



## UNITED STATES: INVENTORY OF ESTIMATED BUDGETARY SUPPORT AND TAX EXPENDITURES FOR FOSSIL-FUELS

### 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

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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.<sup>1</sup>

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 (EPA) 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.

## **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),

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<sup>1</sup> 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).

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<sup>2</sup> 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

#### *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.

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<sup>2</sup> 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.

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.<sup>3</sup> 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 later use against future passive-income flows. The present tax provision is an exception to this rule.

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Other than shale oil to which a 7.5% depletion rate applies when used for certain non-fuel purposes.

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<sub>2</sub> 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<sub>2</sub> 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 Koplou 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 Koplou 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<sub>2</sub> 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<sub>2</sub> Used in Tertiary Recovery (no data available)*

This provision took effect in 2009 and exempts the use of anthropogenic CO<sub>2</sub> 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.<sup>4</sup>

"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

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<sup>4</sup> 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] 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

*[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<sub>2</sub> Used in Tertiary Production (no data available)*

Purchases of CO<sub>2</sub> 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<sub>2</sub>) 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<sub>2</sub> 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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