts reported in Louisiana Department of Revenue (various years) to oil and natural-gas extraction.

Sources: Louisiana Department of Revenue (various years), IPAA.

Tag: USA_te_69

[Louisiana] Natural-Gas Severance-Tax Suspension for Horizontal Wells (data for 1997-)

This tax provision was introduced by the State of Louisiana in 1994. It provides for a suspension of all severance-tax liabilities for a period of 24 months, or until payout of well costs is achieved, for any gas well drilled or recompleted horizontally for which production started after 31 July 1994.

According to Louisiana's Department of Natural Resources, payout of well costs is defined as the cost of developing the well before production begins.

Some fiscal measures related to oil and natural-gas production may not constitute tax expenditures under an alternative baseline where severance taxes (or production taxes) vary with market conditions and production costs. We use for this and similar measures the annual amounts of revenue foregone as reported by the Louisiana Department of Revenue (various years).

We allocate this measure entirely to natural gas.

Sources: Louisiana Department of Revenue (various years).

Tag: USA_te_70

[Louisiana] Natural-Gas Severance-Tax Suspension for Inactive Wells (data for 1997-)

This tax provision was enacted in 1994 and can be claimed by any eligible gas producer exploiting older, mature fields featuring inactive wells. This severance-tax suspension benefits gas wells which have returned to service after being inactive for two or more years, or which have had 30 days or less of production for the past two years. Natural gas production shall be exempt from severance tax for a period of five years from the date of restart. Past iterations of this provision have limited the tax exemption to two years.

This provision would have expired in 1996; however it has been renewed several times by the legislature. We allocate this measure entirely to natural gas.

Sources: Louisiana Department of Revenue (various years).

Tag: USA_te_71

[Louisiana] Natural-Gas Severance-Tax Suspension for Deep Wells (data for 1997-)

This tax provision was introduced in 1994. It allows the suspension of all severance-tax liabilities for a period of 24 months, or until payout of well costs is achieved, for any gas well drilled with a true vertical depth greater than 15 000 feet and for which production started after 31 July 1994.

According to Louisiana's Department of Natural Resources, payout of well costs is defined as the cost of developing the well before production begins.

We allocate this measure entirely to natural gas.

Sources: Louisiana Department of Revenue (various years).

Tag: USA_te_72

[Louisiana] Natural-Gas Severance-Tax Suspension for New Discovery Wells (data for 1997-2005)

This tax provision was introduced in 1994 and is intended to encourage gas well exploration. It provides for a suspension of all severance-tax liabilities for a period of 24 months from the date of completion, or until payout of well cost is achieved, for any certified new natural-gas discovery well.

According to Louisiana's Department of Natural Resources, payout of well costs is defined as the cost of developing the well before production begins.

Wells must have been drilled after 30 September 1994, and completed before 30 September 1998. Since the new discovery well completion deadline was 30 September 2000, and since the suspension was for 24 months from the date of completion, no additional revenue losses are expected for this measure.

We allocate this measure entirely to natural gas.

Sources: Louisiana Department of Revenue (various years).

Tag: USA_te_73

[Louisiana] Reduced Severance-Tax on "Incapable" Oil-Well Gas (data for 1997-)

This measure dates back to 1958 and provides that a special reduced rate of severance tax be applied to natural gas produced from oil wells having 50 pounds or less of wellhead pressure per square inch, or produced by artificial methods, gas lift, or pumping. This measure is intended to encourage both small producers and major oil companies to continue producing from low-pressure oil wells.

We allocate this measure entirely to natural gas.

Sources: Louisiana Department of Revenue (various years).

Tag: USA_te_74

[Louisiana] Reduced Severance-Tax on "Incapable" Gas-Well Gas (data for 1997-)

This measure dates back to 1958 and provides that a special reduced rate of severance tax be applied to natural gas produced from gas wells that are incapable of producing an average of 250 000 cubic feet of gas per day. This rate is intended to encourage both small producers and major oil companies to continue producing from low-producing gas wells.

We allocate this measure entirely to natural gas.

Sources: Louisiana Department of Revenue (various years).

Tag: USA_te_75

[Louisiana] Oil Deduction Severance-Tax on Transportation Fees (data for 1997-)

This tax provision was introduced in 1974. It allows oil producers operating in Louisiana to deduct from their taxable profits charges for trucking, barging, and pipeline fees.

This measure gives all producers a deduction of at least USD 0.25 per barrel for transporting oil or condensate through their own facilities, and provides an incremental

deduction for some producers if their actual transport costs are lower. Producers using third-party transportation may deduct USD 0.25 per barrel or the actual amount charged.

We allocate this measure entirely to crude oil.

Sources: Louisiana Department of Revenue (various years).

Tag: USA_te_76

[Louisiana] Severance-Tax Suspension on Oil from Horizontal Wells (data for 1997-)

This tax provision was introduced by the State of Louisiana in 1994. It provides for a suspension of all severance-tax liabilities for a period of 24 months, or until payout of well costs is achieved, for any oil well drilled or recompleted horizontally for which production started after 31 July 1994.

According to Louisiana's Department of Natural Resources, payout of well costs is defined as the cost of developing the well before production begins.

We allocate this measure entirely to crude oil.

Sources: Louisiana Department of Revenue (various years).

Tag: USA_te_77

[Louisiana] Severance-Tax Suspension on Oil from Inactive Wells (data for 1997-)

This tax provision was enacted in 1994 and can be claimed by any eligible oil producer that exploits older, mature fields featuring inactive wells. This severance-tax suspension benefits oil wells which have returned to service after being inactive for two or more years, or which have had 30 days or less of production for the past two years. Oil production shall be exempt from severance tax for a period of five years from the date of restart. Past iterations of this provision have limited the tax exemption to two years.

This measure has been renewed multiple times, with the most recent certification deadline being 30 June 2010. We allocate this measure entirely to crude oil.

Sources: Louisiana Department of Revenue (various years).

Tag: USA_te_78

[Louisiana] Severance-Tax Suspension on Oil from Deep Wells (data for 1997-)

This tax provision was introduced in 1994. It provides for a suspension of all severance-tax liabilities for a period of 24 months, or until payout of well costs is achieved, for any oil well drilled with a true vertical depth greater than 15 000 feet and for which production started after 31 July 1994.

According to Louisiana's Department of Natural Resources, payout of well costs is defined as the cost of developing the well before production begins.

We allocate this measure entirely to crude oil.

Sources: Louisiana Department of Revenue (various years).

Tag: USA_te_79

[Louisiana] Severance-Tax Suspension on Oil from New Discovery Wells (data for 1997-2005)

This tax provision was introduced in 1994 and is intended to encourage oil-well exploration. It provides for a suspension of all severance-tax liabilities for a period of

24 months from the date of completion, or until payout of well costs is achieved, for any certified new oil discovery well.

According to Louisiana's Department of Natural Resources, payout of well costs is defined as the cost of developing the well before production begins.

Wells must have been drilled after 30 September 1994, and completed before 30 September 1998. Since the new discovery-well completion deadline was 30 September 2000, and since the suspension was for 24 months from the date of completion, no additional revenue losses for this measure are expected.

We allocate this measure entirely to crude oil.

Sources: Louisiana Department of Revenue (various years).

Tag: USA_te_80

[Louisiana] Severance-Tax Suspension on Oil from Tertiary Recovery (data for 1997-)

This measure was enacted in 1983 and is intended to support oil producers undertaking large-scale carbon-dioxide injection projects. It provides a severance-tax suspension until the project reaches payout for any crude-oil production from a qualified tertiary project approved by the Department of Natural Resources.

We allocate this measure entirely to crude oil.

Sources: Louisiana Department of Revenue (various years).

Tag: USA_te_81

[Louisiana] Reduced Severance-Tax Rate on "Incapable" Oil Wells (data for 1997-)

This measure dates back to 1948 and provides that a special reduced rate of severance tax be applied to oil produced from oil wells which are incapable of producing an average of more than 25 barrels of oil per day, and that produce at least 50% salt water. This tax provision is intended to encourage the continued production from low-volume wells to benefit oil producers with wells producing 10 to 25 barrels per day.

We allocate this measure entirely to crude oil.

Sources: Louisiana Department of Revenue (various years).

Tag: USA_te_82

[Louisiana] Reduced Severance-Tax Rate on Oil from Stripper Wells (data for 1997-)

This measure dates back to 1974 and provides that a special reduced rate of severance tax be applied to oil produced from oil wells which are incapable of producing an average of more than 10 barrels of oil per day. This tax provision is intended to encourage the continued production from stripper oil wells to benefit producers operating low-producing oil wells.

We allocate this measure entirely to crude oil.

Sources: Louisiana Department of Revenue (various years).

Tag: USA_te_83

[Louisiana] Sales-Tax Exemption for CO_2 Used in Tertiary Recovery (no data available)

This provision took effect in 2009 and exempts the use of anthropogenic CO_2 in oil extraction from Louisiana's sales tax. Carbon dioxide injection is a common technique used to enhance the recovery of hydrocarbons.

No disaggregated estimates are available for this particular measure. Estimates for state revenue losses are combined with other line items.

Source: Louisiana Department of Revenue (2011).

[Louisiana] Sales-Tax Exclusion for Installation of Board Roads in Oil-fields (no data available)

This measure excludes the installation of board roads to oil-field operations (wooden road surfaces to reach well sites) from Louisiana's sales tax.

No disaggregated estimates are available for this particular measure. Estimates for state revenue losses are combined with other line items by the state of Louisiana.

Sources: Louisiana Department of Revenue (various years).

[Louisiana] Sales-Tax Exclusion on Drilling Rigs (no data available)

This tax provision was introduced in 2007. It excludes repairs, renovations or conversions of drilling rigs used exclusively for the exploration or development of minerals in the outer continental shelf from Louisiana's sales tax.

No disaggregated estimates are available for this particular measure. Estimates for state revenue losses are combined with other line items by the state of Louisiana.

Sources: Louisiana Department of Revenue (various years).

[Louisiana] Sales-Tax Exemption for Repairs and Materials Used on Drilling Rigs (no data available)

This tax provision was introduced in 2002. It exempts from Louisiana's sales tax all materials, services, supplies and labour used to repair, renovate or convert drilling rigs, and that are employed exclusively for exploration or development of minerals in the outer continental shelf. This measure was suspended through 30 June 2009 before it was again reactivated.

No disaggregated estimates are available for this particular measure. Estimates for state revenue losses are combined with the "other exemptions" line item by the state of Louisiana.

Sources: Louisiana Department of Revenue (various years).

[Louisiana] Severance Tax Exclusion on Flared or Vented Natural Gas (data for 1997-)

This measure dates back to 1935 and excludes from Louisiana's severance tax all natural gas that is flared or vented into the atmosphere when testing, waiting on sales line, or when produced in non-commercial quantities.

We allocate this measure entirely to natural gas.

Sources: Louisiana Department of Revenue (various years).

Tag: USA_te_85

[Louisiana] Severance-Tax Exclusion for Natural Gas Used in Field Operations (data for 1997-)

This measure dates back to 1958 and excludes the use of natural gas as fuel to maintain the operation of a field from Louisiana's severance tax. This provision includes all gas used for heating, separating, producing, dehydrating, compressing, and pumping oil and gas. Venting or flaring are covered under a different tax provision (see "USA_te_85").

We allocate this measure entirely to natural gas.

Sources: Louisiana Department of Revenue (various years).

Tag: USA_te_86

Consumer Support Estimate

[Louisiana] Sales-Tax Exclusion for Energy Used in Manufacturing (data for 2006-2009)

This tax provision was introduced in 2006 and can be claimed by any eligible paper or wood-products company purchasing electric power or natural gas under a certain price threshold (USD 6.20 per MMBtu) for the period 1 July 2006 through 31 December 2008. Subsequent amendments in 2007 eliminated the price threshold, so that any purchase of electric power or natural gas by paper or wood-products manufacturers are now fully exempt from Louisiana's sales tax.

We allocate this measure entirely to natural gas.

Sources: Louisiana Department of Revenue (various years).

Tag: USA_te_84

[Louisiana] Sales-Tax Exclusion for Natural Gas Used in the Production of Iron (no data available)

This measure took effect in 1995 and excludes the use of natural gas by iron manufacturers from the state's sales tax.

No disaggregated estimates are available for this particular measure. Estimates for state revenue losses are combined with other line items.

Sources: Louisiana Department of Revenue (various years).

[Louisiana] Severance-Tax Exclusion for Carbon-Black Producers (data for 1997-)

This measure dates back to 1958 and can be claimed by producers and sellers of natural gas consumed in manufacturing carbon black (i.e. a residual produced from the incomplete combustion of certain heavy petroleum products).

We allocate this measure entirely to natural gas.

Sources: Louisiana Department of Revenue (various years).

Tag: USA_te_87

[Louisiana] Sales-Tax Exemption on Alternative Substances Used as Fuels (no data available)

This tax provision was introduced in 2002 and is scheduled to expire by June 2012. It provides for the exemption of alternative substances used as fuel from Louisiana's sales tax.

This measure concerns the following substances: petroleum coke, reclaimed or waste oil, tire-derived fuel, and non fossil fuels such as unblended biodiesel and landfill gas. This

definition excludes coal, lignite, refinery gas, oil and natural gas (or their refined products), and electricity.

No disaggregated estimates are available for this particular measure. Estimates for state revenue losses are combined with the "other exemptions" line item.

Sources: Louisiana Department of Revenue (various years).

[Louisiana] Sales-Tax Exemption for Certain Fuels Used for Farm Purposes (data for 1997-2009)

This tax provision was introduced in 1983 and provides for the exemption of diesel fuel, butane, propane, and other liquefied petroleum gases used for farm purposes from Louisiana's sales tax.

We allocate this measure entirely to diesel fuel since estimates for the use of LPG in the state of Louisiana are fairly small.

Sources: Louisiana Department of Revenue (various years).

Tag: USA_te_88

[Louisiana] Sales-Tax Exemption on Energy for Residential Use (no data available)

This measure was enacted in 2003 and exempts the use of electricity, natural gas, and water in the residential sector from Louisiana's sales tax.

No disaggregated estimates are available for this particular measure. Estimates for state revenue losses are combined with other tax provision under the line item "sales of electric power or energy to the consumer for residential use".

Sources: Louisiana Department of Revenue (various years).

[Louisiana] Fuel-Tax Exemption on Aviation Gasoline (data for 1997-)

This tax provision dates back to 1980 and exempts from Louisiana's petroleum-products tax all sales of aviation gasoline used in propelling aircrafts operating in the state of Louisiana.

We allocate this measure entirely to aviation gasoline.

Sources: Louisiana Department of Revenue (various years).

Tag: USA_te_89

[Louisiana] Fuel-Tax Exemption on Gasoline Sales to US Government (data for 1997-)

This measure dates back to 1944 and establishes a petroleum-products tax exemption on gasoline sales to the US Government and to the U.S. armed forces for propelling Navy or Coast Guard ships and aircrafts.

We allocate this measure entirely to gasoline.

Sources: Louisiana Department of Revenue (various years).

Tag: USA_te_90

[Louisiana] Sales-Tax Prohibition for Fuels Subject to the Motor-Fuels Tax (data for 1997-)

This measure took effect in 1990 and establishes that gasoline, diesel fuel, and gasohol subject to Louisiana's road-use tax be exempt from the state's sales tax.

We allocate the annual amounts reported in official documents to gasoline and diesel fuel on the basis of state-level data from the EIA's State Energy Data System for Louisiana's transport sector. Estimates for gasohol were deducted from the total reported amount since it is not considered a fossil fuel for the purpose of this study.

Sources: Louisiana Department of Revenue (various years), EIA [a].

Tag: USA_te_91

[Louisiana] Sales-Tax Exemption on Natural Gas for Non-Residential Use (data for 1998-2000 and 2003)

This measure dates back to 1948 and exempts from Louisiana's sales tax all purchases of natural gas used for non-residential purposes. This tax exemption was partially suspended during the period from 1 January 2006 to 30 June 2009 but again came into effect thereafter.

We allocate this measure entirely to natural gas.

Sources: Louisiana Department of Revenue (various years).

Tag: USA_te_92

Oklahoma

Producer Support Estimate

[Oklahoma] Excess of Percentage over Cost Depletion (data for 2007-)

This measure extends the corresponding federal provision for percentage depletion to Oklahoma's corporation tax system. It allows oil and natural-gas producers operating in Oklahoma to calculate deductions from their taxable income based on a percentage of the gross value of the resources being extracted. Under normal income-tax treatment, producers would recover investment costs over time as resources are depleted. In the case of percentage depletion, the sum of deductions can exceed the actual cost of investment. The State of Oklahoma limits the percentage depletion deduction to 50% of net income; this limitation applied only to major oil companies between 2001 and 2011. The Oklahoma percentage depletion rate for oil and gas is 22%, which is higher than the federal rate of 14%.

Because the release of tax-expenditure reports in Oklahoma follows a two-year cycle, annual estimates are not consistently available over the years. We therefore choose to repeat the same value in the years preceding the publication of a new report.

According to the Oklahoma Tax Commission, estimates for this measure only concern deductions under the personal-income tax and do not include those under the state's corporate-income tax because of certain data limitations.

We use state-level data from IPAA on the wellhead value of production to allocate the annual amounts reported in Oklahoma Tax Commission (various years) to oil and natural-gas extraction.

Sources: Oklahoma Tax Commission (various years), IPAA.

Tag: USA_te_93

[Oklahoma] Enhanced Oil Recovery Deduction (data for 2005-)

This tax provision took effect in 1988 and can be claimed by any eligible oil producer with an approved enhanced oil recovery operation. It provides an exemption from gross-production and petroleum-excise tax on incremental production for up to five years for secondary recovery projects, and up to ten years for tertiary recovery projects.

Because the release of tax-expenditure reports in Oklahoma follows a two-year cycle, annual estimates are not consistently available over the years. We therefore choose to repeat the same value in the years preceding the publication of a new report.

We use state-level data from IPAA on the wellhead value of production to allocate the annual amounts reported in Oklahoma Tax Commission (various years) to oil and natural-gas extraction.

Sources: Oklahoma Tax Commission (various years), IPAA.

Tag: USA_te_94

[Oklahoma] Gross-Production Tax Rebate for Horizontally Drilled Wells (data for 2004-)

This tax provision provides a rebate worth 6/7ths of the 7% gross-production tax paid on oil and gas produced from horizontally-drilled wells, and for which production commenced after 1 July 2002. Oil and gas producers are eligible for a tax rebate for a maximum duration of 48 months when production first starts or when project payback is achieved. Horizontally-drilled wells must have been completed prior to 1 July 2015.

We use state-level data from IPAA on the wellhead value of production to allocate the annual amounts reported in Oklahoma Tax Commission (various years) to oil and natural-gas extraction. An estimated breakdown by type of production was not available for FY2009. We thus use the share for each type of production in FY2008 to estimate individual rebates for FY2009. Estimates of the rebates for horizontally-drilled wells in FY2011 are not necessarily comparable with those for earlier years due to a change of method.

Sources: Oklahoma Tax Commission (various years), Oklahoma Policy Institute (2011), IPAA.

Tag: USA_te_95

[Oklahoma] Gross Production Tax Rebate for Re-established Production (data for 2004-)

This tax provision provides a rebate worth 6/7ths of the 7% gross-production tax paid on oil and gas produced from wells that have been inactive for at least one year, and for which production commenced after 1 July 1994. Oil and gas producers are eligible for a tax rebate for a maximum duration of 28 months starting when production is re-established. Re-established production wells must have been completed prior to 1 July 2014.

We use state-level data from IPAA on the wellhead value of production to allocate the annual amounts reported in Oklahoma Tax Commission (various years) to oil and natural-gas extraction. An estimated breakdown by type of production was not available for FY2009. We thus use the share for each type of production in FY2008 to estimate individual rebates for FY2009.

Sources: Oklahoma Tax Commission (various years), Oklahoma Policy Institute (2011), IPAA.

Tag: USA_te_96

[Oklahoma] Gross-Production Tax Rebate for Production Enhancement (data for 2004-)

This tax provision provides a rebate worth 6/7ths of the 7% gross-production tax paid on oil and gas incremental production from production-enhancement wells, and for which production commenced after 1 July 1994. Oil and gas producers are eligible for a tax rebate for a maximum duration of 28 months starting on the date of the first sale after project completion. Production-enhancement wells must have been completed prior to 1 July 2014.

We use state-level data from IPAA on the wellhead value of production to allocate the annual amounts reported in Oklahoma Tax Commission (various years) to oil and natural-gas extraction. An estimated breakdown by type of production was not available for FY2009. We thus use the share for each type of production in FY2008 to estimate individual rebates for FY2009.

Sources: Oklahoma Tax Commission (various years), Oklahoma Policy Institute (2011), IPAA.

Tag: USA_te_97

[Oklahoma] Gross-Production Tax Rebate for Deep and Ultra-Deep Wells (data for 2004-)

This item groups estimates for two distinct tax provisions that allow a rebate worth 6/7ths of the 7% gross-production tax paid on oil and gas incremental production from deep and ultra-deep wells.

The first provision concerns certain deep wells having a depth of 12 500 to 14 999 feet, and for which production must have started after 1 July 1997. Deep wells must have been completed prior to 1 July 2014 and a rebate is available for a period of up to 28 months from the date of first sales. The second provision concerns ultra-deep wells having a depth of 15 000 to 17 499 feet, and for which production must have started after 1 July 2002. Ultra-deep wells must have also been completed prior to 1 July 2015, and the corresponding rebate is then available for a period of 48 months from the date of first sales. In addition, those wells that are deeper than 17 500 feet attract rebates for a period of up to 60 months. Payments under these provisions are capped at USD 25 million annually, with excess claims reduced pro-rata. Starting from 1 July 2011, ultra-deep wells are now taxed at 4% and payments uncapped.

We use state-level data from IPAA on the wellhead value of production to allocate the annual amounts reported in Oklahoma Tax Commission (various years) to oil and natural-gas extraction. An estimated breakdown by type of production was not available for FY2009. We thus use the share for each type of production in FY2008 to estimate individual rebates for FY2009. Estimates of the rebates for deep and ultra-deep wells in FY2011 are not necessarily comparable with those for earlier years due to a change of method.

Sources: Oklahoma Tax Commission (various years), Oklahoma Policy Institute (2011), IPAA.

Tag: USA_te_98

[Oklahoma] Gross-Production Tax Rebate for New Discovery Wells (data for 2004-)

This tax provision provides a rebate worth 6/7ths of the 7% gross-production tax paid on oil and gas produced from new discovery wells for which production commenced after 1 July 1995. Oil and gas producers are eligible for a tax rebate for a maximum duration of 28 months from the date of first sales. New discovery wells must have been completed prior to 1 July 2014. Eligible oil wells must also be a mile distant from the nearest existing well (two miles in the case of natural-gas wells).

We use state-level data from IPAA on the wellhead value of production to allocate the annual amounts reported in Oklahoma Tax Commission (various years) to oil and natural-gas extraction. An estimated breakdown by type of production was not available for FY2009. We thus use the share for each type of production in FY2008 to estimate individual rebates for FY2009.

Sources: Oklahoma Tax Commission (various years), Oklahoma Policy Institute (2011), IPAA.

Tag: USA_te_99

[Oklahoma] Gross-Production Tax Rebate for 3D Seismic Wells (data for 2004-)

This tax provision provides a rebate worth 6/7ths of the 7% gross-production tax paid on oil and gas wells drilled using three-dimensional seismic technology, and for which production commenced after 1 July 2000. Oil and gas producers are eligible for a tax rebate with maximum duration of 28 months from the date of first sales. New discovery wells must have been completed prior to 1 July 2014.

We use state-level data from IPAA on the wellhead value of production to allocate the annual amounts reported in Oklahoma Tax Commission (various years) to oil and natural-gas extraction. An estimated breakdown by type of production was not available for FY2009. We thus use the share for each type of production in FY2008 to estimate individual rebates for FY2009.

Sources: Oklahoma Tax Commission (various years), Oklahoma Policy Institute (2011), IPAA.

Tag: USA_te_100

[Oklahoma] Gross Production Tax Rebate for Economically At-Risk Wells (data for 2004-)

This tax provision provides a rebate worth 6/7ths of the 7% gross-production tax paid on oil and gas produced from wells operating at a net loss or at a profit that is less than the total gross-production tax remitted during the previous calendar year.

We use state-level data from IPAA on the wellhead value of production to allocate the annual amounts reported in Oklahoma Tax Commission (various years) to oil and natural-gas extraction. An estimated breakdown by type of production was not available for FY2009. We thus use the share for each type of production in FY2008 to estimate individual rebates for FY2009.

Sources: Oklahoma Tax Commission (various years), Oklahoma Policy Institute (2011), IPAA.

Tag: USA_te_101

[Oklahoma] Gross-Production-Tax Exemption, O&G Owned by the Government (data for 2005-)

This measure consists of an exemption of royalty interests from Oklahoma's gross-production and petroleum-excise tax for oil and gas companies owned by government entities (cities, counties, school districts, Indian tribes, state or federal government).

Because the release of tax-expenditure reports in Oklahoma follows a two-year cycle, annual estimates are not consistently available over the years. We therefore choose to repeat the same value in the years preceding the publication of a new report.

We use state-level data from IPAA on the wellhead value of production to allocate the annual amounts reported in Oklahoma Tax Commission (various years) to oil and natural-gas extraction.

Sources: Oklahoma Tax Commission (various years), IPAA.

Tag: USA_te_102

[Oklahoma] Gas-Marketing Deduction Against Gross-Production Tax (data for 2009-)

This tax provision provides a deduction applicable against Oklahoma's gross-production and petroleum-excise tax for certain non-production-related costs associated with the marketing and transportation of natural gas.

Because the release of tax-expenditure reports in Oklahoma follows a two-year cycle, annual estimates are not consistently available over the years. We therefore choose to repeat the same value in the years preceding the publication of a new report.

Sources: Oklahoma Tax Commission (various years).

Tag: USA_te_103

[Oklahoma] Sales-Tax Exemption for Electricity Used in Enhanced Oil Recovery (data for 2005-)

This measure exempts all sales of electricity used in enhanced-recovery methods for extracting oil (including fracking) from Oklahoma's sales tax.

Because the release of tax-expenditure reports in Oklahoma follows a two-year cycle, annual estimates are not consistently available over the years. We therefore choose to repeat the same value in the years preceding the publication of a new report.

Sources: Oklahoma Tax Commission (various years).

Tag: USA_te_105

[Oklahoma] Cost of Complying with Sulphur Regulations (no data available)

This tax provision allows eligible refineries in Oklahoma to allocate all or a portion of the cost of complying with sulphur regulations (issued by the Environmental Protection Agency) to their respective owners rather than incurring the corresponding corporate taxes at the refinery level. The rules can thus enable owners to transfer deductions to taxpayers facing higher marginal tax rates.

No disaggregated estimates are available for this particular measure. Estimates for state revenue losses are combined with other line items.

Sources: Oklahoma Tax Commission (various years).

[Oklahoma] Full Expensing of Capital Investments in Qualified New Refinery Capacity (no data available)

This measure allows eligible investment costs in new, expanded, or upgraded refineries within the state of Oklahoma to be fully expensed in the year in which they are incurred.

No disaggregated estimates are available for this particular measure. Estimates for state revenue losses are combined with other line items.

Sources: Oklahoma Tax Commission (various years).

Consumer Support Estimate

[Oklahoma] Non-Refundable Tax-Credit for the Purchase of Oklahoma-Mined Coal (data for 2005-)

This measure took effect in 1993 and provides a non-refundable income-tax credit for purchasing Oklahoma mined-coal to be used in producing power, heat, or light for sale or for use in manufacturing within the state. The base credit amounts to USD 2.85 per short ton but an additional credit provides a further USD 2.15 per short ton.

A separate credit of USD 5 per short ton is available for Oklahoma's coal-mining industry in any month for which the average price of coal is less than USD 68 per short ton, excluding freight charges. Between FY2010 and FY2012, the earning of new credits was suspended though during this period older credits could still be claimed.

Both sides of this income-tax credit can be applied to the same short ton of coal, if it is mined and burned in Oklahoma. Credit is transferable and can be claimed for up to five years.

Because the release of tax-expenditure reports in Oklahoma follows a two-year cycle, annual estimates are not consistently available over the years. We therefore choose to repeat the same value in the years preceding the publication of a new report.

We allocate this measure entirely to hard coal.

Sources: Oklahoma Tax Commission (various years).

Tag: USA_te_104

[Oklahoma] Sales-Tax Exemption for Rail Cars Used for Transporting Coal (no data available)

This measure was introduced in 1991 and exempts the lease of rail-transportation cars used in transporting coal to plants that generate electricity in Oklahoma from the state's sales and use tax.

No estimates are available for this particular measure.

Sources: Oklahoma Tax Commission (various years).

[Oklahoma] Sales-Tax Exemption for Diesel Fuel Used by Commercial Watercraft (no data available)

This tax provision exempts the use of diesel fuel in commercial vessels, barges, and other commercial watercraft from Oklahoma's sales and use tax.

No estimates are available for this particular measure.

Sources: Oklahoma Tax Commission (various years).

[Oklahoma] Sales-Tax Exemption on Gas for Residential Use (data for 2005-)

This tax provision exempts sales of electricity and natural gas to the residential sector from Oklahoma's sales and use tax.

Because the release of tax-expenditure reports in Oklahoma follows a two-year cycle, annual estimates are not consistently available over the years. We therefore choose to repeat the same value in the years preceding the publication of a new report.

We allocate the annual amounts reported by the Oklahoma Tax Commission to electricity and natural gas on the basis of state-level data from the EIA's State Energy Data System for the residential sector. We only report, however, the amounts attributable to natural gas.

Sources: Oklahoma Tax Commission (various years), EIA [a].

Tag: USA_te_106

[Oklahoma] Motor Fuel-Tax Exemption on Gasoline, Diesel and Kerosene (no data available)

This tax provision was introduced in 1996 and exempts sales of gasoline, diesel fuel, and kerosene used by certain entities from Oklahoma's motor fuel taxes.

Users of gasoline, diesel fuel and kerosene benefitting from this fuel-tax exemption include government entities, cooperatives, Native American tribes, transporters of school children, agricultural producers, off-road diesel equipment, and diesel used for heating oil or by railroads.

No estimates are available for this particular measure.

Sources: Oklahoma Tax Commission (various years).

Pennsylvania

Producer Support Estimate

[Pennsylvania] Coal Waste Removal Tax Credit (no data available)

The Pennsylvania Tax Code provides for a tax credit to encourage investment in facilities used to produce fuels from coal and coal dust. The credit obtained by investing in eligible capital equipment can be used to offset the state's Sales and Use Tax, the Corporate Net Income Tax, and the Capital Stock Franchise Tax. The total cost of this tax credit is capped at USD 18 million per year.

No estimates are available for this particular measure. Pennsylvania's tax-expenditure reports mention, however, that it only benefits a very small number of corporate taxpayers.

Sources: Commonwealth of Pennsylvania (various years).

[Pennsylvania] Realty-Transfer Tax Exemption for Resource Leases (no data available)

Transfers of leases for the extraction of oil, natural gas, coal, and minerals in Pennsylvania are exempted from the state's realty transfer tax. The realty transfer tax is a stamp tax levied on all transactions of interests in real estate.

No estimates are available for this particular measure.

Sources: Commonwealth of Pennsylvania (various years).

Consumer Support Estimate

[Pennsylvania] Gross-Receipts Tax Exemption for Sales of Natural Gas (data for 2000)

Sales of natural gas by regulated companies in Pennsylvania are exempted from the gross receipts tax normally levied on most sales by utilities. This exemption was introduced in January 2000 to reduce the gas bills of Pennsylvania consumers.

Data are only available for FY2000.

Sources: Commonwealth of Pennsylvania (various years).

Tag: USA_te_35

[Pennsylvania] Alternative Energy Production Tax Credit (no data available)

This measure was introduced in 2008 to encourage investment in certain energy production projects in Pennsylvania. The amount of credit that can be claimed reaches up to 15% of the project's total development and construction costs, with a cap set at USD 1 million per taxpayer. Unclaimed credits can be carried forward or transferred to other taxpayers.

Although energy-production projects using clean coal and waste coal both qualify under this tax credit, data are not available on the annual amounts of revenue foregone broken down by energy source.

Sources: Commonwealth of Pennsylvania (various years).

[Pennsylvania] Sales-Tax Exemption for Coal (data for 2000-)

The purchase or use of coal in Pennsylvania is exempted from the sales and use tax normally levied on sales of most goods and services in that state. Pennsylvania's budget documents mention that this measure was at the time introduced to encourage the consumption of coal and sustain employment in the state's coal-mining industry. The measure benefits both households and companies.

We allocate this measure to hard coal given that Pennsylvania mainly produces anthracite and bituminous coal.

Sources: Commonwealth of Pennsylvania (various years).

Tag: USA_te_36

[Pennsylvania] Sales-Tax Exemption for Residential Utilities (data for 2000-)

This measure exempts sales of electricity, natural gas, LPG, and fuel oil to residential users in Pennsylvania from the sales and use tax normally levied on sales of most goods and services in that state. It is meant to ensure that households retain access to basic services or commodities.

We do not report the estimates for that measure that pertain to electricity. The estimates relating to fossil fuels are allocated to natural gas, LPG, and fuel oil on the basis of state-level data from the EIA's State Energy Data System for the residential sector.

Sources: Commonwealth of Pennsylvania (various years), EIA [a].

Tag: USA_te_37

[Pennsylvania] Fuel-Tax Exemption for Political Subdivisions (data for 2000-)

The use of motor fuels by political subdivisions (i.e. local governments) of the commonwealth of Pennsylvania is exempted from the state's liquid fuels and fuels tax usually levied on most sales of such products.

"Liquid fuels" are here understood to refer primarily to gasoline while "fuels" are considered equivalent to diesel fuel for the purpose of this measure.

Sources: Commonwealth of Pennsylvania (various years).

Tag: USA_te_38

[Pennsylvania] Fuel-Tax Exemption for Emergency Vehicles (data for 2000-)

The use of motor fuels by volunteer emergency vehicles in Pennsylvania is exempted from the state's liquid fuels and fuels tax usually levied on most sales of such products. Eligible vehicles include fire trucks and ambulances.[4]

"Liquid fuels" are here understood to refer primarily to gasoline while "fuels" are considered equivalent to diesel fuel for the purpose of this measure.

Sources: Commonwealth of Pennsylvania (various years).

Tag: USA_te_39

[Pennsylvania] Fuel-Tax Exemption for Agricultural Use (data for 2000-)

This measure exempts the use of motor fuels in farm machinery or equipment from the liquid fuels and fuels tax usually levied on most sales of such products in the state of Pennsylvania. Beneficiaries must be explicitly engaged in the production or harvesting of agricultural products.

"Liquid fuels" are here understood to refer primarily to gasoline while "fuels" are considered equivalent to diesel fuel for the purpose of this measure.

Under a baseline that considers the motor-fuels tax to be a substitute for a road-user fee, exempting motor fuel used on farms and off-highway from excise taxes does not constitute a tax expenditure. Under an alternative baseline where all uses of motor fuels are taxed in the same way, an exemption from the motor-fuel tax would, however, be considered a tax expenditure. This baseline implicitly assumes that the motor-fuel excise tax is specifically intended to raise general revenue by raising the price of the taxed item, or to reduce externalities associated with the consumption of the fuel, but not the externalities associated with the use of vehicles on highways, or the direct cost of funding the highway system. We adopt this approach here in measuring support for the consumption of fossil fuels in the farming sector in Pennsylvania.

Sources: Commonwealth of Pennsylvania (various years).

Tag: USA_te_40

[4] Some other uses of motor fuels also attract an exemption from the liquid fuels and fuels tax in Pennsylvania. The list of eligible users includes non-profit public schools, second-class county port authorities, electric cooperatives, truck refrigeration units, foreign diplomats, and bus drivers. While these are tax expenditures related to the consumption of fossil fuels, they are of relatively small significance with an annual fiscal cost below USD 1 million.

[Pennsylvania] Sales-Tax Exemption for Commercial Vessels (no data available)

This measure exempts the use of fuels in commercial vessels of 50 tonnes or more from Pennsylvania's sales and use tax.

Although the state of Pennsylvania reports annual estimates of the fiscal cost of the exemption as it applies to fuels, supplies, equipment, and ships, a detailed breakdown by item is not available. It is therefore not possible to isolate that part of the exemption that applies specifically to fossil fuels.

Sources: Commonwealth of Pennsylvania (various years).

[Pennsylvania] Franchise-Tax Exemption for Political Subdivisions (data for 2000-)

The oil-company franchise tax is an additional tax levied on sales of petroleum products in the state of Pennsylvania, on top of the existing liquid fuels and fuels tax. The various exemptions from the liquid fuels and fuels tax that are in place in Pennsylvania (see above) also apply to the oil-company franchise tax. We choose, however, to report both sets of exemptions separately given the differing characteristics of both taxes.

This measure exempts the use of motor fuels by political subdivisions (i.e. local governments) of the commonwealth of Pennsylvania from the state's oil-company franchise tax usually levied on most sales of such products.

We allocate the annual estimates for this measure to gasoline and diesel fuel on the basis of the breakdown for the corresponding the liquid fuels and fuels tax exemption (see "USA_te_38").

Sources: Commonwealth of Pennsylvania (various years).

Tag: USA_te_41

[Pennsylvania] Franchise-Tax Exemption for Emergency Vehicles (data for 2000-)

The oil-company franchise tax is an additional tax levied on sales of petroleum products in the state of Pennsylvania, on top of the existing liquid fuels and fuels tax. The various exemptions from the liquid fuels and fuels tax that are in place in Pennsylvania (see above) also apply to the oil-company franchise tax. We choose, however, to report both sets of exemptions separately given the differing characteristics of both taxes.

This measure exempts the use of motor fuels by volunteer emergency vehicles in Pennsylvania from the state's oil-company franchise tax usually levied on most sales of such products. Eligible vehicles include fire trucks and ambulances.

We allocate the annual estimates for this measure to gasoline and diesel fuel on the basis of the breakdown for the corresponding the liquid fuels and fuels tax exemption (see "USA_te_39").

Sources: Commonwealth of Pennsylvania (various years).

Tag: USA_te_42

[Pennsylvania] Franchise-Tax Exemption for Agricultural Use (data for 2000-)

The oil-company franchise tax is an additional tax levied on sales of petroleum products in the state of Pennsylvania, on top of the existing liquid fuels and fuels tax. The various exemptions from the liquid fuels and fuels tax that are in place in Pennsylvania (see above) also apply to the oil-company franchise tax. We choose, however, to report both sets of exemptions separately given the differing characteristics of both taxes.

This measure exempts the use of motor fuels in farm machinery or equipment in Pennsylvania from the state's oil-company franchise tax that is usually levied on most sales of such products. Beneficiaries must be explicitly engaged in the production or harvesting of agricultural products.

We allocate the annual estimates for this measure to gasoline and diesel fuel on the basis of the breakdown for the corresponding the liquid fuels and fuels tax exemption (see "USA_te_40").

Sources: Commonwealth of Pennsylvania (various years).

Tag: USA_te_43

[Pennsylvania] Franchise-Tax Exemption for Truck Refrigeration Units (data for 2000-)

The oil-company franchise tax is an additional tax levied on sales of petroleum products in the state of Pennsylvania, on top of the existing liquid fuels and fuels tax. The various exemptions from the liquid fuels and fuels tax that are in place in Pennsylvania (see above) also apply to the oil-company franchise tax. We choose, however, to report both sets of exemptions separately given the differing characteristics of both taxes.

This measure exempts the use of motor fuels in truck refrigeration units operating in Pennsylvania from the state's oil-company franchise tax that is usually levied on most sales of such products.

We allocate this measure entirely to undyed diesel fuel as suggested in Commonwealth of Pennsylvania (various years).

Sources: Commonwealth of Pennsylvania (various years).

Tag: USA_te_44

Texas

Producer Support Estimate

[Texas] Sales-Tax Exemption for Oil & Gas Equipment (data for 2001-)

The Texas Tax Code exempts certain purchases of equipment destined to oil and natural-gas exploration or production from the sales tax that is normally levied on most sales of goods and services in the state. Qualifying equipment consists of certain tangible assets used offshore (e.g. drill pipes). This exemption dates back to 1967.

We use state-level data from IPAA on the wellhead value of production to allocate the annual amounts reported in budget documents to oil and natural-gas extraction.

Sources: Texas Comptroller of Public Accounts (various years), IPAA.

Tag: USA_te_15

[Texas] Severance-Tax Exemptions for Crude Oil (data for 2001-)

Production of crude oil in the state of Texas is subject to two different taxes. The production tax applies a rate of 4.6% to the market value of oil produced in the state while the regulation tax amounts to 3/16 of a U.S. cent per barrel. Several exemptions are, however, granted depending on whether wells are high-cost or have been inactive for a few years, or whether producers use specific recovery methods like enhanced oil recovery. Marginal and orphaned wells are also eligible for tax relief.

Since data on individual exemptions are not available, and given that the Texas Comptroller of Public Accounts only provides estimates for a single year (see Texas

Comptroller of Public Accounts, 2008), we estimate the revenue foregone due to the various severance-tax exemptions by comparing actual revenues and revenues as calculated using official data on production and prices in the State of Texas. All exemptions are therefore added together, a method that does not allow making distinctions among them. Data on production come from the Railroad Commission of Texas—which is also the source used in official estimates—and data on taxable prices and tax revenues come from the Texas Comptroller of Public Accounts. This method yields estimates that are close to and consistent with those appearing in Texas Comptroller of Public Accounts (2008).

Some fiscal measures may not constitute tax expenditures under an alternative baseline where severance taxes vary with market conditions and production costs. We assume here that the baseline corresponds to the standard rates of severance tax that apply to oil and natural-gas production in Texas.

Sources: Texas Comptroller of Public Accounts (2008), Texas Comptroller of Public Accounts (2011), Railroad Commission of Texas (2012).

Tag: USA_te_17

[Texas] Severance-Tax Exemptions for Natural Gas (data for 2001-)

Production of natural gas in the state of Texas is taxed at a uniform rate of 7.5% applied to the market value of gas produced and kept within the state. Several exemptions are, however, granted depending on whether wells are high-cost or have been inactive for a few years. Marginal and orphaned wells are also eligible for tax relief.

Since data on individual exemptions are not available, and given that the Texas Comptroller of Public Accounts only provides estimates for a single year (see Texas Comptroller of Public Accounts, 2008), we estimate the revenue foregone due to the various severance-tax exemptions by comparing actual revenues and revenues as calculated using official data on production and prices in the State of Texas. All exemptions are therefore added together, a method that does not allow making distinctions among them. Data on production come from the Railroad Commission of Texas—which is also the source used in official estimates—and data on taxable prices and tax revenues come from the Texas Comptroller of Public Accounts. This method yields estimates that are close to and consistent with those appearing in Texas Comptroller of Public Accounts (2008).

Some fiscal measures may not constitute tax expenditures under an alternative baseline where severance taxes vary with market conditions and production costs. We assume here that the baseline corresponds to the standard rates of severance tax that apply to oil and natural-gas production in Texas.

Sources: Texas Comptroller of Public Accounts (2008), Texas Comptroller of Public Accounts (2011), Railroad Commission of Texas (2012).

Tag: USA_te_18

Consumer Support Estimate

[Texas] Sales-Tax Exemption for Natural Gas (data for 2001-)

The Texas Tax Code exempts certain uses of natural gas and electricity from the sales tax that normally applies to most sales of goods and services in the state. Qualifying uses include processing a product for sale; exploring for or producing and transporting a

material extracted from the earth; agricultural operations; gas and electricity used by an electric utility; gas and electricity used in residences; and gas and electricity used in timber operations.

Exempting intermediate inputs from sales tax is generally not considered a tax expenditure. In this case, the exemption serves to prevent the cascading of taxes on the final sale of the product considered. For that reason, we only consider here the part of the exemption that relates to the use of natural gas and electricity in the residential sector. However, the Texas Tax Code also provides that cities retain the right to tax the use of natural gas and electricity, which calls for additional caution in interpreting the value of this tax expenditure.

The Texas State report on tax expenditures (see Texas Comptroller of Public Accounts [various years]) contains a breakdown by sector but not by fuel (i.e. electricity and natural gas). For that reason, we allocate the annual amounts reported in this official publication to electricity and natural gas on the basis of state-level data from the EIA's State Energy Data System for the residential sector.

Sources: Texas Comptroller of Public Accounts (various years), EIA [a].

Tag: USA_te_14

[Texas] Gasoline-Tax Exemptions (data for 2001-)

The off-road use of gasoline in Texas is exempt from the motor-fuels tax that applies to on-road users in the state. Eligible users include the following sectors: federal government, public schools, maritime navigation, agriculture, construction, industry, and some commercial services.

Under a baseline that considers the motor-fuels tax to be a substitute for a road-user fee, exempting motor fuel used on farms and off-highway from excise taxes does not constitute a tax expenditure. Under an alternative baseline where all uses of motor fuels are taxed in the same way, an exemption from the motor-fuel tax would, however, be considered a tax expenditure. This baseline implicitly assumes that the motor-fuel excise tax is specifically intended to raise general revenue by raising the price of the taxed item, or to reduce externalities associated with the consumption of the fuel, but not the externalities associated with the use of vehicles on highways, or the direct cost of funding the highway system. We choose to adopt the latter approach here in measuring support for the consumption of fossil fuels in Texas.

Sources: Texas Comptroller of Public Accounts (various years).

Tag: USA_te_16

West Virginia

Producer Support Estimate

[West Virginia] Exclusion of Low-Volume Oil & Gas Wells (data for 2008-)

Oil and natural-gas wells located in West Virginia and producing less than one-half barrel per day or less than 5 000 cubic feet per day are exempted from the state's severance tax (5% of the gross value of severed oil and gas). A similar exemption also applies to natural gas provided for free by producers to surface land owners.

Some fiscal measures related to oil and natural-gas production may not constitute tax expenditures under an alternative baseline where severance taxes (or production taxes)

vary with market conditions and production costs. We include here the annual amounts of revenue foregone as reported by the West Virginia State Tax Department (various years).

Because the release of tax-expenditure reports in West Virginia follows a three-year cycle, annual estimates are not consistently available over the years. We therefore choose to repeat the same value in the years preceding the publication of a new report. We use state-level data from IPAA on the wellhead value of production to allocate the annual amounts reported in tax-expenditure documents to oil and natural-gas extraction.

Sources: West Virginia State Tax Department (various years), IPAA.

Tag: USA_te_25

[West Virginia] Coalbed Methane Exemption (data for 2008-)

The West Virginia Tax Code exempts coalbed-methane wells placed in service after 1 January 2000 from the state's severance tax (5% of the gross value of severed coalbed methane). This exemption can be used for five consecutive years and is meant to encourage the capture and use of coalbed methane. Subsequent legislation added a provision making the exemption only applicable to coalbed-methane wells placed in service before 1 January 2009. Qualifying wells can, however, continue to use their five-year exemption provided they were placed in service before 1 January 2009.

Because the release of tax-expenditure reports in West Virginia follows a three-year cycle, annual estimates are not consistently available over the years. We therefore choose to repeat the same value in the years preceding the publication of a new report.

Sources: West Virginia State Tax Department (various years).

Tag: USA_te_26

[West Virginia] Reduced Tax for Thin-Seamed Coal (data for 2008-)

Coal mines located in West Virginia that have thin seams—defined as seams having "less than forty-five inches [114 cm] in average thickness"—attract a reduced rate of severance tax. The severance tax in West Virginia is usually levied at a rate of 5% of the gross value of coal extracted, but this measure allows eligible producers to be taxed at a rate of 1% or 2% depending on the thickness of the seams. Only new underground mines may qualify for this reduction.

Some fiscal measures related to coal production may not constitute tax expenditures under an alternative baseline where severance taxes (or production taxes) vary with market conditions and production costs. We include here the annual amounts of revenue foregone as reported by the West Virginia State Tax Department (various years).

Because the release of tax-expenditure reports in West Virginia follows a three-year cycle, annual estimates are not consistently available over the years. We therefore choose to repeat the same value in the years preceding the publication of a new report. We allocate this measure entirely to bituminous coal.

Sources: West Virginia State Tax Department (various years).

Tag: USA_te_27

Consumer Support Estimate

[West Virginia] Non-Utility Sales of Natural Gas (data for 2008-)

This provision was introduced in 1987 by the state of West Virginia to exempt non-utility sales of natural gas from the local Business and Occupation Tax that normally applies in such cases.

Because the release of tax-expenditure reports in West Virginia follows a three-year cycle, annual estimates are not consistently available over the years. We therefore choose to repeat the same value in the years preceding the publication of a new report.

Sources: West Virginia State Tax Department (various years).

Tag: USA_te_22

[West Virginia] Industrial Expansion and Revitalization Credit (data for 2008-)

This measure provides eligible companies operating in West Virginia with a tax credit worth 10% of certain qualifying investment expenditures in both real and tangible property. The overall amount of credit that can be claimed in a given year cannot, however, exceed 50% of a taxpayer's total Business-and-Occupation-Tax liability. Although this credit was initially destined to industry in a broad sense, it has since been narrowed down to electricity producers only for those investments made starting in January 2003.

Since almost all of West Virginia's electricity comes from coal-fired power plants, this tax provision indirectly supports the consumption of coal. Official documents mention that the scheme is being predominantly used to invest in both power-plant modernisation and pollution-control facilities.

Because the release of tax-expenditure reports in West Virginia follows a three-year cycle, annual estimates are not consistently available over the years. We therefore choose to repeat the same value in the years preceding the publication of a new report. We allocate this measure entirely to bituminous coal.

Sources: West Virginia State Tax Department (various years).

Tag: USA_te_23

[West Virginia] Credit for Reducing Utility Charges (data for 2008-)

This tax provision is meant to compensate electricity and natural-gas utilities in West Virginia for the lower rates they are required to charge low-income households. Credits can be used against the full amount of the utilities' Business-and-Occupation-Tax liabilities.

Because the release of tax-expenditure reports in West Virginia follows a three-year cycle, annual estimates are not consistently available over the years. We therefore choose to repeat the same value in the years preceding the publication of a new report. We allocate the annual amounts reported in official documents to natural gas and bituminous coal (from which nearly all of West Virginia's electricity comes) on the basis of state-level data from the EIA's State Energy Data System for the residential sector.

Sources: West Virginia State Tax Department (various years),EIA [a].

Tag: USA_te_24

[West Virginia] Fuel-Tax Exemption for Aviation (data for 2008-)

The West Virginia Tax Code exempts purchases of aviation fuel from the state's excise tax usually levied on most sales of motor fuels. Under a baseline that considers the motor-fuels tax to be a substitute for a road-user fee, exempting motor fuel used off-highway from excise taxes does not constitute a tax expenditure. The state of West Virginia therefore justifies the exemption for aviation fuels on the grounds that it benefits off-highway users (see also "USA_te_28") and does not consider this provision to be a tax expenditure.

Under an alternative baseline where all uses of motor fuels are taxed in the same way, an exemption from the motor-fuel tax would, however, be considered a tax expenditure. This baseline implicitly assumes that the motor-fuel excise tax is specifically intended to raise general revenue by raising the price of the taxed item, or to reduce externalities associated with the consumption of the fuel, but not the externalities associated with the use of vehicles on highways, or the direct cost of funding the highway system. We adopt this approach here in measuring support for the consumption of fossil fuels in the aviation sector in West Virginia.

We allocate this measure entirely to kerosene-type jet fuel since sales volumes of aviation gasoline in West Virginia are fairly small. Because the release of tax-expenditure reports in West Virginia follows a three-year cycle, annual estimates are not consistently available over the years. We therefore choose to repeat the same value in the years preceding the publication of a new report.

Sources: West Virginia State Tax Department (various years).

Tag: USA_te_29

[West Virginia] Fuel-Tax Exemption for Dyed Diesel (data for 2008-)

As is generally the case in the United States, the West Virginia Tax Code exempts sales of dyed diesel from the state's excise tax. This exemption may not be considered a tax expenditure depending on the baseline used to measure it (see "USA_te_29" and "USA_te_28" for a discussion of tax baselines).

Because the release of tax-expenditure reports in West Virginia follows a three-year cycle, annual estimates are not consistently available over the years. We therefore choose to repeat the same value in the years preceding the publication of a new report.

Sources: West Virginia State Tax Department (various years).

Tag: USA_te_30

[West Virginia] Fuel-Tax Exemption for Propane (data for 2008-)

The West Virginia Tax Code exempts purchases of propane from the state's excise tax normally levied on most sales of motor fuels. This exemption may not be considered a tax expenditure depending on the baseline used to measure it (see "USA_te_29" and "USA_te_28" for a discussion of tax baselines).

Because the release of tax-expenditure reports in West Virginia follows a three-year cycle, annual estimates are not consistently available over the years. We therefore choose to repeat the same value in the years preceding the publication of a new report.

Sources: West Virginia State Tax Department (various years).

Tag: USA_te_31

[West Virginia] Fuel-Tax Exemption for County Boards of Education (data for 2008-)

The West Virginia Tax Code exempts purchases of motor fuels by county boards of education from the state's excise tax normally levied on most sales of such fuels. This provision is meant to reduce the costs of operating school buses.

We allocate this measure entirely to diesel fuel. Because the release of tax-expenditure reports in West Virginia follows a three-year cycle, annual estimates are not consistently available over the years. We therefore choose to repeat the same value in the years preceding the publication of a new report.

Sources: West Virginia State Tax Department (various years).

Tag: USA_te_32

[West Virginia] Fuel-Tax Exemption for Certain Public Administrations (data for 2008-)

The West Virginia Tax Code exempts certain public administrations from the state's excise tax normally levied on most sales of motor fuels. Eligible administrations include municipalities, urban mass-transit authorities, county governments, and fire departments.

Documentation on fuel use by local administrations suggests that the use of gasoline may be twice that of diesel. Vehicles used by police forces, and smaller fire and rescue vehicles, tend to run on gasoline, whereas larger fire trucks, garbage trucks, heavy-duty road-working equipment and snow plows tend to have diesel-powered engines. Consequently, we use this ratio (2:1) to split the reported amounts between those two types of motor fuel.

Because the release of tax-expenditure reports in West Virginia follows a three-year cycle, annual estimates are not consistently available over the years. We therefore choose to repeat the same value in the years preceding the publication of a new report.

Sources: West Virginia State Tax Department (various years).

Tag: USA_te_33

[West Virginia] Fuel-Tax Exemption for Certain Off-Highway Uses (data for 2008-)

The state of West Virginia exempts certain off-highway uses of motor fuel from the state's excise tax normally levied on most sales of diesel and gasoline. Eligible uses include stationary engines, heating, commercial watercrafts, railroad locomotives, and use of fuel as a solvent or lubricant.

This exemption may not be considered a tax expenditure depending on the baseline used to measure it (see "USA_te_29" and "USA_te_28" for a discussion of tax baselines).

We allocate this measure entirely to diesel fuel. Because the release of tax-expenditure reports in West Virginia follows a three-year cycle, annual estimates are not consistently available over the years. We therefore choose to repeat the same value in the years preceding the publication of a new report.

Sources: West Virginia State Tax Department (various years).

Tag: USA_te_34

Wyoming

Producer Support Estimate

[Wyoming] Severance-Tax Reduction for Stripper Wells (no data available)

Oil produced from stripper wells in Wyoming is exempt from part of the state's severance tax, thereby reducing the total rate of tax from 6% to 4%. Stripper wells in Wyoming are low-volume, marginal wells producing less than 10 or 15 barrels a day depending on the average price of oil.

Some fiscal measures related to oil and natural-gas production may not constitute tax expenditures under an alternative baseline where severance taxes (or production taxes) vary with market conditions and production costs.

No estimates are available for this particular measure.

Sources: Wyoming Statutes 39-14-205, IOGCC (2007).

[Wyoming] Severance-Tax Reduction for Tertiary Recovery (no data available)

Wells drilled between 1 April 2003 and 31 March 2008 in Wyoming and using tertiary recovery methods are exempt from part of the state's severance tax, thereby reducing the total rate of tax from 6% to 4%. This measure applies for a five-year period only starting on the day tertiary recovery is first used. The exemption phases out, however, when the average price of oil received by producers in a given month equals or exceeds USD 27.5 per barrel.

Some fiscal measures related to oil and natural-gas production may not constitute tax expenditures under an alternative baseline where severance taxes (or production taxes) vary with market conditions and production costs.

No estimates are available for this particular measure. Given high oil prices, current tax expenditures under this provision are likely to be zero. Further, the eligibility period for wells completed in 2008 is nearing an end. This indicates that without legislative action, the subsidy is unlikely to trigger significant revenue losses in future years regardless of what happens to oil prices.

Sources: Wyoming Statutes 39-14-205, IOGCC (2007).

[Wyoming] 24-Month Severance-Tax Reduction (no data available)

Crude oil or natural gas produced from wells drilled between 1 July 1993 and 31 March 2003 in Wyoming was exempt from part of the state's severance tax, thereby reducing the total rate of tax from 6% to 2%. This reduction was only applicable for the first 24 months of production and for up to 60 barrels of oil per day (360 thousand cubic feet per day for natural gas). It would also phase out whenever the average price received by producers in the last six months reached at least USD 22 per barrel of oil (USD 2.75 per thousand cubic feet for natural gas).

Some fiscal measures related to oil and natural-gas production may not constitute tax expenditures under an alternative baseline where severance taxes (or production taxes) vary with market conditions and production costs.

No estimates are available for this particular measure.

Sources: Wyoming Statutes 39-14-205.

[Wyoming] Severance-Tax Reduction for Workover Wells (no data available)

Incremental crude oil or natural gas produced from workover (or recompletion) wells drilled between 1 January 1997 and 31 March 2001 in Wyoming was exempt from part of the state's severance tax. This provision served to reduce the total rate of severance tax from 6% to 2% and was only applicable for the first 24 months of production. Workover wells are wells that have undergone substantive intervention to pull and replace a completion. This type of intervention is sometimes necessary when, for example, corrosion damages the production tubing.

Some fiscal measures related to oil and natural-gas production may not constitute tax expenditures under an alternative baseline where severance taxes (or production taxes) vary with market conditions and production costs.

No estimates are available for this particular measure.

Sources: Wyoming Statutes 39-14-205.

[Wyoming] Severance-Tax Reduction for Idle Wells (no data available)

Crude oil produced from previously idle wells in Wyoming is exempt from part of the state's severance tax. This provision serves to reduce the total rate of severance tax from 6% to 1.5% and is only applicable for up to five years. The reduction also phases out whenever the average price received by producers in the last six months reaches at least USD 25 per barrel of oil. For the purpose of this measure, idle wells are wells that have been previously shut in and that have not produced for at least two consecutive years prior to 1 January 1995.

Some fiscal measures related to oil and natural-gas production may not constitute tax expenditures under an alternative baseline where severance taxes (or production taxes) vary with market conditions and production costs.

No estimates are available for this particular measure. At current oil prices, the revenue loss from this provision is expected to be zero.

Sources: Wyoming Statutes 39-14-205, IOGCC (2007).

[Wyoming] Severance-Tax Reduction for Underground Coal (no data available)

Coal produced from underground mines in Wyoming attracts a lower rate of severance tax (3.75%) than surface-mined coal (7%).

Some fiscal measures related to coal production may not constitute tax expenditures under an alternative baseline where severance taxes (or production taxes) vary with market conditions and production costs.

No estimates are available for this particular measure.

Sources: Wyoming Statutes 39-14-104.

[Wyoming] Severance-Tax Exemption for Coal Used as Process Energy (no data available)

Coal used as process energy in the treatment and processing of coal from the same mine is exempt from Wyoming's severance tax.

No estimates are available for this particular measure.

Sources: Wyoming Statutes 39-14-105.

[Wyoming] Severance-Tax Exemption for Flared Natural Gas (no data available)

Natural gas that is vented, flared, reinjected or consumed as process energy in the stimulation, treatment, transportation, and production of natural gas from the same well is exempt from Wyoming's severance tax.

As with similar exemptions for coal, the on-site use (other than reinjection) or flaring of a fossil-fuel resource is severing that resource from the state forever and does represent foregone revenue to the state.

No estimates are available for this particular measure.

Sources: Wyoming Statutes 39-14-205.

[Wyoming] Property-Tax Exemption for Underground Coal-Mining Equipment (no data available)

Equipment used in underground coal mining in Wyoming is exempt from the state's property tax whereas the rate on surface-mining equipment is 11.5%.

No estimates are available for this particular measure.

Sources: Wyoming Department of Revenue.

[Wyoming] Sales-Tax Exemption for Transporting Drilling Rigs (no data available)

The supply of transportation services in relation to drilling rigs in Wyoming is exempt from the sales tax that is normally levied on most sales of goods and services in the state. Eligible services include the loading, unloading and assembling of drilling rigs.

No estimates are available for this particular measure.

Sources: Wyoming Statutes 39-15-105.

[Wyoming] Sales-Tax Exemption for Certain Well Services (no data available)

The supply of certain professional services in relation to oil and natural-gas extraction activities in Wyoming is exempt from the sales tax that is normally levied on most sales of goods and services in the state. Eligible services include technical and support services such as seismographic and geophysical surveying and engineering services.

No estimates are available for this particular measure.

Sources: Wyoming Statutes 39-15-105.

[Wyoming] Sales-Tax Exemption for Coal-Gasification Equipment (no data available)

Purchases of equipment used to construct a new coal-gasification or coal-liquefaction facility in Wyoming are exempt from the sales tax that is normally levied on most sales of goods and services in the state. Eligible equipment must be explicitly "used in a project to make it operational."

No estimates are available for this particular measure.

Sources: Wyoming Statutes 39-15-105.

[Wyoming] Sales-Tax Exemption for CO_2 Used in Tertiary Production (no data available)

Purchases of CO_2 and other gases used in tertiary production in Wyoming are exempt from the sales tax that is normally levied on most sales of goods and services in the state.

Tertiary production is an extraction method that enhances oil recovery by injecting gases (e.g. CO_2) in deposits to increase the amount of oil that can be extracted.

No estimates are available for this particular measure.

Sources: Wyoming Statutes 39-15-105.

[Wyoming] Severance-Tax Credit for Certain R&D Projects (no data available)

This measure allows natural-gas producers operating in Wyoming to obtain a credit applicable against their severance-tax liability for as much as 50% of the cost of investment in certain research projects. Eligible projects are those that have been certified by the state's gas research review committee.

No estimates are available for this particular measure.

Sources: Wyoming Statutes 39-14-205.

Consumer Support Estimate

[Wyoming] Fuel-Tax Reduction for Aviation Gasoline (no data available)

The use of gasoline in an aircraft in Wyoming is subject to a lower rate of fuel tax (USD 0.04 per gallon) than that applied to road users in the state (USD 0.14 per gallon).

Under a baseline that considers the motor-fuels tax to be a substitute for a road-user fee, exempting motor fuel used off-highway from excise taxes does not constitute a tax expenditure. Under an alternative baseline where all uses of motor fuels are taxed in the same way, an exemption from the motor-fuel tax would, however, be considered a tax expenditure. This baseline implicitly assumes that the motor-fuel excise tax is specifically intended to raise general revenue by raising the price of the taxed item, or to reduce externalities associated with the consumption of the fuel, but not the externalities associated with the use of vehicles on highways, or the direct cost of funding the highway system. We adopt this approach here in measuring support for the consumption of fossil fuels in the aviation sector in Wyoming.

No estimates are available for this particular measure.

Sources: Wyoming Statutes 39-17-104.

[Wyoming] Sales-Tax Exemption for Energy Sold to Government (no data available)

Purchases of energy products by certain entities in Wyoming are exempt from the sales tax that is normally levied on most sales of goods and services in the state. Eligible entities include the state of Wyoming or its political subdivisions and religious or charitable organizations.

No estimates are available for this particular measure.

Sources: Wyoming Statutes 39-15-105.

General Services Support Estimate

[Wyoming] Advanced Conversion Technology Task Force (data for 2007-)

The Advanced Conversion Technology Task Force (formerly the Clean Coal Task Force) was created in 2007 by the state of Wyoming to encourage research into and demonstration of coal-related technologies such as clean coal, coal gasification, and coal

liquefaction. Funding is provided directly by the state in the form of appropriations that can only be disbursed to the extent that non-state matching funds are available.

We only report here the annual amounts of state funds effectively disbursed by the Task Force. The programme is allocated to the GSSE since it benefits Wyoming's coal industry as a whole and does not increase current production or consumption of fossil fuels. We allocate it entirely to sub-bituminous coal given that the state of Wyoming mainly produces that particular type of coal.

Sources: University of Wyoming.

Tag: USA_dt_12

[Wyoming] Enhanced Oil Recovery Commission (data for 2005-)

The Enhanced Oil Recovery Commission was set up in 2004 by the Wyoming State Legislature to encourage the adoption of improved oil-recovery technologies by producers operating in the state. The Commission also established a dedicated research programme at the Institute for Energy Research and Enhanced Oil Recovery of the University of Wyoming to investigate issues related to CO_2 capture and reservoir fluids.

This item is allocated to the GSSE since it benefits Wyoming's oil industry as a whole and does not necessarily increase current production or consumption of fossil fuels.

Sources: Wyoming State Government (various years).

Tag: USA_dt_13

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Table 35.1. Summary of fossil-fuel support to coal – United States

(Millions of USD, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Producer support								
Support to unit returns								
Alternative fuels production credit	Federal	2320	2980	2920	590	60	170	10
Support for land and natural resources								
Capital-gains treatment of royalties on coal	Federal	90	160	180	110	70	50	60
Coal transportation expense	KY	9	18	18	24	24	21	21
Thin-seam tax credit	KY	0.1	0.4	0.4	0.6	0.6	2	2
Reduced tax for thin-seamed coal	WV	..	..	..	37	37	37	75
Support for capital formation								
Partial expensing for advanced mine-safety equipment	Federal	n.a.	0	10	20	0	0	n.a.
Excess of percentage over cost depletion	Federal	255	331	336	392	134	379	460
Excess of percentage over cost depletion	KY	5	0.9	0.9	4	4	3	3
Sales-tax incentive for alternative fuel or gasification facilities	KY	n.a.	n.a.	n.a.	0.000	12	0	0
Consumer support								
Credit for investment in clean-coal facilities	Federal	n.a.	0	30	30	180	240	370
Amortisation of certain pollution-control facilities	Federal	n.a.	0	30	100	100	100	200
Sales-tax exemption for energy used in manufacturing	CO	0.8	0.9	0.7	0.8	0.4	0.2	0
Sales-tax exemption for energy and energy-producing fuels	KY	9	3	4	4	4	5	5
Coal incentive tax credit	KY	0.9	0.1	0.1	<0.1	<0.1	0	0
Nonrefundable tax credit for the purchase of Oklahoma-mined coal	OK	0.1	0.1	<0.1	<0.1	4	4	4
Sales-tax exemption for coal	PA	95	195	204	130	127	118	120
Industrial expansion and revitalization credit	WV	..	..	..	45	45	45	55
Credit for reducing utility charges	WV	..	..	..	2	3	3	3
General Services Support								
Fossil energy R&D	Federal	454	494	447	683	1004	3805	576
Railroad improvement tax credit	KY	n.a.	n.a.	n.a.	n.a.	n.a.	0	3
Mine safety and licensing	KY	..	9	10	10	13	12	14
Coal academy mining workforce development	KY	n.a.	3	3	3	3	3	3
Department for Energy Development and Independence	KY	n.a.	2	2	6	1	1	1
Advanced Conversion Technology Task Force	WY	n.a.	n.a.	2	3	12	7	9

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances and on other data as specified in the chapter for the United States.

Table 35.2. Summary of fossil-fuel support to petroleum – United States

(Millions of USD, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Producer support								
Support to unit returns								
Development credit for certain producers	AK	n.a.	n.a.	33	19	31	35	35
Oil-deduction severance tax on transportation fees	LA	4	3	4	5	3	2	2
Income support								
Exception from passive loss limitation	Federal	17	13	12	4	8	12	12
Support for intermediate inputs								
Sales-tax exemption for electricity used in enhanced oil recovery	OK	2	2	2	2	2	2	2
Support for land and natural resources								
Severance-tax suspension on oil from deep wells	LA	3	4	6	12	7	10	10
Severance-tax suspension on oil from horizontal wells	LA	2	0.6	0.1	<0.1	0.6	0.3	0.4
Severance-tax suspension on oil from inactive wells	LA	16	10	16	35	56	42	65
Severance-tax suspension on oil from tertiary recovery	LA	<0.1	<0.1	0.1	0.1	3	7	20
Reduced severance-tax rate on oil from stripper wells	LA	32	25	27	37	35	27	39
Reduced severance-tax rate on incapable oil wells	LA	12	9	11	13	12	9	13
Gross-production tax rebate for new-discovery wells	OK	0.4	0.7	<0.1	<0.1	<0.1	<0.1	<0.1
Gross-production tax rebate for 3D seismic wells	OK	3	5	1	<0.1	<0.1	<0.1	0.4
Gross-production tax rebate for economically-at-risk wells	OK	<0.1	<0.1	<0.1	0.2	0.3	0.5	2
Gross-production tax rebate for deep and ultra-deep wells	OK	16	13	4	6	8	9	8
Enhanced oil recovery deduction	OK	0.8	0.8	0.7	0.7	0.7	0.7	0.7
Gross-production tax rebate for horizontally-drilled wells	OK	1	5	7	11	15	31	40
Gross-production tax exemption for O&G owned by government	OK	2	2	2	2	2	2	2
Gross-production tax rebate for re-established production	OK	0.8	2	0.6	0.1	0.1	<0.1	<0.1
Gross-production tax rebate for production enhancement	OK	3	4	0.6	<0.1	<0.1	<0.1	1
Severance-tax exemptions for crude oil	TX	62	98	80	140	68	186	279
Exclusion of low-volume oil and gas wells	WV	..	..	..	0.6	0.7	0.7	0.4
Support for capital formation								
Temporary expensing of equipment for refining	Federal	n.a.	10	30	350	770	760	670
Excess of percentage over cost depletion	Federal	145	182	187	211	85	247	294
Aid to small refiners for EPA capital costs	Federal	10	10	10	30	10	0	n.a.
Enhanced oil recovery credit	Federal	300	0	0	0	0	0	0
Expensing of exploration and development costs	Federal	168	288	219	659	674	164	201

Table 35.2. Summary of fossil-fuel support to petroleum – United States (*continued*)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Qualified capital expenditure credit	AK	n.a.	n.a.	293	346	536	587	587
Alternative credit for exploration	AK	..	..	83	16	38	12	12
Percentage depletion of mineral and other resources	CA	3	18	23	26	19	19	21
Excess of percentage over cost depletion	LA	6	6	7	7	7	7	7
Excess of percentage over cost depletion	OK	..	..	3	3	6	6	6
Sales-tax exemption for oil and gas equipment	TX	13	13	25	25	59	58	69
Support for knowledge creation								
Amortisation of geological expenditure	Federal	n.a.	4	21	8	16	62	48
Consumer support								
Low-income home energy assistance program	Federal	172	210	165	172	337	337	336
Power cost equalization	AK	15	21	25	28	37	31	32
Alaska affordable heating program	AK	n.a.	n.a.	n.a.	n.a.	0.4	0.5	0.3
Small municipality energy assistance program	AK	6	6	48	49	n.a.	n.a.	n.a.
Fuel-tax exemption for aircraft jet fuel	CA	76	78	74	65	62	69	70
Sales-tax exemption for water common carriers	CA	31	31	36	42	54	58	41
Fuel-tax exemption for schools	CA	13	13	14	12	11	13	13
Sales-tax exemption for diesel used in farming	CA	39	41	56	48	43	46	33
Sales-tax exemption for gasoline and special fuel	CO	152	172	217	245	173	206	206
Sales-tax exemption for fuel used on farms	CO	3	3	4	5	3	4	4
Sales-tax exemption for residential use of fuel	CO	5	4	5	7	5	6	6
Sales-tax exemption for energy used in manufacturing	CO	8	10	10	10	7	1	0
Sales-tax reduction for jet fuel	KY	20	23	24	36	38	20	25
Special-fuels tax exemption for agricultural use	KY	4	4	4	6	6	6	6
Special-fuels tax exemption for residential heating	KY	1	1	1	1	1	1	1
Special-fuels tax exemption for railroad companies	KY	13	15	15	22	24	22	24
Special-fuels tax exemption for non-highway use	KY	28	29	31	34	37	37	38
Sales-tax exemption for fuel used in farming	KY	7	8	8	8	8	16	17
Sales-tax exemption for energy and energy-producing fuels	KY	43	16	16	18	20	20	20
Gasoline tax exemptions	KY	2	1	2	1	2	1	1
Other special-fuels tax exemptions	KY	3	1	2	1	1	1	1
Fuel-tax exemption on gasoline sales to US Government	LA	2	2	2	0.8	0.3	0.3	0.3
Sales-tax prohibition for fuels subject to the motor-fuels tax	LA	214	264	315	320	349	304	357
Fuel-tax exemption on aviation gasoline	LA	1	1	1	0.3	0.2	0.2	0.1
Sales-tax exemption for certain fuels used for farm purposes	LA	11	11	11	11	12	12	12
Franchise-tax exemption for political subdivisions	PA	20	19	19	20	20	20	20

Table 35.2. Summary of fossil-fuel support to petroleum – United States (*continued*)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Franchise-tax exemption for truck-refrigeration units	PA	1	1	2	1	1	2	2
Fuel-tax exemption for political subdivisions	PA	10	10	10	10	10	10	10
Franchise-tax exemption for agricultural use	PA	2	3	3	2	2	2	2
Fuel-tax exemption for emergency vehicles	PA	3	3	3	3	3	3	3
Fuel-tax exemption for agricultural use	PA	1	2	2	1	1	1	1
Sales-tax exemption for residential utilities	PA	131	87	86	100	80	117	123
Franchise-tax exemption for emergency vehicles	PA	6	5	5	6	6	7	7
Gasoline tax exemptions	TX	75	76	76	78	78	79	63
Fuel-tax exemption for certain off-highway uses	WV	..	..	..	85	85	85	81
Fuel-tax exemption for certain public administrations	WV	..	..	..	2	2	2	2
Fuel-tax exemption for propane	WV	..	..	..	13	13	13	10
Fuel-tax exemption for dyed diesel	WV	..	..	..	69	69	69	69
Fuel-tax exemption for aviation	WV	..	..	..	2	2	2	2
Fuel-tax exemption for county Boards of education	WV	..	..	..	14	14	14	12
Fuel-tax exemptions for farmers	both	1135	1146	1114	1125	931	1016	1016
General services support								
Northeast home heating oil reserve	Federal	9	9	7	15	12	13	-139
Fossil energy R&D	Federal	47	41	7	10	6	17	0.6
Strategic petroleum reserve	Federal	1087	786	1081	1054	1057	1047	1047
Enhanced oil recovery commission	WY	1	1	3	3	3	3	3

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances and on other data as specified in the chapter for the United States.

Table 35.3. Summary of fossil-fuel support to natural gas – United States

(Millions of USD, nominal)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Producer support								
Support to unit returns								
Alternative fuels production credit	Federal	0	0	0	0	0	0	0
Development credit for certain producers	AK	n.a.	n.a.	5	2	3	3	3
Income support								
Exception from passive loss limitation	Federal	23	17	18	6	12	18	18
Support for land and natural resources								
Natural-gas severance tax suspension for deep wells	LA	15	0.4	8	8	7	8	3
Reduced severance tax on incapable gas-well gas	LA	18	28	40	34	41	56	29
Severance-tax exclusion for carbon-black producers	LA	0.2	0.1	<0.1	0.9	1	2	1
Severance-tax exclusion on flared or vented natural gas	LA	0.4	0.5	1	0.8	1	1	0.6
Severance-tax exclusion for natural gas used in field operations	LA	5	5	9	8	14	13	9
Natural-gas severance tax suspension for inactive wells	LA	3	2	5	5	7	6	3
Reduced severance tax on incapable oil-well gas	LA	1	1	2	2	0.8	2	1
Natural-gas severance-tax suspension for horizontal wells	LA	0.6	0.1	0.3	0.9	37	239	235
Gross-production tax rebate for 3D seismic wells	OK	7	13	3	0.1	0.1	<0.1	0.7
Gross-production tax rebate for horizontally-drilled wells	OK	3	13	19	25	26	53	69
Gross-production tax rebate for production enhancement	OK	8	10	1	0.1	0.1	2	2
Gross-production tax rebate for new-discovery wells	OK	1	2	0.2	<0.1	<0.1	<0.1	<0.1
Gross-production tax exemption for O&G owned by government	OK	7	7	5	5	4	4	4
Enhanced oil recovery deduction	OK	2	2	2	2	1	1	1
Gross-production tax rebate for economically-at-risk wells	OK	<0.1	0.1	0.2	0.5	0.5	0.9	4
Gas-marketing deduction against gross-production tax	OK	n.a.	n.a.	n.a.	n.a.	30	30	30
Gross-production tax rebate for reestablished production	OK	2	6	2	0.2	0.2	0.1	<0.1
Gross-production tax rebate for deep and ultra-deep wells	OK	43	34	9	14	15	16	13
Severance-tax exemptions for natural gas	TX	501	636	724	920	1134	1249	1139
Exclusion of low-volume oil & gas wells	WV	..	..	..	7	7	7	4
Coalbed methane exemption	WV	..	..	..	4	4	4	1

Table 35.3. Summary of fossil-fuel support to natural gas – United States (*continued*)

Support element	Jurisdiction	2005	2006	2007	2008	2009	2010	2011p
Support for capital formation								
Expensing of exploration and development costs	Federal	222	392	311	991	966	236	299
Accelerated depreciation of distribution pipelines	Federal	n.a.	20	60	80	80	120	120
Excess of percentage over cost depletion	Federal	190	247	266	317	121	354	436
Qualified capital expenditure credit	AK	n.a.	n.a.	43	45	49	53	53
Alternative credit for exploration	AK	..	..	12	2	3	1	1
Alaska gasline inducement act	AK	n.a.	n.a.	n.a.	<0.1	25	46	74
Percentage depletion of mineral and other resources	CA	0.5	3	3	3	2	2	2
Excess of percentage over cost depletion	LA	12	12	11	11	11	11	11
Excess of percentage over cost depletion	OK	..	..	8	8	10	10	10
Sales-tax exemption for oil & gas equipment	TX	19	19	40	39	66	64	78
Support for knowledge creation								
Amortisation of geological expenditure	Federal	n.a.	6	29	12	24	88	72
Consumer support								
Low-income home energy assistance program	Federal	672	879	723	847	1689	1689	1685
Alaska affordable heating program	AK	n.a.	n.a.	n.a.	n.a.	0.9	1	0.6
Sales-tax exemption for energy used in manufacturing	CO	22	22	24	29	26	5	0
Sales-tax exemption for gasoline and special fuel	CO	6	7	9	12	9	9	9
Sales-tax exemption for residential use of fuel	CO	53	50	57	66	57	59	59
Sales-tax exemption for energy and energy-producing fuels	KY	4	2	2	2	3	3	3
Sales-tax exclusion for energy used in manufacturing	LA	n.a.	6	6	6	7	7	7
Sales-tax exemption on gas for residential use	OK	43	40	46	48	55	57	57
Sales-tax exemption for residential utilities	PA	254	164	177	222	188	247	260
Sales-tax exemption for natural gas	TX	197	185	246	244	244	275	294
Credit for reducing utility charges	WV	n.a.	n.a.	n.a.	2	2	2	2
Non-utility sales of natural gas	WV	..	..	..	17	17	17	15
General services support								
Fossil energy R&D	Federal	60	45	15	33	34	200	10

Notes: Tax expenditures for any given country are measured with reference to a benchmark tax treatment that is generally specific to that country. Consequently, the estimates contained in the table above are not necessarily comparable with estimates for other countries. In addition, because of the potential interaction between them, the summation of individual measures for a specific country may be problematic. The allocation of particular measures across fuel types was done by the OECD Secretariat based on the IEA's Energy Balances and on other data as specified in the chapter for the United States.

GLOSSARY

Accelerated depreciation	A provision in a country's tax code that allows businesses to allocate the costs of past expenditures on fixed assets over a shorter accounting period than using straight-line depreciation.
Anthracite	A shiny hard coal with a high carbon content and little volatile matter that produces little smoke when it burns.
Aviation gasoline	Gasoline (petrol) specially formulated for use in ignition-combustion engines used generally in small airplanes.
Biodiesel	A diesel-equivalent, processed fuel made from the esterification (a chemical process which removes the glycerine from the oil) of both vegetable oils and animal fats.
Biofuels	Generally liquid fuels derived from biomass or waste feedstocks and include ethanol and biodiesel.
Biogas	A mixture of methane and CO_2 produced by bacterial degradation of organic matter and used as a fuel.
Bituminous coal	A dense coal, usually black, sometimes dark brown, often with well-defined bands of bright and dull material, used primarily as fuel in steam-electric power generation, with substantial quantities also used for heat and power applications in manufacturing and to make coke. Its moisture content usually is less than 20%. The heat content of bituminous coal ranges from 21 to 30 million Btu per ton on a moist, mineral-matter-free basis.
Brown coal	A collective term for lignite and sub-bituminous coal (see respective category definitions).
Buildings	A sector that includes energy used in residential, commercial and institutional buildings. Building energy use includes space heating and cooling, water heating, lighting, appliances and cooking equipment.
Bunkers	Refers to both international marine bunkers and international aviation bunkers (see respective category definitions).
Carbon black	Residual produced from the incomplete combustion of heavy petroleum products and used mainly in rubber goods, pigments, and printer's ink. It is also known as acetylene black, channel black, furnace black, lamp black or thermal black.
Clean coal technologies	Technologies designed to enhance the efficiency and the environmental acceptability of coal extraction, preparation and use.
Coal	A collective term that refers to both peat, primary coal (brown coal and hard coal) and derived fuels (including patent fuel, brown-coal briquettes, coke-oven coke, gas coke, coke-oven gas, blast-furnace gas and oxygen steel furnace gas).
Coalbed methane	Methane found in coal seams. Coalbed methane (CBM) is a source of unconventional natural gas.
Coke (coal)	A solid carbonaceous residue derived from low-ash, low-sulfur bituminous coal from which the volatile constituents are driven off by baking in an oven at temperatures as high as 2 000 degrees Fahrenheit so that the fixed carbon and residual ash are fused together. Coke is used as a fuel and as a reducing agent in smelting iron ore in a blast furnace. Coke from coal is grey, hard, and porous and has a heating value of 24.8 million Btu per tonne.

Coke (petroleum)	A residue high in carbon content and low in hydrogen that is the final product of thermal decomposition in the condensation process in cracking. This product is reported as marketable coke or catalyst coke. The conversion is 5 barrels (of 42 U.S. gallons each) per short ton. Coke from petroleum has a heating value of 6.024 million Btu per barrel.
Coal-to-liquids	Coal-to-liquids (CTL) refers to the transformation of coal into liquid hydrocarbons. It can be achieved through either coal gasification into syngas (a mixture of hydrogen and carbon monoxide), combined with Fischer-Tropsch or methanol-to-gasoline synthesis to produce liquid fuels, or through the less developed direct-coal liquefaction technologies in which coal is directly reacted with hydrogen
Condensates	Liquid hydrocarbon mixtures recovered from associated or non-associated gas reservoirs. They are composed of C5 and higher carbon number hydrocarbons and normally have an API between 50° and 85°.
Electricity generation	Defined as the total amount of electricity generated by power only or combined heat and power plants including generation required for own use. This is also referred to as gross generation.
Enhanced oil recovery	A generic term for techniques such as steam injection, hydrocarbon injection, underground combustion, and CO_2 flooding, which increase the amount of crude oil extracted from an oil field. It follows primary recovery (oil produced by the natural pressure in the reservoir) and secondary recovery (using water injection). Enhanced oil recovery is also known as tertiary oil recovery or improved oil recovery.
Ethanol	Ethyl alcohol that is normally produced from fermenting any biomass high in carbohydrates (starches and sugars) or cellulose and hemicelluloses (the fibrous material that makes up the bulk of most plant matter) using advanced techniques.
Excise tax	A special tax levied on a specific kind of goods, typically alcoholic beverages, tobacco and fuels; it may be imposed at any stage of production or distribution and are usually assessed by reference to the weight or strength or quantity of the product.
Fossil fuel	A fuel derived from the remains of ancient plant and animal life. Fossil fuels include peat, lignite, bituminous and sub-bituminous coal, petroleum (derived from conventional geological formations, oil sands or oil shale), and natural gas (derived from conventional geological formations, coal seams, natural-gas shales, or methane clathrate).
G-20	The Group of Twenty countries: Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Korea, Mexico, the Russian Federation, Saudi Arabia, South Africa, Turkey, the United Kingdom, and the United States, the European Union
Gas	Gas includes natural gas (both associated and non-associated with petroleum deposits, but excluding natural gas liquids) and gas-works gas.
Gas-to-liquids	Gas-to-liquids refers to a process featuring reaction of methane with oxygen or steam to produce syngas followed by synthesis of liquid products (such as diesel and naphtha) from the syngas using Fischer-Tropsch catalytic synthesis. The process is similar to those used in coal-to-liquids or biomass-to-liquids.
Hard coal	Coal of gross calorific value greater than 5 700 kilocalories per kilogramme on an ash-free but moist basis. Hard coal can be further disaggregated into anthracite, coking coal and other bituminous coal.
Heat energy	Heat is obtained from fuel combustion, nuclear reactors, geothermal reservoirs, capture of sunlight, exothermic chemical processes and heat pumps which can extract it from ambient air and liquids. It may be used for heating or cooling or converted into mechanical energy for transport vehicles or electricity generation. Commercial heat sold is reported under total final consumption with the fuel inputs allocated under power generation.
Heavy petroleum products	A collective term referring to heavy fuel oil.
Hydrocarbons	Hydrocarbons are compounds of hydrogen and carbon in various combinations that are present in petroleum products and natural gas. The term is sometimes used to refer to the group of products formed by crude oil and natural gas.

Hydroelectric power	Kinetic energy of water converted into electricity in hydroelectric plants. It excludes output from pumped storage and marine (tide and wave) plants.
Industry	A sector that includes fuel used within the manufacturing and construction industries. Key industry sectors include iron and steel, chemical and petrochemical, non-metallic minerals, and pulp and paper. Use by industries for the transformation of energy into another form or for the production of fuels is excluded and reported separately under other energy sector. Consumption of fuels for the transport of goods is reported as part of the transport sector.
Intangible drilling costs (IDCs)	The costs incurred by oil and gas producers when preparing and developing a well before production begins. These include wages, repairs, fuel, and hauling. The costs associated with development work or drilling done by a contractor are also sometimes considered IDCs.
International aviation bunkers	Deliveries of aviation fuels to aircraft for international aviation. Fuels used by airlines for their road vehicles are excluded. The domestic-international split is determined on the basis of departure and landing locations and not by the nationality of the airline. For many countries this incorrectly excludes fuels used by domestically owned carriers for their international departures.
International marine bunkers	This category covers those quantities delivered to ships of all flags that are engaged in international navigation. The international navigation may take place at sea, on inland lakes and waterways, and in coastal waters. Consumption by ships engaged in domestic navigation is excluded. The domestic/international split is determined on the basis of port of departure and port of arrival, and not by the flag or nationality of the ship. Consumption by fishing vessels and by military forces is also excluded and included in residential, services and agriculture.
Jet fuel, kerosene type	A medium-distillate used for aviation turbine power units that has the same distillation characteristics and flash point as kerosene (between 150 degrees C and 300 degrees C but not generally above 250 degrees C). In addition, it has particular specifications (such as freezing point) which are established by the International Air Traffic Association (IATA).
Kerosene	Generally refers t a medium-distillate used for heating and wick lamps, with a flash point between 150 degrees C and 300 degrees C but not generally above 250 degrees C.
Light petroleum products	A collective term referring to liquefied petroleum gas (LPG), naphtha and gasoline.
Lignite	A non-agglomerating coal with a gross calorific value less than 4 165 kilocalories per kilogramme (kcal/kg).
Low-carbon technologies	Refers to technologies that produce low- or zero- greenhouse-gas emissions while operating. In the power sector this includes fossil-fuel plants fitted with carbon capture and storage, nuclear plants and renewable-based generation technologies.
Lower heating value	The heat liberated by the complete combustion of a unit of fuel when the water produced is assumed to remain as a vapour and the heat is not recovered.
Middle distillates	A collective term referring to jet fuel, diesel and heating oil.
Natural decline rate	The base production decline rate of an oil or gas field without intervention to enhance production.
Natural gas liquids (NGLs)	The liquid or liquefied hydrocarbons produced in the manufacture, purification and stabilisation of natural gas. These are those portions of natural gas which are recovered as liquids in separators, field facilities, or gas processing plants. NGLs include but are not limited to ethane, propane, butane, pentane, natural gasoline and condensates.
Non-energy use	Fuels used for chemical feedstocks and non-energy products. Examples of non-energy products include lubricants, paraffin waxes, coal tars, and oils used as timber preservatives.
Nuclear energy	The primary heat equivalent of the electricity produced by a nuclear power plant with an average thermal efficiency of 33%.

Nuclear energy	The electricity produced by a nuclear power plant.
Observed decline rate	The production decline rate of an oil or gas field after all measures have been taken to maximise production. It is the aggregation of all the production increases and declines of new and mature oil or gas fields in a particular region.
Off-highway use	Refers to the usage of fuels in certain industrial equipments, including earth-moving equipment, cranes, stationary generators, and air compressors. It does not necessarily include the volumes of fuel used off-highway for agricultural purposes (such as in tractors, irrigation pumps and other agricultural machinery).
Oil	A collective term that refers to crude oil, condensates, natural gas liquids, refinery feedstocks and additives, other hydrocarbons (including emulsified oils, synthetic crude oil, mineral oils extracted from bituminous minerals such as oil shale, bituminous sand and oils from CTL and GTL) and petroleum products (refinery gas, ethane, LPG, aviation gasoline, motor gasoline, jet fuels, kerosene, gas or diesel oil, heavy fuel oil, naphtha, white spirit, lubricants, bitumen, paraffin waxes and petroleum coke).
Oil shale	A sedimentary rock containing kerogen, a solid organic material. Liquified oil produced from oil shale is called “shale-derived fuel oil.” While the IEA classifies oil shale and tar sands as “lignite,” shale-derived fuel oil is classified as “other hydrocarbons”.
Petroleum	See Oil.
Petroleum coke	See Coke (petroleum).
Reticulated natural gas	Natural gas distributed to end-users by a system of pipelines.
Royalty	In energy, a term used to describe either the regular payments made by the lessees of subsoil assets to the owners of the assets.
Severance tax	A tax imposed by a state (or other sub-national unit) on the extraction of a non-renewable resource (such as crude oil, natural gas or coalbed methane) that is sold outside the state or during a certain period.
Shale-derived fuel oil	See Oil shale.
Sub-bituminous coal	A non-agglomerating coal with a gross calorific value between 4 165 kcal/kg and 5 700 kcal/kg.
Tax sanction	A negative tax expenditure. It is that part of tax revenue collected by the government that corresponds to taxing a specific sector or type of consumption at a tax rate above the general (i.e. benchmark) tax rate. A tax sanction can also be referred to as “surtax” or “supertax”.
Total final consumption (TFC)	The sum of consumption by the various end-use sectors. TFC is broken down into energy demand in the following sectors: industry, transport, buildings (including residential and services) and other (including agriculture and non-energy use). It excludes international marine and aviation bunkers, except at world level where it is included in the transport sector.
Total primary energy demand (TPED)	Domestic energy demand. It is broken down into power generation, other energy sector and total final consumption.
Total primary energy supply (TPES)	The sum of energy production and imports, minus both exports and international aviation bunkers. To that are also added changes in stocks. TPES is thus equivalent to primary energy demand.

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Inventory of Estimated Budgetary Support and Tax Expenditures for Fossil Fuels 2013

This Inventory provides quantitative estimates of direct budgetary support and tax expenditures supporting the production or consumption of fossil fuels in OECD member countries. For each of the OECD's 34 member countries, it provides a succinct summary of its energy economy, and of the budgetary and tax-related measures provided at the central-government level (and, in the case of federal countries, for sub-national units of government) relating to fossil-fuel production or consumption. Many of the measures listed are relative preferences within a particular country's tax system that cannot be readily compared across countries, hence no national totals are provided. The information has been compiled as an exercise in transparency, and to develop a better understanding of potentially environmentally harmful subsidies (EHS) and of support to fossil fuels in particular. It is also intended to support the ongoing efforts of G20, APEC and other nations to reform their fossil-fuel subsidies.

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