



Federal
Public Service
FINANCE

FEDERAL INVENTORY OF

FOSSIL FUEL SUBSIDIES

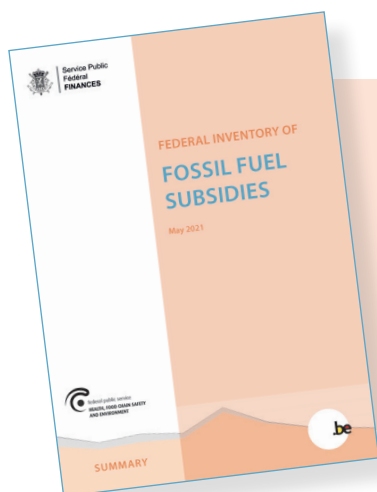
May 2021



federal public service
**HEALTH, FOOD CHAIN SAFETY
AND ENVIRONMENT**

SUMMARY

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An electronic copy of the full Report (only in French and Dutch) and of this Summary (also in French and Dutch) may be downloaded at:

https://finance.belgium.be/en/figures_and_analysis/analysis/inventory-fossil-fuels-subsidies

<https://climat.be/2050-en/complementary-analyses>

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1 Background

This report is a response to the requirement from the National Energy and Climate Plan (NECP) of drawing up and evaluating a list of existing fossil fuel subsidies at federal level. *“In collaboration with other EU Member States, Belgium will gradually phase out financial investments in and support for fossil fuels and will draw up an inventory of all fossil fuel subsidies to be communicated to the European Commission by the end of 2020»*. This NECP requirement stems from the requirement of the EU Regulation on the governance of the Energy Union and Climate Action¹.

This work lays the foundation for responding to the subsequent requirement contained in the NECP regarding fossil fuel subsidies, namely the reform and/or phasing out of these subsidies. *“Belgium is drawing up an action plan by 2021 to gradually phase out subsidies for fossil fuels, notably in view of guaranteeing the country's security of supply. This plan must contain concrete steps and social correction measures to accompany the transition to a climate neutral society»*. Such a reform of fossil fuel subsidies should contribute to the achievement of Belgium's medium and long-term greenhouse gas emission reduction targets. It is in line with the following section of the federal government's agreement: *“Taxation will be analysed with a view to making it more climate and environment friendly. The government will start from the ‘polluter pays’ principle, in which it will aim to discourage the use of fossil fuels as much as possible by introducing a fiscal instrument.»*

A review of the literature was carried out, on the one hand concerning the methodological aspects, and on the other hand concerning the research carried out at international level on this topic (at OECD, IMF and WTO level), on top of a literature review concerning various quantitative evaluations of these subsidies at the federal or national level.

While these subsidies have generally been put in place to meet social or competitiveness objectives, in their current form they work against efforts to decarbonise the society and to improve air quality. They keep economies locked into carbon-intensive technologies, undermine efforts to enhance the competitiveness of sectors contributing to decarbonisation, and can be socially inequitable. This Inventory aims to provide a comprehensive overview of how fossil fuel subsidies affect the demand and supply of fossil fuels and the accumulation of carbon-intensive capital over the long term.

2 The conceptual framework

The choice made in this Inventory is that of an approach that combines the OECD bottom-up approach and the WTO approach. Another possible approach was the ‘price-gap’ approach, developed by the IMF in particular. This approach has not been adopted here as it does not directly identify subsidies and its results are too dependent on the assumptions made about production costs and external costs.

We have systematically screened the different forms of subsidies, both those granted in the form of budgetary expenditures and those granted through taxation. The latter appears to be the main mechanism through which Belgium supports fossil fuels. For these, the benchmark tax system must be defined in advance. A subsidy through taxation (tax expenditure) is indeed defined as a derogation from the benchmark tax system. Regarding income tax and VAT, we use the benchmark tax systems as defined in the federal tax expenditure Inventory. For excise duties, we have opted for a single benchmark, i.e. the excise duty rate on unleaded petrol, and not for “one rate per product”². We consider that there is no reason for taxing one energy carrier less than the other. This

¹ See the "Regulation on the Governance of the Energy Union and Climate Action (2018/1999/EU)" and the European Commission's analysis of the NECP in this regard (https://ec.europa.eu/energy/sites/default/files/documents/staff_working_document_assessment_necp_belgium_en.pdf).

² The Federal Tax Expenditure Inventory chooses a product-specific rate on the basis that excise duties are specific taxes.

choice requires that the rates applied to the different energy carriers be expressed in a common unit. In concrete terms, they are expressed in tons of oil equivalent (toe).

A distinction is also made between direct subsidies, which apply to the consumption of fossil fuels, and indirect subsidies, which apply to the production of services that rely heavily on fossil fuels.

The criterion for identifying subsidies is therefore the use of fossil fuels. Some subsidies have specific objectives. This is obvious in the case of social tariffs on energy consumption and similar social interventions. The company car tax system also aims to reduce the tax burden on labour, especially in terms of marginal tax rates. This does not preclude subsidising - directly or indirectly - the use of fossil fuels. The existence of other objectives do not have to be taken into account at the identification stage, but do so at the reform stage, by looking for a better way to achieve the specific objective while not having a negative effect on the environment.

3 Main results

This report aims to be as exhaustive as possible for direct subsidies. For indirect subsidies, we have not been able to be exhaustive and the choice of cases covered should not be interpreted as an order of priority. It has mostly been driven by data availability and by the complexity of the different cases, especially for transport.

For tax-based subsidies, the federal tax expenditure Inventory provides a starting point. However, it had to be supplemented due to the lack of estimates of revenue losses for some important items, such as company cars, fuel cards, excise duty exemptions on intermediate consumption or the excise duty exemption of kerosene. Another important change concerns the inclusion of differences in excise rates between different energy products among the subsidies.

[Table 1](#) lists the subsidies identified in this report. Direct subsidies amount to €11,202 million in 2019, or 2.4 percentage points of GDP, and have been decreasing over the five years for which data are included in this table. Between 2015 and 2019, they have decreased from 3.2% to 2.4% of GDP, i.e. a decrease of one quarter. The tables and graphs below give details by instrument (excise duties, VAT, taxes on income and transfers) and by product.

Indirect subsidies amount to 0.4% of GDP and the main item is the tax regime for company cars.

[Table 1](#) and [Figure 1](#) detail the **direct subsidies** according to the instrument used.

Subsidies in the form of transfers amount to €182 million in 2019³ and increased slightly over the last five years. These are transfers to individuals and have social objectives. Fuel cards are the only direct subsidy identified that is granted through income taxes. The estimated amount is €480 million in 2019 and has been increasing over the last five years, due to the increasing number of company cars. For VAT, the only direct subsidy identified is the reduced rate applied to the final consumption of coal and the amount is derisory, due to the very low use of this energy carrier.

Excise duties are clearly the major instrument used to grant subsidies to fossil fuels. Exemptions and reduced rates of excise duty are estimated at €10,535 million in 2019 and have decreased over the last five years. The decrease observed in total direct subsidies stems from the decrease in this category.

As for all tax expenditures, the estimated amount depends on the benchmark used. As indicated above, we considered that there were no arguments justifying differences in tax rates between energy products. We therefore used the tax rate on unleaded petrol as the benchmark and compared the rates by expressing them in energy units.

³ Taking into account, for subsidies related to electricity, the proportion of fossil fuels in the energy mix.

Table 1. List of fossil fuel subsidies
(in million euro)

	2015	2016	2017	2018	2019
Direct subsidies					
Transfers	135.1	147.4	154.8	159.8	181.9
Social tariff - Natural gas	59.0	65.0	70.0	74.0	89.0
Social tariff - Electricity	25.5	33.7	35.1	36.1	39.2
POSW ⁴ Energy Access Support Fund - natural gas	22.0	22.0	22.0	22.0	25.0
PCSW Energy Access Support Fund - electricity	10.7	10.7	10.7	10.7	11.7
Fuel Oil Fund	18.0	16.0	17.0	17.0	17.0
Income tax	348.4	327.4	412.2	472.0	480.8
Fuel cards	348.4	327.4	412.2	472.0	480.8
VAT	4.0	4.0	4.3	4.6	4.5
Reduced rate on coal	4.0	4.0	4.3	4.6	4.5
Excise duties	12,703.3	11,788.6	11,664.0	10,866.7	10,534.6
Rate differential across products					
Diesel	1,638.0	1,441.8	1,043.8	690.0	399.3
Kerosene	0.0	0.0	0.0	0.0	0.0
Heavy fuel oil	5.3	26.1	23.7	22.5	17.4
LPG	9.3	5.9	8.0	5.7	4.6
Natural gas	5,610.1	4,706.5	4,517.8	4,483.7	4,385.1
Coal and coke	332.1	95.3	0.2	8.6	46.5
Subtotal	7,594.7	6,275.6	5,593.5	5,210.6	4,852.9
Specific rates for the same product					
Heating oil	2,586.5	2,385.6	2,530.9	2,262.7	2,126.7
Gas oil - industrial and commercial uses	370.7	361.6	428.0	385.8	415.0
Reimbursement for professional use of diesel	812.3	692.7	700.8	666.3	981.0
Kerosene used as fuel	33.3	32.3	32.4	32.4	30.6
Kerosene used as engine fuel	3.7	3.9	5.0	4.0	2.9
LPG used as fuel	94.6	99.4	101.7	102.8	92.8
Natural gas at reduced rate	0.0	801.3	1,122.9	1,104.8	964.1
Subtotal	3,901.0	4,376.8	4,921.7	4,558.7	4,613.0
Subsidies on intermediate consumption					
Manufacturing, development, testing and maintenance of aircraft and ships	28.0	26.9	28.8	27.3	27.5
Rail transport	21.6	19.3	17.7	17.1	17.7
Inland navigation	168.3	153.7	136.1	147.8	133.0
Dredging activities	86.2	87.2	87.6	89.1	89.5
Agricultural and horticultural work, fish farming and forestry	453.5	422.2	436.2	370.9	354.4
Subtotal	757.6	709.3	706.5	652.2	622.2
Aviation kerosene exemption	450.0	426.8	442.3	445.2	446.5
Total direct subsidies	13,190.8	12,267.4	12,235.2	11,503.1	11,201.8
In % GDP	3.2%	2.9%	2.7%	2.5%	2.4%
Indirect subsidies					
Company cars	1,541.1	1,670.0	1,781.3	1,821.4	1,873.9
VAT - Exemption for airplane tickets	202.0	194.1	213.8	222.2	228.3
Total indirect subsidies	1,743.1	1,864.2	1,995.1	2,043.6	2,102.2
In % GDP	0.4%	0.4%	0.4%	0.4%	0.4%

⁴ Public Organisation for Social Well-being,

Figure 1. Direct subsidies to fossil fuels per instrument (2015-2019)

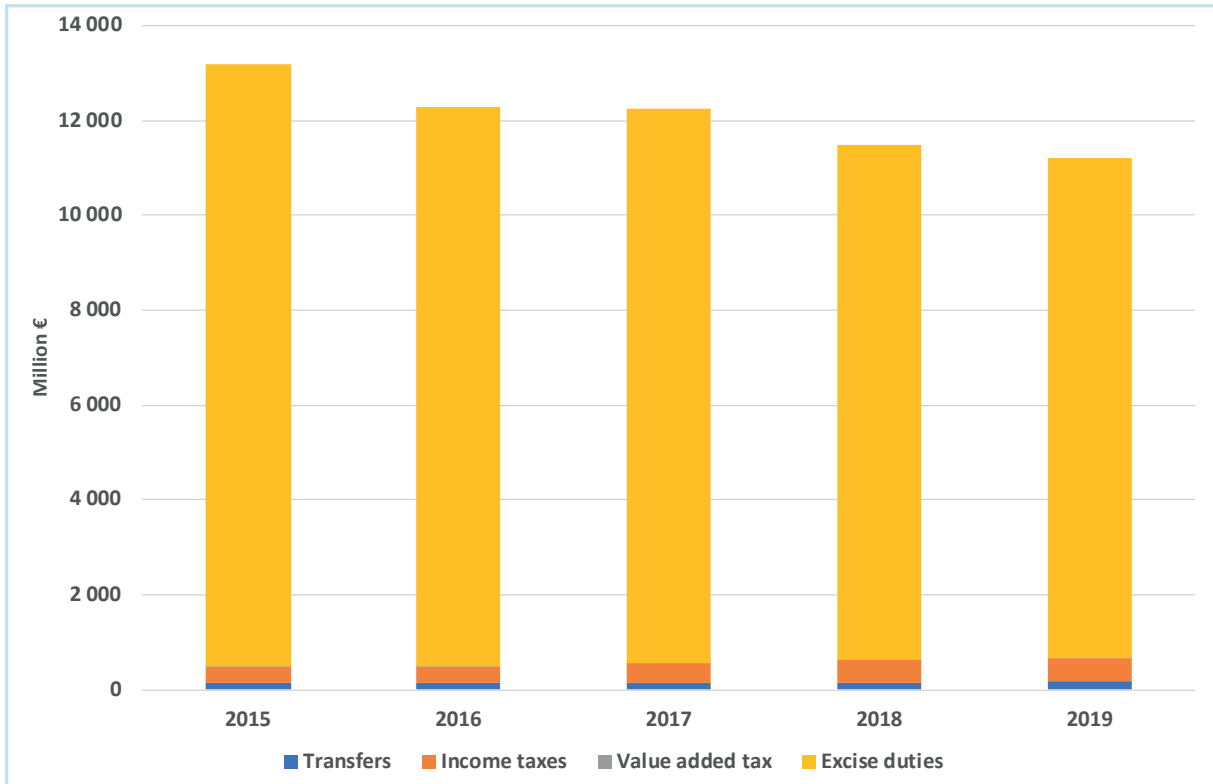
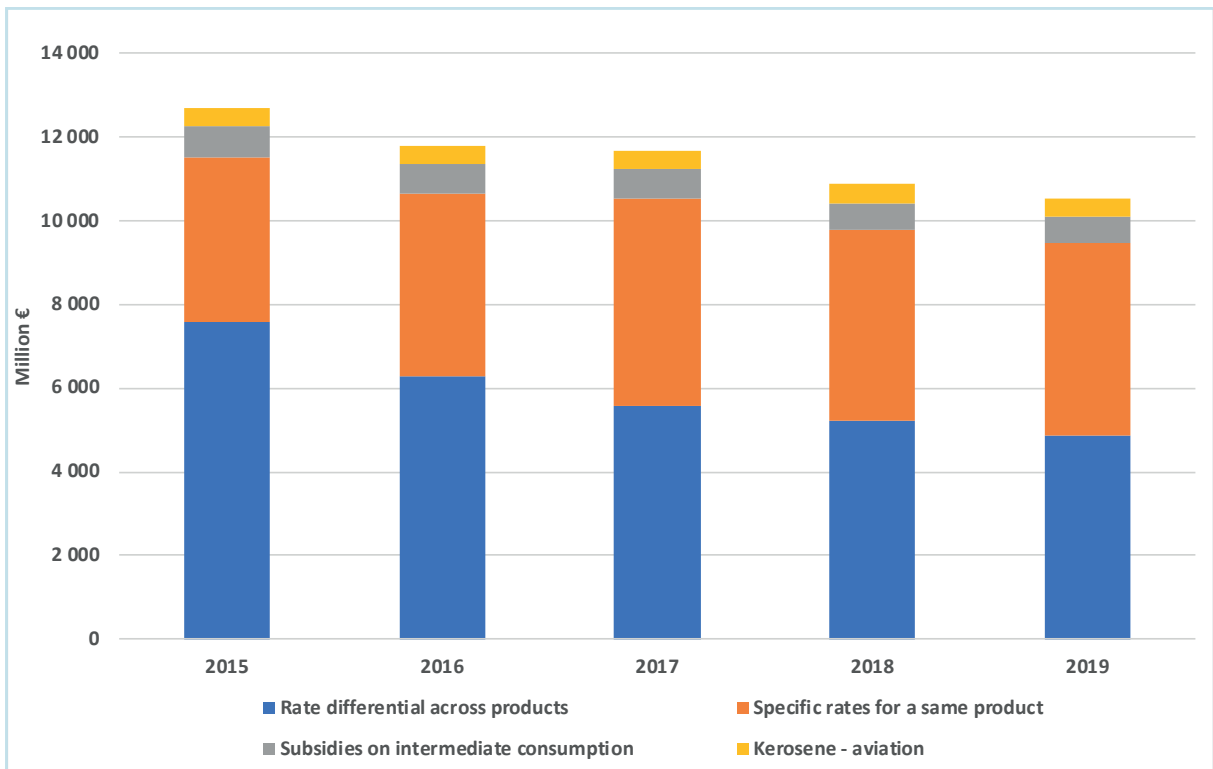


Figure 2. Fossil fuel subsidies, excise duties, per type of subsidy (2015-2019)



[Figure 2](#) breaks down the **'excise' subsidies** into several sub-categories. The first category highlights rate differentials across products. The corresponding amount is €4,853 million in 2019⁵, constituting a significant reduction over the last five years : it amounted to 7.595 million € in 2015. This reduction is the result of the increase of excise duties applied to diesel that converged towards those applied to unleaded petrol, which constitutes the reference point here. It should be noted, however, that this equalisation is not carried out in terms of energy units (toe) but in terms of volume, which leaves a residual amount of subsidy for diesel at the end of the period. However, the largest share of subsidies resulting from the rate differential across products comes from the low taxation of natural gas.

Special rates for the same product are covered in the second category. These subsidies are listed in the Federal Tax Expenditure Inventory, even though the amount of the subsidy is not the same as in this report due to different reference points⁶. The amount of this category of subsidies is estimated at €4,613 million in 2019 and has increased over the last five years. The three main items are the exemption from excise duty on heating oil, the reimbursements for professional use of diesel and the reduced rate for natural gas.

A third category includes subsidies on intermediate consumption that are not listed in the federal tax expenditure Inventory. Our estimates rely on various sources including the input-output tables and the data collected for the Greenhouse Gas Inventory. The amount of these subsidies is estimated at €622 million in 2019. Agriculture (and other activities) is the main item, followed by inland navigation.

The last category relates to the exemption from excise duties on kerosene. The amount of the subsidy is estimated at €447 million in 2019.

'Excise' subsidies can also be categorised by product, as indicated in [Figure 3](#).

Most of the subsidies are for diesel and natural gas.

In the case of diesel, subsidies are partly the result of the remaining tax differential (in energy units) with unleaded petrol. However, most of the subsidies for diesel stem from the special schemes for heating oil, professional use of diesel and the agriculture and forestry sector. For natural gas, the subsidy comes from the general under-taxation, compared to the reference point for unleaded petrol, and from the reduced rate applied to this energy carrier within the framework of sectoral energy agreements.

Total subsidies can be broken down into the main sectors of transport, industry, buildings, and agriculture and other activities. [Figure 4](#) shows the result of this breakdown for 2019. It includes both direct and indirect subsidies.

The transport sector received €2,419 million in direct subsidies in 2019, representing 22% of total direct subsidies. Indirect subsidies to this sector amounted to €2,197 million. The other sectors received direct subsidies only: industry €3,386 million (30% of total direct subsidies), buildings €4,805 million (43%) and agricultural and other activities €595 million (5%). These amounts and ratios must be seen in relation to the relative importance of the different sectors or activities concerned. It should be noted for instance that in 2019, agriculture represented only 0.3% of the value added produced by the economy as a whole.

⁵ The amount of the subsidy is calculated on the basis of the volumes subject to the reference rate of excise duty for a given product. Where there is a special scheme, the volumes concerned are included under the second category. There is therefore no double counting.

⁶ The Federal Tax Expenditure Inventory quantifies these subsidies using the standard rate for each product as a reference. In this report, the subsidies are quantified here in relation to the single reference rate expressed in toe.

Figure 3. Fossil fuel subsidies, excise duties by product (2015-2019)

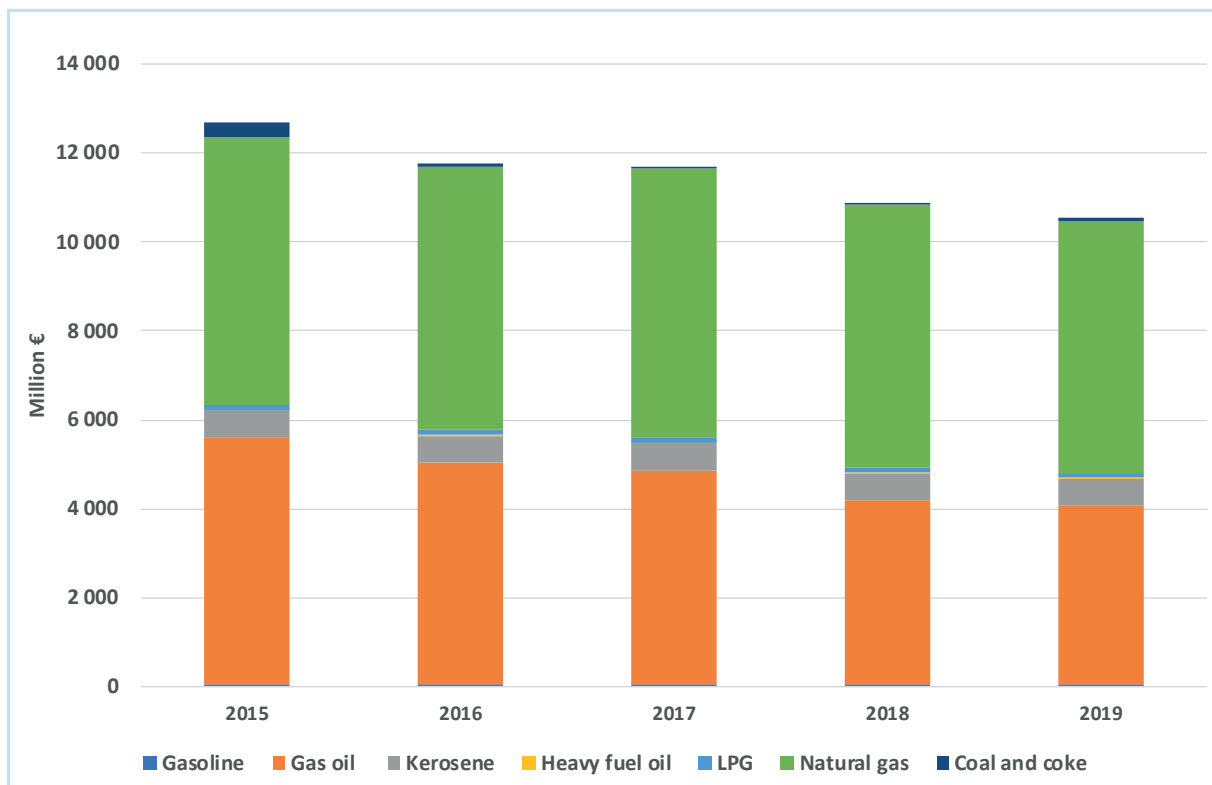


Figure 4. Breakdown of subsidies by sector, 2019 (Million euro)

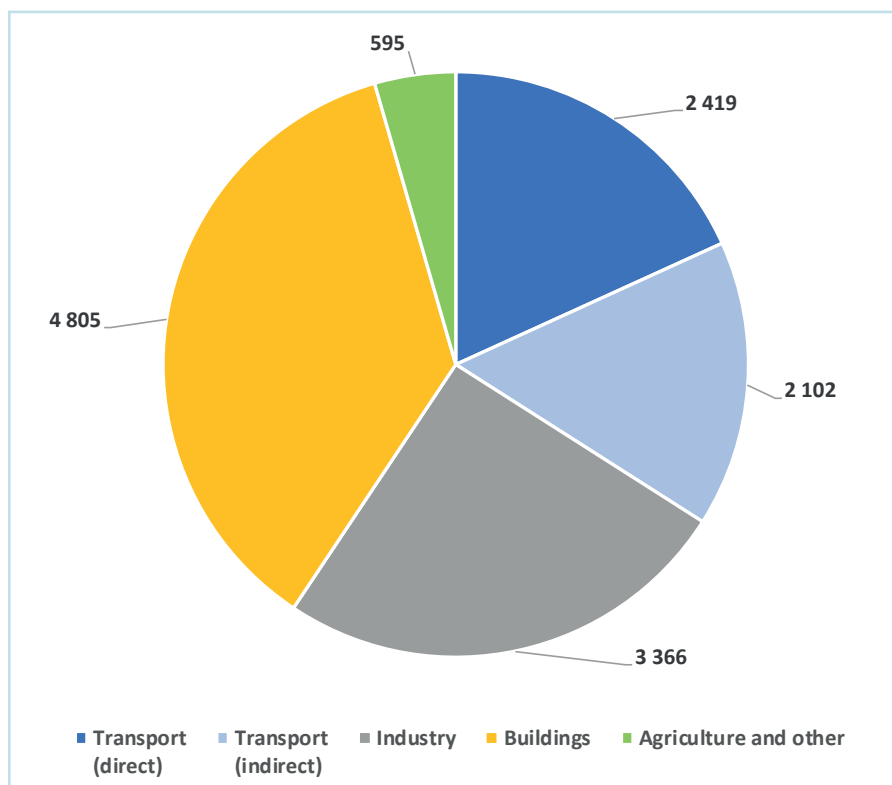


Table 2. Details of main subsidies by sector, 2019

	Millions of euros	% of subtotal
Transport		
Fuel cards	480.8	19.9%
Base rate differential across products	267.1	11.0%
Reimbursement of professional diesel	981.0	40.6%
Exemption for inland navigation	133.0	5.5%
Exemption for dredging activities	89.5	3.7%
Excise duty exemption for aviation kerosene	446.5	18.5%
Other	20.7	0.9%
Subtotal - direct subsidies	2,418.6	100.0%
Company cars	1,968.3	
VAT exemption for airplane tickets	228.3	
Subtotal - indirect subsidies	2,196.5	
Total Transport	4,615.1	
Industry		
Base rate differential across products	1,887.7	56.1%
Reduced diesel rate	415.0	12.3%
Reduced natural gas rate	964.1	28.6%
Other	98.9	2.9%
Total Industry	3,365.7	100.0%
Buildings		
Transfers to individuals (social tariffs etc.)	181.9	3.8%
Difference in base rates between products	2,440.3	50.8%
Heating oil exemption	2,126.7	44.3%
Other	56.4	1.2%
Total Buildings	4,805.3	100.0%
Agriculture and other activities		
Base rate differential across products	240.4	40.4%
Exemptions on intermediate consumption	354.4	59.6%
Total Agriculture and other activities	594.8	100.0%

Table 2 gives details about the **main items** for each of these sectors for the year 2019.

In the transport sector, the largest item of direct subsidies is the reimbursement for professional use of diesel, which accounts for 40% of the total direct subsidies received by this sector. This is followed by fuel cards and the exemption from excise duties of kerosene for aviation. Sectoral exemptions form only a small part of total subsidies but can be relatively large in relation to the activity of these sectors. The impact of rate differentials between products is relatively limited here given the small tax differential between petrol and diesel, which are the two main fuels concerned.

In industry, more than half (56%) of the direct subsidies come from rate differentials between products and more particularly from the low taxation of natural gas. The reduced rate applied to natural gas for certain companies is the second most important item.

In the buildings sector, the two main items are subsidies from product differentials and the heating oil exemption. The former mainly concerns natural gas.

Finally, two items should be mentioned for agricultural and other activities. The under-taxation of natural gas (rate differential across products) represents 40% of the total and the exemptions on intermediate consumption 60%.

Final thoughts

As stated in the introduction, this report is a response to the first requirement of the National Energy and Climate Plan related to fossil fuel subsidies, namely the identification of subsidies. The identification criterion is whether the scheme directly or indirectly subsidises the use of fossil fuels.

The identification revealed a problem of transparency. Most subsidies are granted through the tax system. However, “tax expenditures” are not directly identifiable, unlike budgetary expenditures, because tax revenues are expressed net of revenue losses from tax expenditures. Moreover, it appeared that a substantial part of the subsidies granted through the tax channel was not quantified in the Federal Tax Expenditure Inventory.

The second requirement of the National Energy and Climate Plan related to fossil fuel subsidies concerns the phasing-out of these subsidies. In this second phase, the specific objectives of some subsidies, in particular social objectives, will have to be taken into account. Their reform must reconcile the elimination of environmentally harmful effects with the achievement of the specific objectives identified through other, non-environmentally harmful means. ■