

Taxing Energy Use 2018

Denmark

This note describes the taxation of energy use in Denmark. It contains the country's energy tax profiles, followed by country-specific information to complement the general discussion in *Taxing Energy Use 2018* (OECD, 2018). The note contains four energy tax profiles for Denmark:

Figure 1: Effective tax rates on energy use in national currency and EUR/GJ, 2015, including electricity output taxes and energy use from biomass

Figure 2: Effective tax rates on energy use in national currency and EUR/tCO₂, 2015, including electricity output taxes and energy use from biomass

Figure 3: Effective tax rates on energy use in national currency and EUR/tCO₂, 2015, excluding taxes on electricity output, including carbon emissions from biomass

Figure 4: Effective tax rates on energy in national currency and EUR/tCO₂, 2015, excluding taxes on electricity output and carbon emissions from biomass

The main insights from the second vintage of the *Taxing Energy Use* database, including a systematic comparison of patterns of the taxation of energy use across countries, sectors and fuels are available in *Taxing Energy Use 2018* (OECD, 2018) at: <http://oe.cd/TEU2018>.

1. Energy tax profiles for Denmark

Figure 1. Effective tax rates on energy use in national currency and EUR/GJ, 2015,

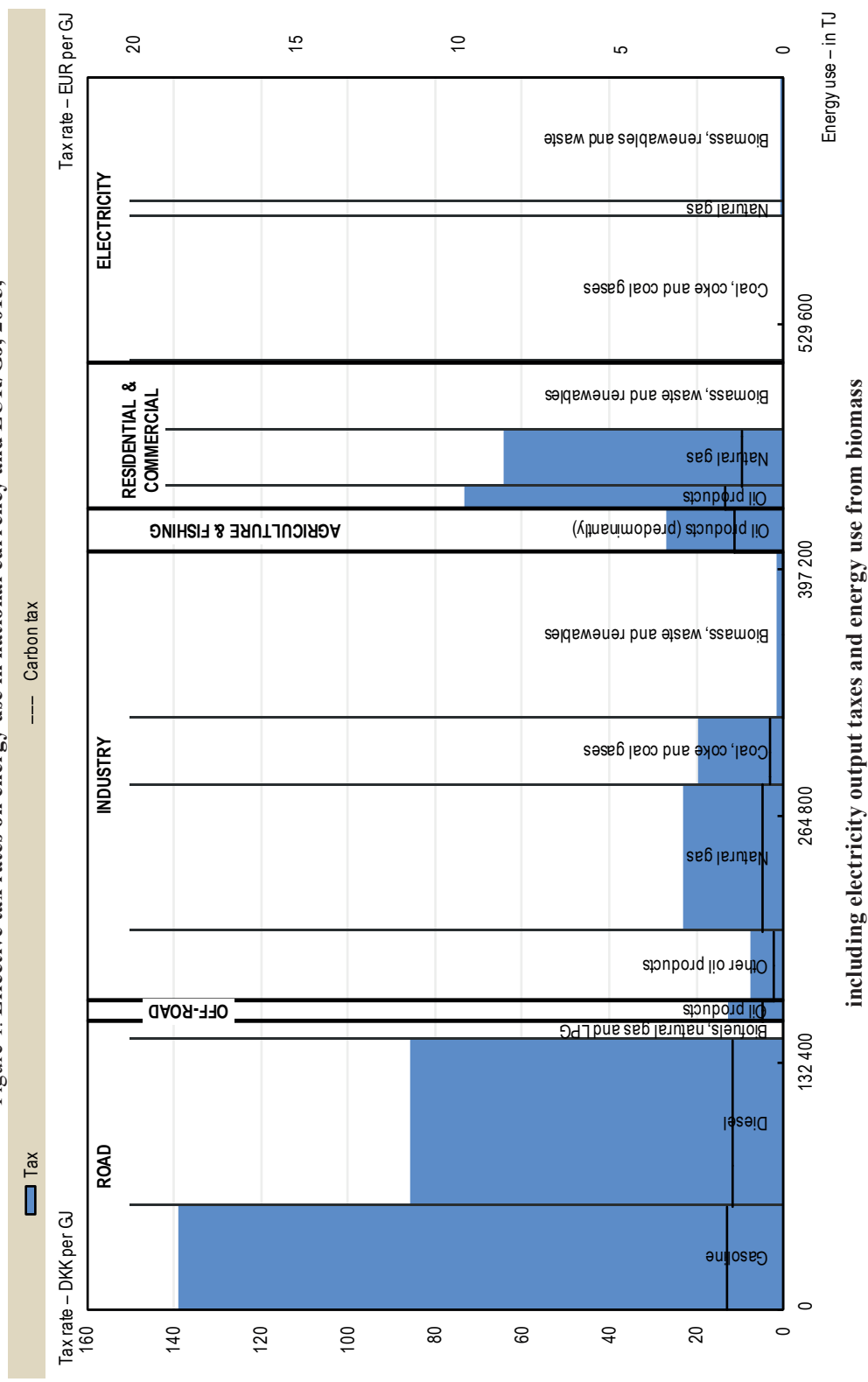


Figure 2. Effective tax rates on energy use in national currency and EUR/tCO₂, 2015, including electricity output taxes and carbon emissions from biomass

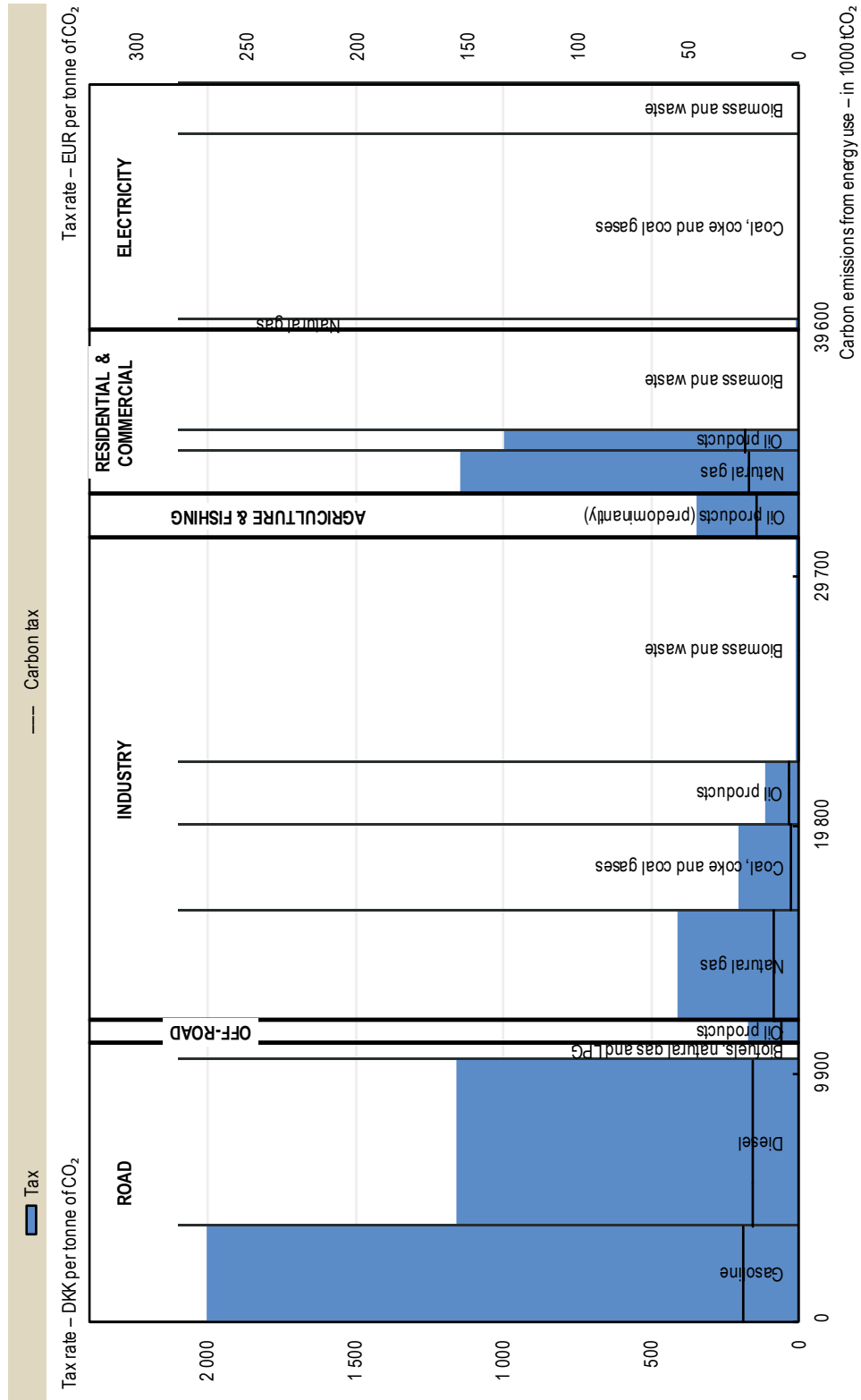


Figure 3. Effective tax rates on energy use in national currency and EUR/tCO₂, 2015, excluding taxes on electricity output, including carbon emissions from biomass

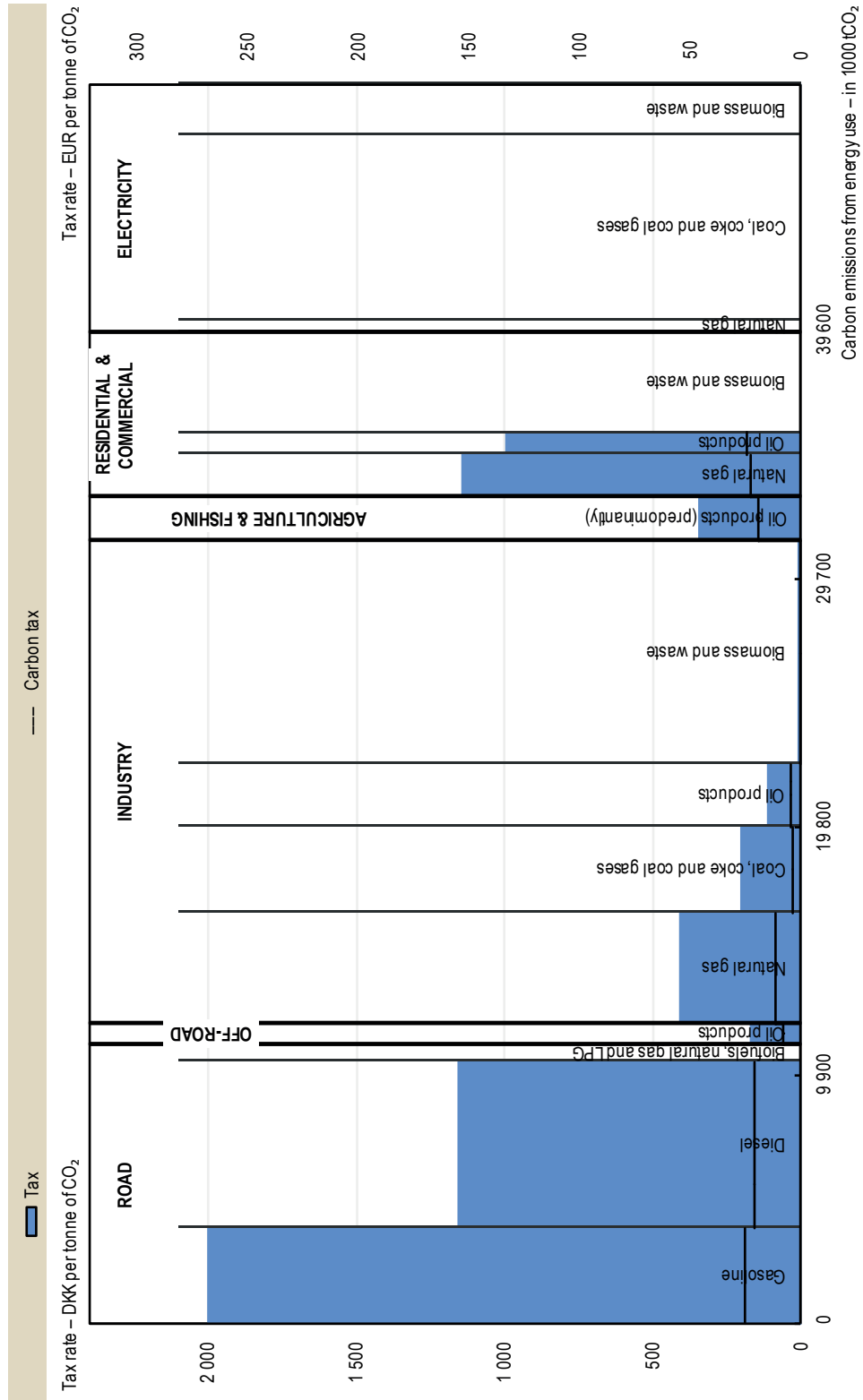
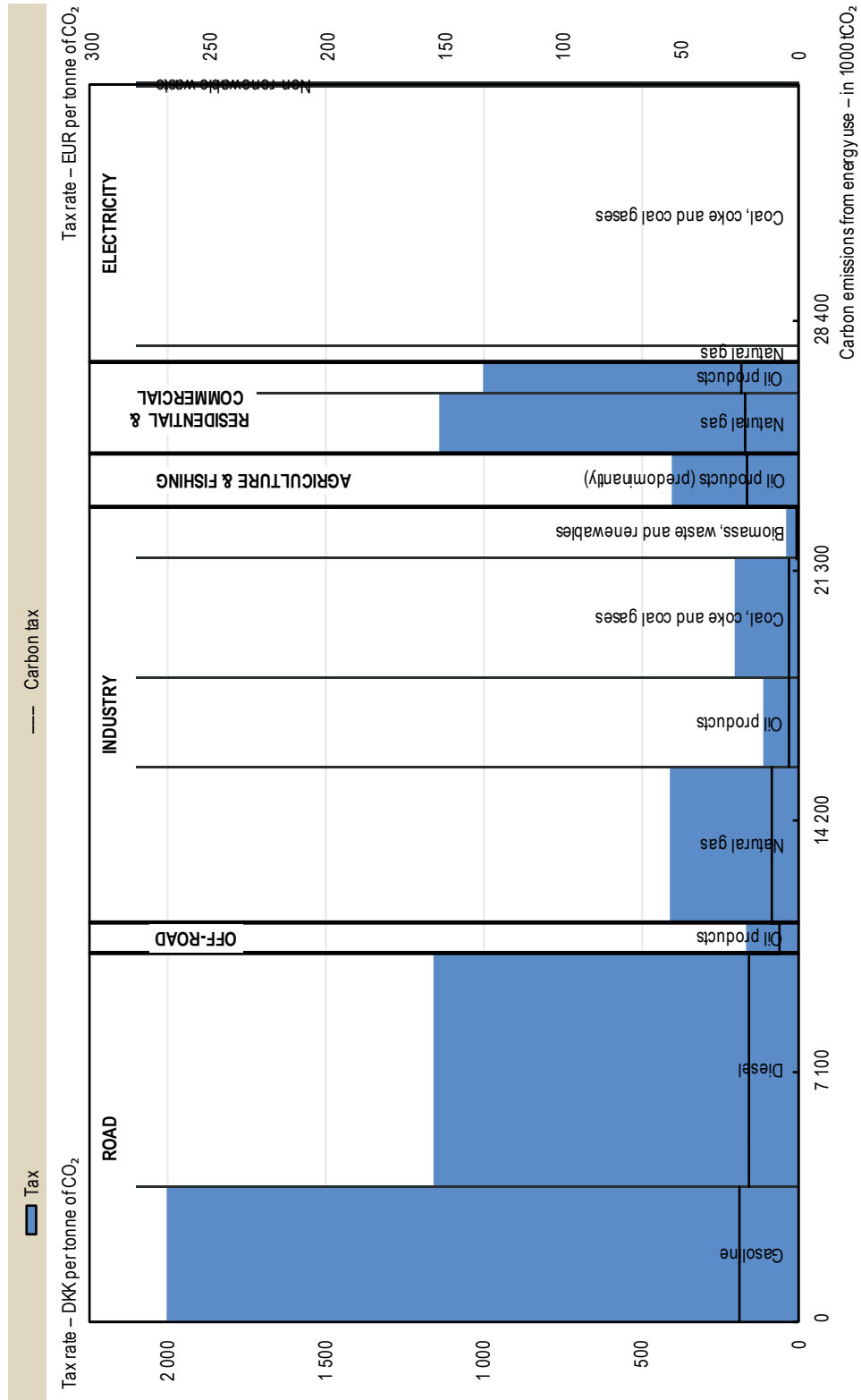


Figure 4. Effective tax rates on energy use in national currency and EUR/tCO₂, 2015, excluding taxes on electricity output and carbon emissions from biomass



2. Country-specific notes

This note describes the taxation of energy use in Denmark. It contains the country's energy tax profiles, accompanied by country-specific information to complement the general discussion in *Taxing Energy Use 2018* (OECD, 2018). Tax rates are those applicable in April 2015, energy use data are for 2014.

The data shown in the energy tax profiles is from the OECD's *Taxing Energy Use* (TEU) Database. More detail on the TEU Database, the calculation of effective tax rates on energy use and the interpretation of the energy tax profiles can be found in *Taxing Energy Use 2018* (OECD, 2018).

Denmark participates in the European Union emissions trading system (ETS), not shown in the energy tax profiles.¹ Since the entities which participate in the ETS do not pay the CO₂ tax, a corresponding amount of carbon emissions from energy use is shown as untaxed under the CO₂ tax in the energy tax profiles.

Energy and carbon taxes

Energy taxes in Denmark are levied within the framework of the 2003 EU Energy Tax Directive, which sets minimum rates for the taxation of energy products in member states. Within this framework, the main taxes on energy use in Denmark are the following:

- An energy tax applies to oil products, natural gas, coal and coke and fossil waste, at rates varying in proportion to the fuels' energy content;
- A CO₂ tax applies to oil products, natural gas and coal and coke products, at rates varying in proportion to fuels' carbon content;
- A tax on fossil waste is a combined input- and output-tax, where the output-tax is levied on heat from energy production;
- Electricity output is taxed (per MWh).

The rates at which these taxes apply can differ across fuels and different users, as described below.

These taxes are included in the energy tax profiles of Denmark, but the tax on electricity output is only included when separately indicated (see below). Where more than one tax rate applies to an energy user or fuel, the energy tax profile shows their sum.

Effective tax rates on energy use for different fuels and users

The tax rates on different fuels and uses are linked to Denmark's energy use² to calculate effective tax rates on energy use (in DKK/TJ and EUR/TJ) or CO₂ emissions from energy use (in DKK/tCO₂ and EUR/tCO₂). Energy use and the CO₂ emissions associated with it are shown for six economic sectors: road transport, domestic offroad transport, industry, agriculture and fishing, residential and commercial, and electricity.

The Danish energy tax profiles (Figures 1 and 2) show effective tax rates for different fuels and uses in terms of the fuels' energy and carbon content, respectively. Figures 1

1. The OECD's [Effective Carbon Rates](#) contains information on emissions trading systems.
 2. Data on energy use is taken from the IEA's *Extended World Energy Balances*, see Chapter 1 of *Taxing Energy Use 2018* (OECD, 2018) for additional detail.

and 2 include energy use and carbon emissions from biomass and they show output taxes on electricity. Figure 3 is identical to Figure 2, except that taxes on electricity output are excluded. Figure 4 excludes carbon emissions from biomass and taxes on electricity output.

- Of the six economic sectors, the **road** sector is taxed at the highest rates, both in terms of the fuels' energy and carbon content. Within the road sector, gasoline is taxed at the highest effective tax rate, diesel is taxed at a lower rate in terms of TJ and in terms of CO₂. Biofuels are untaxed.
- Fossil fuels used in the **off-road** sector are taxed, but at lower effective and statutory rates than fuel use in road transport. Exemptions or reduced rates apply as follows:
 - Only the CO₂ tax applies to diesel used for railway transport, the energy excise tax does not apply;
 - Fuels used for domestic navigation and for domestic aviation are untaxed;
 - In line with data from the OECD's *Effective Carbon Rates*, the EU ETS covers 10% of the domestic **off-road** transport sector, which is correspondingly shown as untaxed under the CO₂ tax.
- Fossil fuels are taxed in the **industry** and the **residential and commercial** sector by both the energy excise tax and the CO₂ tax. The EU ETS covers 40% of the industry sector and less than 1% of the residential and commercial sector, so the CO₂ tax has been taken out for a corresponding amount of energy use and carbon emissions from energy use.
- Fossil fuels used in **agriculture** are taxed both under the energy tax and the CO₂ tax, but fuels used for **fishing** are untaxed. The EU ETS covers 2% of the agriculture and fishing sector, so a corresponding amount of energy use and carbon emissions from energy use is shown as untaxed under the carbon tax.
- Fuels used to generate **electricity** are untaxed, but **electricity output** is taxed (per MWh). The statutory rate paid on electricity output by industrial users is significantly lower than the rate paid by all other users.

Assumptions and caveats

Danish legislation sets the CO₂ rate per tonne of carbon. Since effective tax rates are calculated based on per-unit rates, standard conversion factors have been used convert the carbon tax rates into per unit rates. To illustrate, the per unit CO₂ tax for gasoline and diesel used in the road transport sector is DKK 0.427 and DKK 0.419 per litre, respectively.

Where not separately indicated, these assumptions have been arrived at in consultation with national officials, or otherwise are based on previous *Taxing Energy Use* publications.

Reported tax expenditures and rebates

Denmark does not report any tax expenditures with regards to the taxes on energy use included in the *Taxing Energy Use* database. Additional detail on the treatment of tax expenditures is available in Chapter 1 of *Taxing Energy Use 2018* (OECD, 2018).

Sources

The main insights from the second vintage of the *Taxing Energy Use* database are analysed in:

OECD (2018), *Taxing Energy Use 2018 – Companion to the Taxing Energy Use Database*, OECD Publishing, Paris. <http://dx.doi.org/10.1787/9789264289635-en>.

In addition to the sources included in *Taxing Energy Use 2018* (OECD, 2018), and consultation with national delegates, the following country-specific source was used:

Skatteministeriet (2015), “CO₂ afgiftsloven”, www.skm.dk/skattetal/satser/satser-og-beloebsgraenser/co2-afgiftsloven.