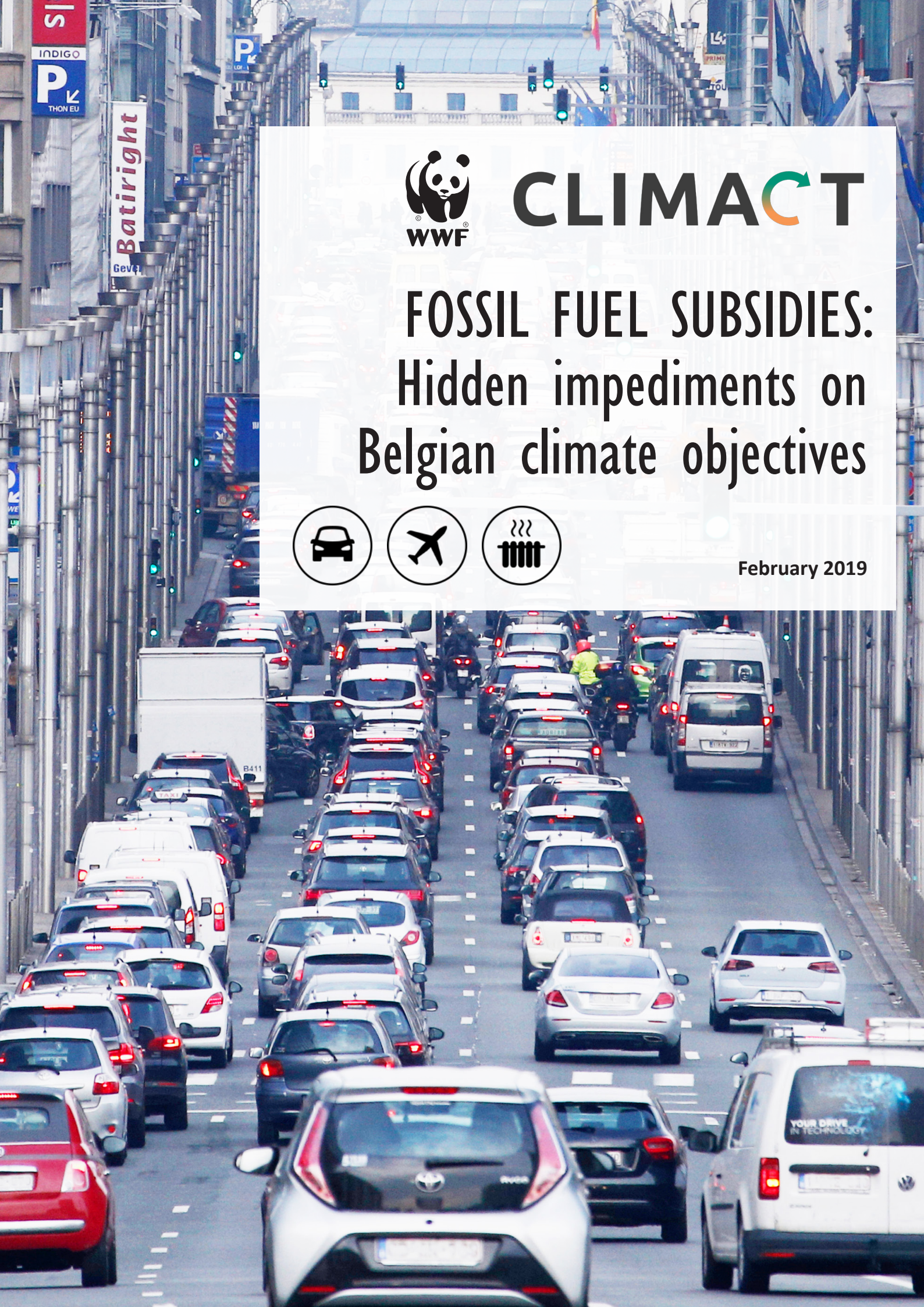

WWF

CLIMACT

FOSSIL FUEL SUBSIDIES: Hidden impediments on Belgian climate objectives

February 2019

This study was commissioned by WWF Belgium. It was led by Climact, which worked with the Overseas Development Institute (ODI) on the research.

The views expressed in this study are attributable to the autors.

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Content

1. EXECUTIVE SUMMARY

To meet global climate goals, greenhouse gas emissions need to be reduced as rapidly as possible. To achieve this, governments need to phase-out fossil fuel subsidies and scale-up support for renewable energy and low-carbon solutions.

The most recent Intergovernmental Panel on Climate Change (IPCC) report[2] 'Global Warming of 1.5°C' highlights the urgency of swiftly curbing anthropogenic greenhouse gas (GHG) emissions to limit the increase of temperatures to 1.5°C to avoid runaway climate change. By signing the Paris Agreement, Belgium committed to the low carbon transition and to "[m]aking finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development".

In that context, the phase-out of fossil fuel subsidies and the necessity of more pro-climate fiscal policies is considered by many institutions, investors, academics and specialists[3] as one of the priorities for national and international institutions to foster a low carbon economy. The objective of this phase-out is to redirect those subsidies to less harmful energy sources and more energy efficiency, but also to other sectors such as education and nature conservation that contribute to a carbon neutral society and that benefit to people.

The removal of fossil fuel subsidies is not a new topic: G20 government pledges to end fossil fuel subsidies date back to 2009, and in 2016 the G7 committed to eliminate them by 2025.

Belgium has so far not succeeded to significantly reduce its emissions. Over the last seven years GHG emissions have not significantly decreased[4] as fossil fuel consumption remained stable over the same period[5]. Belgium's subsidies and tax system currently provide an obstacle to the low carbon transition. On top of providing fossil fuel subsidies, environmental taxes in Belgium are among the lowest in Europe (Belgium ranked 21st of European Union [EU] member states in 2016)[6]. This shows that Belgium needs to adjust its fiscal policies to effectively tackle climate change. The "Yellow Vests" protests show that increasing tax on fossil fuels alone will not work. Compensatory measures for low-income households and severely impacted businesses needs to be carefully designed, communicated and planned to minimize the income impact whilst promoting an environmentally friendly behaviour.

This study aims to increase transparency on fossil fuel subsidies in Belgium.

The Belgian governments do not publish an inventory of environmentally harmful subsidies nor of fossil fuel subsidies. This contrasts with other countries like Germany, who regularly reports on such subsidies, as well as Italy, France and Sweden, which (irregularly) publish such inventories[7]. In the absence of systematic reporting, it is challenging to assess whether Belgium is on track to phase out government support for fossil fuels.

This study, therefore, aims to provide a comprehensive, up to date subsidy inventory, including high-level recommendations for subsidy reform.

[2] (IPCC, 2018)
[3] (Rockström, et al., 2017) (Whitley & van der Burg, Fossil Fuel Subsidy Reform: From Rhetoric to Reality, 2015) (Climact, 2018) (OECD, 2015) (Massiot, « Laurence Tubiana: «On peut perdre une bataille mais pas baisser les bras» », September 2018)
[4] (Federal Public Service Health, Food Chain Safety and Environment, 2018)
[5] (Federal Public Service Economy, 2017)
[6] Fiscal incomes from eco-taxes represented 2.2% of Belgium GDP vs an average of 2.4% in EU.
[7] (Whitley & van der Burg, Fossil Fuel Subsidy Reform: From Rhetoric to Reality, 2015)

In Belgium, between 2014-2016, annual fossil fuel subsidies are estimated at € ~4 billion. Taking into account the phasing-out of the favourable tax treatment of diesel, the amount is estimated at € ~2,7 billion.

This fossil fuel subsidy estimate is rather conservative since it focuses only on fiscal policies (favourable tax treatment) and budgetary expenses (direct expenses from the government) and because of a lack of transparency by Belgian governments. The biggest share of this support emanates from the federal government through tax exemptions targeting oil consumption for transport, heating, industries & business.

Key subsidies identified include (non-exhaustive list):

- Reduced excise tax for residential and professional users of heating oil: respectively €1,1 billion and €564 million,
- Favourable tax treatment for company cards fuel costs: €222 million,
- Fuel tax exemption in aviation - kerosene used in aviation exempted from fuel taxation: €210 million,
- Fuel tax rebate for taxi drivers and freight (diesel): €206 million,
- Fuel tax exemption for certain commercial and industrial uses (diesel): €151 million,
- Favourable tax treatment of diesel compared to gasoline: ~€1,3 billion. This favourable tax treatment has been gradually phased-out over the last years.

Belgian governments are recommended to improve the monitoring of fossil fuel subsidies and to plan for their phase-out.

This study's first recommendation is for Belgian governments to increase transparency on Belgium's fossil fuel subsidies by publishing an annual report on Belgium's fossil fuel subsidies. The second is to develop a clear fossil fuel subsidy phase-out roadmap with precise actions and milestones. This roadmap should meet the following criteria:

- An end date and timeline for ending all government support to fossil fuels that aim to respect Belgium's fossil fuel subsidy phase-out commitments, combined with broader tax reforms targeting all sectors (including the introduction of carbon pricing),
- Plans for monitoring progress on fossil fuel subsidy phase-out efforts,
- Complementary measures to support groups negatively affected by subsidy reforms. These will need to be targeted, transparent, temporary and support emission reduction commitments,
- Synergies with linked efforts on carbon pricing, just energy transition, stranded assets, health and air pollution to ensure policy coherence,
- Coordination with parallel processes at the national and international level (national budgets, public finance institution policies, Paris Agreement, SDGs, G7 and G20).

Although this study urges for reforms, it also highlights the importance of ensuring a just energy transition. This study does not simply recommend stopping providing aids to low-income citizens, instead it recommends Belgian governments to gradually re-direct harmful subsidies to more sustainable and effective forms of government support.

Whilst this study acknowledges the complexity of some of those reforms, the IPCC last report is yet another proof that transformative climate action is necessary and urgent; complexity cannot be used as an alibi for political inertia nor absence of ambition.

We call on Belgium governments to support EU efforts to end fossil fuel subsidies.

11 EU Member States and the EU institutions spend on average €112 billion a year supporting the production and use of fossil fuels. The EU can play a key leadership role in ending these subsidies globally within the G7 and the G20, by ensuring that bilateral, European and international institutions funded by European governments eliminate existing support to fossil fuels, and monitor reforms. Most EU subsidies identified are driven by favourable tax treatments which are subject to competition between member states. The aviation sector (and its favorable tax treatment for value added tax [VAT] and kerosene) is one of the sectors where more coordination at EU level would benefit both climate and EU member states. The EU will only take leadership if it gets the required support of its member states for this, including from Belgium.

2. CONTEXT

2.1. INTRODUCTION AND OBJECTIVES OF THIS STUDY

As a party to the Paris Agreement, Belgium has committed to "*[m]aking finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development*". The EU including all its Member States have also committed to phasing out environmentally harmful subsidies by 2020 and called on all other countries to do so by 2025. As an EU Member State and thus as part of the G20, Belgium has repeated its commitment to phase out these subsidies every year since 2009[8]. As a member of the EU bloc that is party to the G7, the country has committed to doing this, and called on all countries to do so, by 2025[9].

Commitments to end fossil fuel subsidies have typically been made because of the direct economic, trade, climate, environmental, social and health benefits of doing so. Reorienting harmful subsidies allows countries to reallocate scarce resources to energy efficiency and low-carbon investments, but also to other sectors such as health, education and nature conservation. Back in 2015, the OECD strongly encouraged its member states to reform fossil fuel subsidies: *"By distorting costs and prices, fossil fuel subsidies create inefficiencies. They are costly for governments, crowding out scarce fiscal resources that could be put to better use […] But most importantly, fossil fuel subsidies undermine efforts to make our economies less carbon-intensive while exacerbating the damage to human health cause by air pollution"*.

Despite the above-mentioned commitments and well-known benefits of reform, Belgium has taken insufficient action to address fossil fuel subsidies. In addition, the Belgian governments do not publish inventories of environmentally harmful subsidies, nor more specifically of fossil fuel subsidies, meaning that a mechanism to hold Belgium accountable for achieving its fossil fuel subsidy phase-out pledges is lacking. This contrasts with other countries like Germany, who regularly reports on such subsidies, as well as Italy, France and Sweden, which irregularly publish such inventories[10]. In the absence of systematic reporting, it is challenging to assess whether Belgium is on track to phase out government support for fossil fuels.

New EU legislation on 'Governance of the Energy Union Regulation' might help Belgium to improve transparency as well as to undertake concrete action to phase-out fossil fuel subsidies [11]. Under the regulation, EU MS should report on their fossil fuel subsidy phase-out plans as a part of their National Energy and Climate Plans (NECPs), including national and regional policies, timelines and measures to this end. Under the new governance of the Energy Union regulations all EU Member States will develop these ten-year integrated NECPs starting with the period 2021 to 2030[12].

Plans to phase-out fossil fuel subsidies included in Belgium's NECP will need to be built on a comprehensive knowledge of Belgium's existing support to fossil fuels. The Organization for Economic Cooperation and Development (OECD) publishes a biannual inventory of OECD government support to fossil fuels (OECD, 2018), and offers an important first step.

This study builds on the work of the OECD and other pre-existing studies and aims at providing a comprehensive, up to date subsidy inventory for Belgium, including high-level recommendations for subsidy reform, and lessons learned from subsidy reform efforts elsewhere. Chapter 3 sets out the methodology used in this report to identify and estimate fossil fuel subsidies. Chapter 4 provides an overview of all identified subsidy measures as well as a cross-comparison with other EU countries. Chapter 5 covers high-level phase-out recommendations and chapter 6 concludes. The study presents some limitations due to lack of publicly available information and transparency.

[8] (G20, 2018)
[9] (G7, 2016)
[10] (Whitley & van der Burg, Fossil fuel subsidy reform: from rhetoric to reality', 2015).
[11] Under the regulation, EU MS are required to report on their fossil fuel subsidy phase-out plans as a part of their National Energy and Climate Plans (NECPs), including national policies, timelines and measures to this end. All EU Member States will have to develop these ten-year integrated NECPs starting with the period 2021 to 2034.
[12] Draft NECPs need to be submitted in 2018 and to be final by 1 January 2019.

3. METHODOLOGY

Governments use subsidies as part of wider economic policies. Political interests, sometimes historical, determine how subsidies are allocated and at what scale (Whitley and van der Burg, 2015). Energy subsidies have historically been introduced by governments to support energy security, affordable access to energy for all. This is typically expected to have wider positive effects for economic development and for public goods such as health, education and more recently education. In recent years, however, climate targets, the burden of fossil fuels on health and the environment as well as on government budgets have led to calls to end fossil fuel subsidies (Whitley and van der Burg, 2015).

Numerous governments worldwide have made various and repeated commitments to end fossil fuel subsidies (G7, 2016). However, there is no commonly accepted definition for fossil fuel subsidies, nor is there a common methodology for reporting on fossil fuel subsidies or for monitoring progress on phase-out. This has led to a situation where governments are using their own definitions.

International institutions[13] that have researched energy subsidies use different definitions and methodologies for mapping and estimating them as illustrated in Table 1[14].

Table 1: Various estimates for Belgium's fossil fuel subsidies by international organization and research institutes, based on different methodologies

Organization	Methodology	Estimate (yearly average)
IMF (2015)	Uses a price-gap approach that quantifies the gap between international market reference prices and the domestic prices charged to consumers. IMF calls this the pre-tax subsidy. In addition, IMF adds a post-tax subsidy which accounts for the negative external costs of fossil fuels, including the impact of air pollution on health costs, for example.	Pre-tax subsidy: $3.03 billion dollar Post-tax subsidy: $10.21 billion dollar (2015)
OECD (2018)	Uses an inventory approach. It provides a bottom-up database of specific governments measures (including direct budgetary support and tax expenditure) that support fossil fuels and provides estimates for the amount of support provided by these measures. OECD's members can choose the amounts and subsidies they send to the OECD and limited information is available on the calculations behind the estimations.	€2.1 billion (2014-2016)
ODI + CLIMACT	Uses an inventory approach based on the internationally adopted WTO[15] definition for subsidies. It includes OECD measures as well as other measures outlined in publicly available government documents[16] and external studies[17]. Because of a lack of transparency on the matter, this study does not include public finance (such as loans provided by majority state-owned banks) and investment by state-owned enterprises (SOEs) in fossil fuels, which are also covered by the WTO definition of a subsidy and could be considered in future research on this topic.	€4.0 billion (2014-2016)

[13] The European Commission (through the DG Energy) ordered a study on energy prices and costs (European Commission, 2019). One of its chapter covers fossil fuel subsidies and is based on the same sources and similar methodology compared with this present study. The list of subsidies is not disclosed but the overall results are similar to our estimations (€2,59 billion of fossil fuel subsidies without taking into account the difference of taxation between diesel and gasoline (versus €2,7 billion here) (Trinomics, 2018)). As it was published on January 2019, this study is not discussed in this report.

[14] International Institute for Sustainable Development (IISD), n.d.; Bast et al., 2015

[15] World Trade Organization. See WTO (1994) for more information.

[16] Including (primarily): (Chambre des représentants - Kamer van volksvertegenwoordigers, 2018).

[17] Including (primarily): (Transport & Environment, 2018), (Princen, 2017), (Courbe, 2011), (Bachus, 2016), and Climact analysis for Aviation's kerosene, Diesel and Company fuel cards support.

A consistent method is crucial for identifying and quantifying subsidies, and for tracking progress on subsidy phase out. In this study we build on an internationally agreed definition of subsidies adopted at the Word Trade Organization (WTO). The Agreement on Subsidies and Countervailing Measures defines a subsidy as *'any financial contribution by a government, or agent of a government, that is recipient-specific and confers a benefit on its recipients in comparison to other market participants'* (WTO, 1994). It includes:

- Direct transfer of funds (e.g. grants, loans and equity infusion), and potential direct transfers of funds or liabilities (e.g. loan guarantees),
- Government revenue that is otherwise due, foregone or not collected (e.g. fiscal incentives such as tax credits),
- Government provision of goods or services other than general infrastructure, or purchase of goods, below market-value,
- Income or price support.

Four types of support can be derived from the above definition:

- Budget expenditure: direct spending by government agencies,
- Tax expenditure: tax breaks and favourable tax treatment,
- Public finance[18],
- Investment from State-Owned-Enterprises (SOEs)[19].

This study develops an inventory of support measures falling into the first two categories (Budget and Tax expenditure) and focuses on 2014 to 2016[20]. More detailed information on each support measure (such as the type of subsidies or the methodology used to compute the estimations) can be found in the Appendix. Although discussed in the report, Public Services Obligations ("PSOs") were not included in the subsidy inventory. They do not fall within the definition of a subsidy used in this report, as they are paid for by consumers through their energy bills. The authors encourage the development of further studies to complete the inventory of this document. It is also important to note that support to electricity consumption was not considered as a subsidy unless incontestable fossil fuel origin. On the other hand, we do consider support to electricity produced with fossil fuel as a subsidy.

The total estimate for Belgium's fossil fuel subsidy provided in this report is likely to underestimate actual subsidy levels, not only because this report only covers two categories of subsidies that are covered by the WTO definition ("public finance" subsidies and investments by SOEs are not covered) but also because the list of subsidies within the analysed categories is not exhaustive due to the lack of transparency on fossil fuel subsidies and time constraints.

More important than the semantic debate on what does or what does not constitute a fossil fuel subsidy, is the effect of these measures in stimulating the production and consumption of oil, gas and coal, as well as their incompatibility with countries' climate objectives and policies. These semantic arguments over definitions therefore seem to be missing the point[21]. The issue is not whether governments by definition provide subsidies, but instead whether they are providing support to fossil fuels when they have pledged to meet the goals of the Paris Agreement, which requires a rapid reduction in the production and use of fossil fuels.

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[18] Definition of "Public finance": Governments provide support for, and take on liability for, fossil fuel production via financial institutions they own outright in the form of grants, loans, equity, insurance and guarantees both domestically and internationally.

[19] Definition of Investments from SEOs: Investments made by companies where governments is a majority stakeholder (more than 50% of ownership).

[20] Budgetary expenditure, when publicly available, are relatively straightforward to collect and gather. Tax expenditures calculations are more complex and are done using the "revenue foregone" methodology (both in international studies and in this study). The principle is goes as followed: "[…] a reduced rate of EUR 0,25 per liter of diesel used by taxis from a normal tax rate of EUR 0,45 per liter would yield annual tax expenditure of EUR 180 million if taxi driver used 900 million liters of fuel a year." (OECD, 2015). Hence, this methodology requires the definition of a benchmark to define the level of reduction. Two consequences to keep in mind: (1) As this benchmark can be subject to discussion, it is systematically specified in each of the subsidies listed in the study. Sources and assumptions are provided as well. (2) As tax system are very specific to each country, there is no common benchmark across sovereign states. This in turn makes international comparison to be taken very carefully.

[21] As outlined in (Timperley, 2017)

4. OVERVIEW OF BELGIAN FOSSIL FUEL SUBSIDIES IDENTIFIED

4.1. MAIN RESULTS

The subsidies that we were able to identify and quantify suggest that Belgium's federal and regional governments spent at least ~€4 billion a year on average on fossil fuel subsidies between 2014-2016.

Of those €4 billion, ~€1,3 billion is provided through a favourable tax treatment of diesel compared to gasoline. Since the years analysed (2014-2016) some progress has been made, as this favourable diesel tax treatment was gradually phased-out over the last few years. Since September 2018, excise levels between diesel and gasoline are the same. It should be noted though that they are similar not only because of the increase of diesel excises but also because of a concomitant decrease of gasoline excise between June and July 2018.

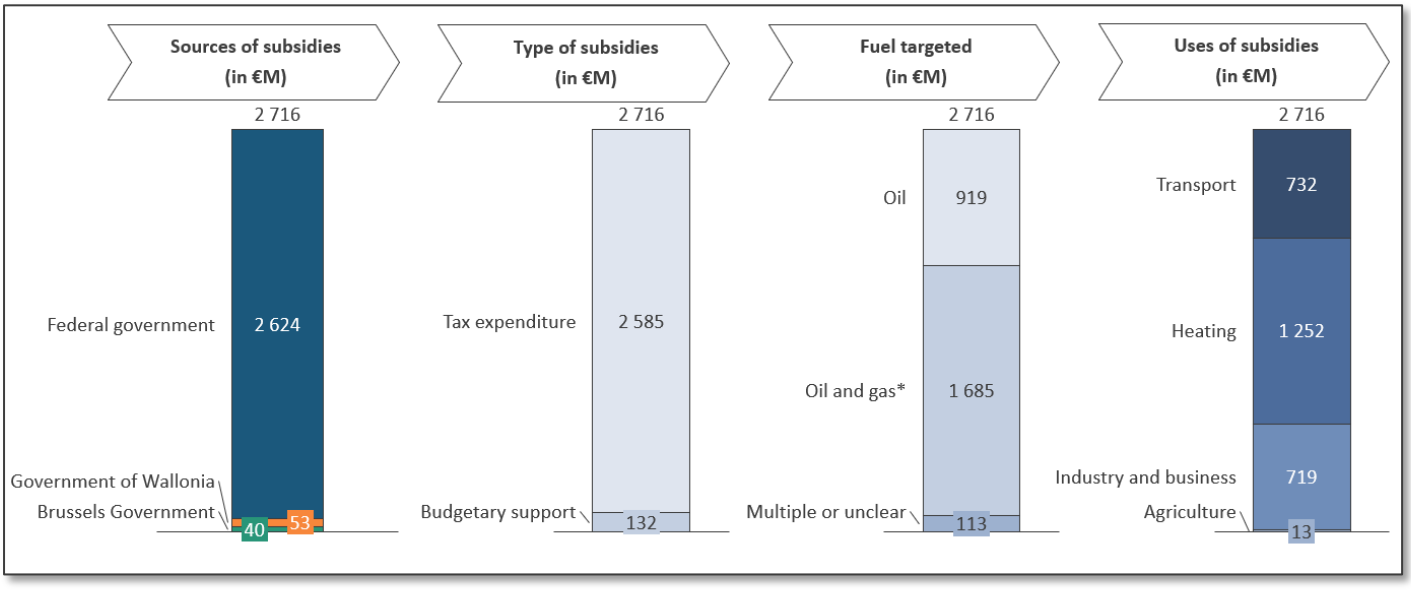
Aside from the difference of tax treatment between diesel and gasoline, Belgian governments spent on average ~€2.7 billion a year on fossil fuel subsidies between 2014-2016. The biggest share of this support is provided by the federal government through tax exemptions targeting oil consumption for transport, heating, industries & business.

The following table and figure summarize the main results. Subsidies identified are then discussed by sector in the next sections.

Table 2: Subsidies to fossil fuels in Belgium (Euro millions, average 2014-2016) (Source: ODI and Climact analysis – see Appendix for more details)

Source of subsidy	Transport	Industry and business	Heating	Agriculture	Multiple or unclear	
Federal government	639	719	1 252	13	Not identified	2 623
Wallonia Government	53	Not identified	Not identified	Not identified		53
Flanders Government	Not identified	Not identified				Not identified
Brussels Government	40	Not identified				40
Total	**732**	**719**	**1 252**	**13**	**Not identified**	**2 716**
Federal government Favourable tax treatment of diesel compared to gasoline	1 299	NA	NA	NA	NA	1 299
Total Including diesel vs gasoline	**2 031**	**719**	**1252**	**13**	**Not identified**	**4 015**

Figure 1: Subsidies to fossil fuels in Belgium (Euro millions, average 2014 - 2016) (Source: ODI and Climact analysis – see attached spreadsheet for each measure) without favourable tax treatment for diesel compared with gasoline. *"Oil and gas" type are subsidies for which the distinction between the two could not be made.



4.2. OVERVIEW OF SUBSIDIES IDENTIFIED AND EXAMINED

4.2.1. SUBSIDIES TAKEN INTO ACCOUNT IN THE INVENTORY

Table 3 provides the estimation of the subsidies identified. An explanation of each subsidy can be found in the Appendix including the source of the provided information.

The next section gives a short description of the support measures and high-level recommendations of reform per sector.

Table 3: list of subsidies included in the inventory (yearly average amount of 2014-2016)

Subsidies	Authority	Estimated amount (million €)
Fuel reduced excise tax for residential users (heating oil)	Federal	1 120,7
Fuel tax reduction for certain professional users (heating oil)	Federal	564,0
Favourable tax treatment for company cards fuel costs	Federal	222,4
Fuel tax exemption in aviation: kerosene used in aviation exempted from fuel taxation	Federal	210,4
Fuel tax rebate for taxi drivers and freight (diesel)	Federal	206,5
Fuel tax exemption for certain commercial and industrial uses (diesel)	Federal	151,8
Social tariffs for natural gas and electricity[22] (partly funded by federal government)	Federal	112,7
Tax exemption for utilitarian vehicles: « Taxe de circulation »	Wallonia & Brussels	45,1 (WL: 34,5 BXL: 10,5)
Tax exemption: no “eco-malus” in Brussels	Brussels	29,0
Heating oil social fund (partly funded by federal government)	Federal	19,0
Tax exemption for utilitarian vehicles : « Taxe de mise en circulation »	Wallonia	12,9
Fuel tax exemptions for agriculture	Federal	12,9
Tax exemption for utilitarian vehicles: eco-malus in Wallonia.	Wallonia	5,5
Fuel tax exemption for certain commercial and industrial uses (Kerosene only)	Federal	3,5
Tax exemption : Brussels' "Taxe sur les appareils distributeurs de carburants liquides ou gazeux".	Brussels	0,1
Favourable tax treatment of diesel compared to gasoline[23]	Federal	1 299
Direct subsidy ("primes"): « Prime chaudière au gaz »	Regions	Not known
Direct subsidy ("primes"): “Prime convecteur gaz performant”	Regions	Not known
Flat rate reduction for heating generated by natural gas or electricity	Federal	Not known
Fuel tax exemption for inland navigation	Federal	Not known
Fuel tax exemption for LPG and natural gas used as motor fuels	Federal	Not known
Fuel Tax Exemption for Regional Bus Transport	Federal	Not known
Fuel tax exemption for residential use of coal	Federal	Not known
Specific exemptions for circulation taxes (old-timer, disabled, etc.)	Regions	Not known

[22]The estimations given (by an external sources (OECD)) mixed electricity and gas consumption subsidies. Distinction could not be made due to lack of data.

[23] Phased-out: excises levels of the two fuels are now (September 2018) similar

4.2.2. SUBSIDIES NOT INCLUDED IN THE INVENTORY

Several supports measures were not included in the inventory because they do not fall within the scope of this study - for example, they have only been introduced after 2016, they are paid for through consumer bills rather than through government budgets or they are not directly, but indirectly linked to fossil fuels consumption. They are listed in the table here below.

This study only estimates the value of subsidies linked to fossil fuel company cards provided to employees as it directly stimulates the consumption of fossil fuels. Estimations for company cars fiscal treatment were not performed in this study as it is only indirectly linked to fossil fuel consumption. It is valuable to note that external studies[24] estimated company cars subsidies between €900 million and €3,7 billion.

Table 4: list of subsidies not included in the inventory because of methodological reason

Supports	Status*	Authority	Estimated amount (million €)
Company cars fiscal treatment	OOMS	Federal	900 - 3 700
Capacity reserve mechanisms (CRM)[25]	NIY	Federal	350 - 400
EU ETS excess of free allocations	OOMS	Federal/EU	108
CPAS fund for supporting access to energy (PSO)	OOMS	Federal	52
Compensation for indirect emission costs	OOMS	Flanders	32
Public investment: Aid in gas infrastructure development	NIY	Wallonia	25
Public investment: Aid in regional airport infrastructure	NIY	Wallonia	10
Fund for soil remediation of petrol stations and heating oil storage (BOFAS)[26]	OOMS	Federal	13
Support measures identified in Flanders: “Verhoogde bijdrage Energiefonds”; “Toeslag voor de financiering van maatregelen ter bevordering van REG”; “Tarief voor openbare dienstverplichtingen voor de financiering van de steunmaatregelen voor HNE en WKK”; “APETRA-bijdrage” [27]	NA or OOMS	Flanders	Not known

* Glossary of status column:

- NIY: Not Introduced Yet,
- OOMS: Out Of Methodology Scope,
- NA: Not Analysed.

[24] (Laine & Van Steenbergen, 2016), (Harding, 2014), (Princen, 2017), (Courbe, 2011), (May, 2017)

[25] This is being examined for gas plants in the context of the nuclear phase out in 2025.

[26] This is the consequence of the use of petrol not the use itself.

[27] See Bacchus (2017) for more details.

4.3. DESCRIPTION OF SUBSIDY MEASURES IDENTIFIED BY SECTOR

4.3.1. HEATING (RESIDENTIAL AND TERTIARY)

The following subsidies were identified:

- Heating oil for residential use and on-road diesel fuel use is subject to different excise tax rates. The "*Chambre des représentants - Kamer van volksvertegenwoordigers*" estimated the value of the difference in tax treatment between heating oil and on-road diesel at **€1,1 billion yearly,**
- According the OECD (2018), the government partly finances social tariffs for natural gas, electricity and heating oil at **€112 million yearly**. This support should be carefully evaluated as it concerns households in precarious situations and can only be removed if adequate low carbon solutions or compensatory measures are in introduced,
- Regional aid for the installation of heating equipment – we were not able to identify the amount of support provided,
- Tax exemption for residential use of coal (excise tax exemption for the use of hard coal, lignite, and coke by households) – we were not able to identify the amount of support provided.

Other supports have been identified but are not considered in the inventory, as they do not fall within the definition used in this study:

- Other aids for low-income households have been identified: the CPAS fund for supporting access to energy (OECD, 2018), categorized as Public Service Obligations. This subsidy was estimated at ~€52 million per year. Again, this support can only be removed if adequate low carbon solutions are in place.

Box 1. Discussing heating oil subsidies: methodologies and objectives

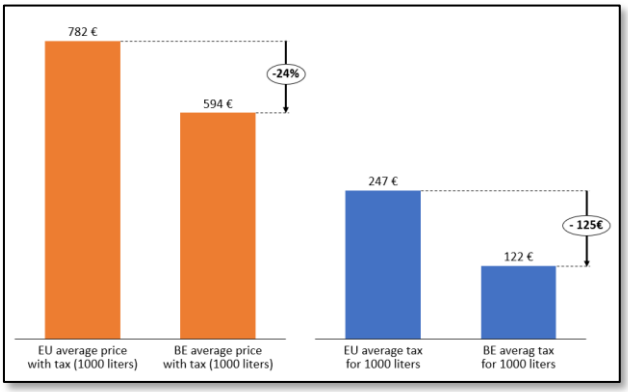
This study uses the estimations of internationally recognized institutions (the OECD and the Belgian "*Chambre des représentants - Kamer van volksvertegenwoordigers*") to define the value of the subsidy linked to heating oil consumption. It compares the tax difference between diesel (transport) and heating oil ("mazout" - heating) (although their usage is different, they are the same energetic products)[28]. The excise levels are of 0,60€/liter for diesel compared with 0,018€/liter for heating oil (FBP - BPF, 2018).

Such tax treatment does not facilitate the transition to a low-carbon society. Indeed, it does not provide citizen or organizations with the right price signal to significantly change behaviors and investment decisions.

Other elements substantiate this statement:

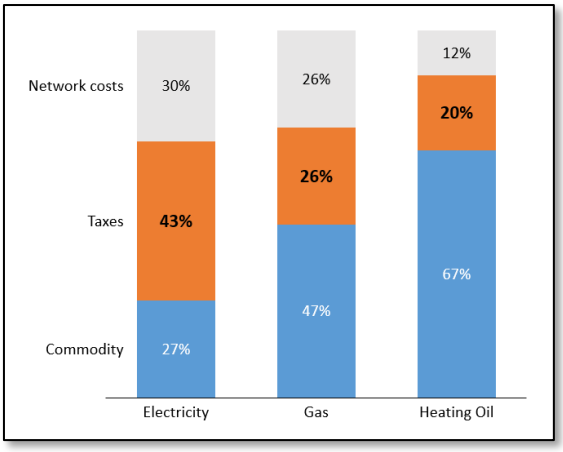
- Heating oil is less taxed in Belgium compared with the EU average. For 1000 liters, Belgian will pay 125€ less taxes (122€ in Belgium vs 247€ for EU average); participating in a difference of 24% of final price.

Figure 2: Comparing prices and tax levels between Belgium and European (EU-28) average. Source: (European Commission, 2018)



- The share of tax in the final price of heating oil is proportionally lower than other form of less harmful energy such as electricity and gas. For the same amount of energy, Belgians will pay 20% of taxes for heating oil, 26% for gas and 43% for electricity.

Figure 3: Comparing composition of final prices of energy vectors for Belgian households[29]. Source: (CREG, 2018) & (FPB - BPF, 2018)



[28] As explained by the OECD (OECD, 2018): "[…] Households are the most significant group of beneficiaries. This is due in large part to the lower taxation of fuel oil used for heating purposes, where the Belgian Government considers the rates applicable to on-road diesel fuel to be the adequate benchmark against which to calculate the resulting tax expenditure. […]".

[29] "Taxes" category includes all the Public Service Obligations, VAT & Excises.

4.3.2. INDUSTRY

Two fossil fuel subsidies were identified at the federal level:

- The value of a reduced excise tax for heating oil and natural gas purchases by specific companies is estimated **at €564 million yearly** by The "*Chambre des représentants - Kamer van volksvertegenwoordigers*"[30],
- A reduced rate of excise tax for petroleum products (diesel fuel, LPG, kerosene) used in commercial and industrial usages is estimated: **€152 million yearly** and covers off-road vehicles and stationary engines operating in construction and civil-engineering sectors.

Box 2. EU ETS

Under the EU Emissions Trading Scheme (EU ETS), economic operators (utilities and industry) are required to obtain emission permits or allowances for each ton of CO2 they emit. Although auctioning is supposed to be the default mode for acquiring emission allowances, close to half the total allowances are still handed out for free. In many countries, free allowances have been granted in excess to the verified emissions. This results in the fact that industry received more free allowances than needed. This has led several academics to refer to this mechanism as "over-allocation" of emission allowances. They estimated generated profits for energy-intensive industries in Belgium worth up to €700 million between 2008 and 2014, or €107.7 million per year (Bruyn et al., 2016).

This amount was not included in our inventory because the overallocation of emission credits is not a direct subsidy from Belgian governments.

[30] The companies for which energy purchases represent at least 3% of the value of their gross output (or for which total energy-tax liabilities represent at least 0.5% of their value added) and the companies that possess an environmental permit.

4.3.3. TRANSPORT

Several fossil fuel subsidies were identified within the transport sector:

- Favourable tax treatment for company cards covering fuel expenses. This is defined as the revenue lost by the state compared to a normal tax treatment of salary[31]. We only take into account the operational expenditure tax treatment of fuel expenses and not the capital expenditure (Capex) tax treatment of a company cars. Estimations of the latter are given in the list of supports identified but not included. More details on methodology can be found in the Appendix. As discussed in the next section, the objective of highlighting this support is not to suggest an increase of salary taxes but to redirect the current support to less harmful energies to promote environmentally friendly behaviours. Total estimated**: €222 million yearly,**
- Fuel tax exemption in aviation: kerosene used in aviation is exempted from fuel taxation. Total estimated: **€210 million yearly,**
- Partial reimbursement of excise taxes on Diesel for freight-transport companies and taxis. This measure exempts diesel fuel used in professional road transport in Belgium from the increases in the rate of excise tax. Total estimated: **€206 million yearly,**
- Favourable tax treatment of diesel compared to gasoline: Excise levels for diesel were historically lower compared with gasoline. This tax treatment has been gradually phased-out over the last years (the level is nowadays similar[32]). **This is estimated at €1,3 billion (yearly average 2014- 2016),**
- At regional level, we identified tax exemptions regarding circulation taxes ("*taxe de circulation - jaarlijkse verkeersbelasting*", "*taxe de mise en circulation - inverkeerstelling*" and "eco-malus"):
    - Utilitarian vehicles currently benefit from a more advantageous fiscal treatment in Wallonia and in Brussels (it has not been detected in Flanders due to a recent reform):
        - Total estimated for Brussels: **€10,5 million yearly,**
        - Total estimated for Wallonia**: €53 million yearly,**
    - There is no eco-malus in Brussels. Total estimated: **€29 million yearly,**
    - There is an exemption of the "Tax on machine distributing liquid or gaseous fuel" on "gasoline installations". Total estimated: **€ 84 000 yearly.**
- Fuel tax exemption for LPG and natural gas used as motor fuels: exempts the use of natural gas and LPG as motor fuels from excise tax (no estimates available),
- Fuel tax exemption for rail transport: exempts diesel fuel and kerosene used in rail transport from the excise tax that normally applies (no estimates available),
- Fuel tax exemption for inland navigation: excise tax exemption for petroleum products for inland navigation (no estimates available).

[31] It is composed of differences in Personal Income Tax, Social Security Costs and Corporate Tax. The calculation can be found in the Excel sheet attached to this study.

[32] It has been gradually phased-out since October 2018 (more info is available at https://www.petrolfed.be/nl/maximumprijzen/achtergrondinformatie/accijnzen-op-motorbrandstoffen-het-kliksysteem).

Box 3. Company cars

This study only estimates the value of subsidies linked to fossil fuel company cards provided to employees as it directly stimulates the consumption of fossil fuels. Estimations for company cars fiscal treatment were not performed in this study as it is only indirectly linked to fossil fuel consumption. It is valuable to note that external studies[33] estimated company cars subsidies between €900 million and €3,7 billion.

Many stakeholders including international institutions (OECD, UE, IEA), industrial Federations (VBO-FEB) and economists[34] are unanimous: the Belgian company cars system needs a reform. The reasons are linked to economic (congestion), health (air quality) and climate (GHG-emissions) concerns. A reform has been introduced in 2018 but has not delivered significant results yet.

This section outlines recommendations to be included in the next reform packages. The objective should be to gradually put an end to the tax benefits for company cars and fossil fuel cars as an extra-pay benefit and to replace them with less damaging forms of remuneration (see our recommendations here below for more details).

This is even more pressing as the Belgium system nowadays results in more kilometres driven a year than in neighbouring countries. According to FPS mobility, in 2014, Belgian cars drove on average 6% kilometres more than Dutch cars, and 7,6% more than French[35]. Fuel cards and company cars are of course not the only cause of this difference, but it does encourage driving.

We provide the following recommendations regarding the subsidy provided through the favourable tax treatment of fossil fuel company cars:

- Limit the use of fossil fuel company cards for other purposes than professional travels. Precautions need to be taken regarding the protection of Belgian salaries competitiveness (Lefebvre, 2008) (de Callatay et al., 2015),
- Initiate a large tax shift reform that transfers fiscal pressure on carbon and energy rather than labor. It needs to ensure that (fossil fueled) car- and fuel-salaries are not fiscally interesting anymore for organizations. One possibility is to increase the 'Voordeel van Alle Aard – Avantage de Toute Nature' linked to company cars and decrease the deductibility of costs linked to private usage (Bienstman, 2017),
- Whilst progressively suppressing company cars interesting fiscal treatment, swiftly limit the selection of anything else than low-emissions vehicles as company-cars,
- Ensure the deployment of large coordinated plan in infrastructure to foster credible modal alternatives
- More globally, federal government should define a roadmap towards an emission-free car fleet with:
    - a clear target year,
    - the necessary scale-up of the current reforms ("mobility budget" and cash-for-car) to give an edge to alternative low carbon mobility solutions.

[33] (Laine & Van Steenbergen, 2016), (Harding, 2014), (Princen, 2017), (Courbe, 2011), (May, 2017). More details can be found in the appendix on page 34.

[34] (de Callataÿ, de Streel, Lefebvre, & Pestieau, 2015)

[35] (Kwanten, 2016)

4.3.4. AGRICULTURE

The OECD estimates the value of the excise tax exemption on diesel fuel, kerosene, fuel oil, LPG, natural gas, electricity, coal, petroleum coke, and lignite used in agriculture, horticulture, forestry and aquaculture[36]. Total estimation: **€13 million**.

[36] It is based on evolution of the consumption of these fuels in the Belgian agriculture and forestry sector according to IEA.

4.4. COMPARISON WITH OTHER EU MEMBER STATES

Despite numerous fossil fuel subsidy phase-out commitments, many EU member states other than Belgium still provide significant subsidies to fossil fuels. Between 2014 and 2016, 11 EU Member States and the EU institutions spent on average €112 billion a year supporting the production and use of fossil fuels. This support was provided through fiscal support, public finance and investments by SOEs (Gençsü et al., 2017). The latter categories of which (public finance and SOEs investments) are not considered here.

The analysis of subsidies provided in other EU member states as well as of efforts undertaken to phase-out fossil fuel subsidies makes it possible to make cross-country comparisons. This makes it possible to draw lessons from best efforts elsewhere, as well as to provide country-specific recommendations based on these lessons (see Chapter 5 for those recommendations). However, in comparing Belgium to other European countries, it is important to acknowledge different national circumstances, such as the share of fossil fuels in the energy mix, and the country specific approaches required to phase out fossil fuel subsidies.

4.4.1. LEVEL OF FOSSIL FUEL SUBSIDY TRANSPARENCY

Whereas a number of European countries have begun to report regularly or irregularly on fossil fuel subsidies, Belgium does not regularly report on its fossil fuel subsidies (Whitley et al., 2018). This means that Belgium is lagging behind these fellow EU countries when it comes to transparency on fossil fuel subsidies. Germany regularly reports on fiscal support, including in the biannual "Subventionsbericht der Bundesregierung" (Subsidy Report of the Federal Government) and the German Environment Agency report on environmentally harmful subsidies (with the latter adopting a different methodology; Gençsü et al., 2017).

Italy, France and Sweden also have started to report on their fossil fuel subsidies, albeit irregularly. In 2016, Italy launched the "Catalogo dei Sussidi Ambientali Dannosi e Favorevoli", its first inventory of environmentally harmful and beneficial subsidies (Gençsü et al., 2017). In 2017, France's Ministry of Environment, Energy and the Sea published an environmental taxation report, including fiscal incentives to energy and transport (French Ministry of Environment, Energy and Sea, 2017). Also in 2017, the Swedish Environmental Protection Agency (Naturvårdsverket) published a report on subsidies causing environmental damage (Naturvårdsverket, 2017). Belgium can look at these publications as examples for its own reporting efforts.

In addition, New EU legislation on 'Governance of the Energy Union Regulation' might help Belgium to improve transparency as well as to undertake concrete action to phase-out fossil fuel subsidies [37]. Under the regulation, EU member states should report on their fossil fuel subsidy phase-out plans as a part of their NECPs, including national and regional policies, timelines and measures to this end. Under the new governance of the Energy Union regulations all EU Member States will develop these ten-year integrated NECPs starting with the period 2021 to 2030[38].

4.4.2. SCALE OF SUBSIDIES AND KEY SECTORS SUPPORTED

When looking at other EU member states, in this case Germany, Sweden and the Netherlands, we find that the annual average fossil fuel subsidies in the form of budgetary expenditure and tax expenditure provided in 2014 to 2016 ranged from €4.0 billion in Belgium and €4.4 billion a year in the Netherlands to €13.2 billion in Sweden (see Appendix; Gençsü et al., 2017). The larger economy of Germany provided a higher level of subsidies, estimated at an annual average of €33.3 billion in 2014 to 2016 (Gençsü et al., 2017). It is important to note that these absolute subsidy values do not say anything about the respective performances of these countries on fossil fuel subsidies, as the level of support typically varies significantly depending on the size of an economy, the presence of fossil fuel resources in a country, and the share of fossil fuels in the energy mix.

[37] Under the regulation, EU MS are required to report on their fossil fuel subsidy phase-out plans as a part of their National Energy and Climate Plans (NECPs), including national policies, timelines and measures to this end. All EU Member States will have to develop these ten-year integrated NECPs starting with the period 2021 to 2034.

[38] Draft NECPs need to be submitted in 2018 and to be final by 1 January 2019.

Belgium's subsidies to fossil fuel consumption are significant and reach similar levels as the consumption subsidies provided in comparator countries.

Across all countries, the transport sector was one of the main beneficiaries of national subsidies, at €2.0 billion a year in Belgium, €3.5 billion a year in The Netherlands and €1.1 billion in Sweden[39]. Transport subsidies were much higher at €18.9 billion in Germany (Gençsü and Zerzawy, 2017b). These countries echo the general picture across Europe in those years (Gençsü et al., 2017).

The type of transport support provided, however, varies widely across countries. In the Netherlands, major support is provided for the use of fuels in aviation and waterway transport, at €3.5 billion a year (Ministerie van Financien, 2017). Sweden's and Germany's largest support is for the use of diesel, equivalent to €0.8 billion and €8 billion a year, respectively (OECD, 2015). In Germany, tax relief for commercial aviation fuels were also heavily subsidized (more than €7.5 billion in 2016; Gençsü and Zerzawy, 2017b). In Belgium, diesel fuel tax exemptions and rebates amount to €351 million a year, while the fuel tax exemption for the use of kerosene in aviation costs the Belgian governments an estimated €210 million a year. Belgium's favourable tax treatment of company fuel cards amounts to €222 million in support a year.

This suggests that across the EU, beyond Belgium, fiscal incentives in the transport sector need to be reformed to support climate goals. Previous reform efforts have shown that communication about reforms and the involvement of stakeholders in the process are crucial ingredients for success. From a sectoral perspective in Sweden, phasing out the differential tax treatment of diesel and petrol fuel will require strong communication with the public. In the Netherlands, increasing taxation on aviation and maritime transport will require strong communication with the maritime and aviation sectors, as well as consumers affected by any price hikes and, because of these sectors being transboundary, coordination at the EU level.

One of the other main beneficiaries of support across Sweden, the Netherland and Germany is fossil fuel-based electricity production (with numbers representing a pro rata calculation of fossil fuel contributions to electricity). This is estimated at €280 million year in Sweden, €513 million in the Netherlands and €1.4 billion in Germany (2014-2016 average; see Appendix; van der Burg and Runkel, 2017; Gençsü and Zerzawy, 2017a). In this study, we were not able to identify the support provided to electricity production in Belgium based on fossil fuels, although a number of sources suggest that these subsidies do exist.[40] It is worth noting that as European countries' energy sectors decarbonize, support to electricity infrastructure would instead contribute to low carbon objectives.

Some of the reviewed countries are already undertaking some efforts to end harmful fossil fuel subsidies and particularly in the transport sector. Belgian governments began diesel reforms to increase the tax on diesel car registration in 2012, also increasing diesel fuel taxation to eliminate the tax gap with gasoline (VRT, 2016; Fleet Europe, 2018). In its efforts to improve congestion and health in cities, the government has also introduced a new law providing a 'mobility budget' to encourage those with company cars to switch to an electric vehicle or public transport (Posaner, 2018).

In a similar trajectory to Belgium's own reforms, the Netherlands phased out diesel tax breaks - used to support the heating, agriculture, railway, industrial and commercial sectors – with the exception of red diesel in 2013 (van der Burg and Runkel, 2017b). Political justifications for the reform communicated that these were environmentally harmful subsidies which were costly to monitor and had been subject to fraud (OECD, 2015). At the same time, complementary measures to support fuel economy and low carbon vehicles were introduced. These resulted in The Netherlands achieving the lowest carbon dioxide emissions from new cars across the EU in 2013 (at 109g per km; Crisp, 2014). In addition, in 2019, the country plans to introduce annual road taxes for polluting diesel passenger cars and vans to further realise its decarbonization objectives (Green Budget Europe, 2017). In a similar move, France is also taking steps to shrink the taxation gap between diesel and petrol by 2021 (Worrall and Runkel, 2017).

So, whilst Belgium is lagging behind several EU member states on transparency, it does not subsidise fossil fuel production (unsurprising because Belgium is not a fossil fuel producing country), but it strongly subsidises

[39] van der Burg and Runkel, 2017b; Gençsü and Zerzawy, 2017a

[40] IEA, 2016

consumption. As with many other EU countries, subsidies are highest in the transport sector despite efforts to tackle diesel subsidies. In the case of aviation, coordination at EU level is essential.

5. RECOMMENDATIONS

This section provides high-level recommendations for the Belgian governments. Most of these recommendations are backed by various international institutions such as, including IMF (2015), OECD (OECD, 2018), IEA (IEA, 2016) and the European Commission (Princen, 2017), amongst others.

5.1. IMPROVE TRANSPARENCY AND DEFINE A ROADMAP FOR PHASE-OUT

As highlighted, transparency on fossil fuel subsidies should be improved in Belgium. The inventory of tax expenditures that is available online[41] is not accompanied by raw data or a methodology used to define the number. Currently, information on Belgium's fossil fuel subsidies is scattered across regional agencies, administrations or institutions. The computation of one subsidy usually requires extensive research and consultations to ensure robust estimations. A sub-set of EU Member States are already reporting regularly on their fossil fuel subsidies. Belgium can look at these reports as examples.

Despite numerous phase-out commitments and a lack of transparency, this study shows that Belgium still spends large amounts of public money on fossil fuel subsidies in Belgium. In addition to taking steps to increase transparency, the Belgium governments should define a clear strategy to phase-out its fossil fuel subsidies with an ambitious target year, respecting Belgium's past commitments. Redirecting those budgets towards the energy and climate transition should be part of the strategy – especially regarding social aids: those should not simply be removed but redirected to support the energy transition and social security.

New EU legislation on 'Governance of the Energy Union Regulation' might help Belgium to improve transparency as well as to undertake concrete action to phase-out fossil fuel subsidies. Under the regulation, EU MS are required to report on their fossil fuel subsidy phase-out plans as a part of their National Energy and Climate Plans (NECPs), including national policies, timelines and measures to this end[42]. All EU Member States will have to develop these ten-year integrated NECPs starting with the period 2021 to 2034.

[41] Such as the *« Inventaire 2016 Des Exonérations, Abattements Et Réductions Qui Influencent Les Recettes De L'État - Inventaris 2016 Van De Vrijstellingen, Aftrekken En Verminderingen Die De Ontvangsten Van De Staat Beïnvloeden*

[42] In section 3.1.3.vi.a of the NECPs, Member States have to list national policies, timelines and measures planned to phase out energy subsidies, including for fossil fuel. In section 4.6.iii, Member States will have to provide a description of energy subsidies, including for fossil fuels. A number of criteria that should be met for the inclusion of subsidy phase-out in the NECPs to be effective include (i) an end date and timeline/trajectory for ending support to fossil fuels (including direct support, tax expenditure, public finance and SOE investment) plans for monitoring progress on fossil fuel subsidies phase-out (ii) synergies with linked efforts on carbon pricing, just energy transition, stranded assets, health/air pollution to ensure policy coherence coordination with parallel processes (national budgets, public finance institution policies, Paris Agreement, SDGs, G7, G20)

Recommendations to improve fossil fuel subsidy transparency to support phase out

This study's first and foremost recommendation is to increase transparency on Belgium's fossil fuel subsidies by publishing a yearly report on Belgium's fossil fuel subsidies. This will allow robust monitoring. It includes the following actions:

- Belgium regional and federal administrations define a common standard for reporting fossil fuel subsidies. The objectives should be to allow cross-year comparison and to facilitate the centralization of data at national level accessible through the already existing open-data portal.
- Belgium can look at other member states as examples for best practices on reporting initiatives
    - Germany regularly reports on fiscal support, including in the biannual Subventionsbericht der Bundesregierung (Subsidy Report of the Federal Government) and the German Environment Agency report on environmentally harmful subsidies (with the latter adopting a different methodology; Gençsü et al., 2017),
    - France's Ministry of Environment, Energy and the Sea published in 2017 an environmental taxation report, including fiscal incentives to energy and transport (French Ministry of Environment, Energy and Sea, 2017),
    - Italy launched in 2016 the the Catalogo dei Sussidi Ambientali Dannosi e Favorevoli, its first inventory of environmentally harmful and beneficial subsidies (Gençsü et al., 2017),
    - The Swedish Environmental Protection Agency (Naturvårdsverket) published in 2017 a report on subsidies causing environmental damage (Naturvårdsverket, 2017).

The second is to develop a clear phase-out roadmap with precise actions and milestones. This roadmap should meet at least the following criteria:

- An end date and timeline for ending all government support to fossil fuels aiming at respecting Belgium's past fossil fuel subsidy phase-out commitments, including tax reforms targeting all sectors and the introduction of a carbon price,
- Plans for monitoring progress on fossil fuel subsidy phase-out efforts,
- Concomitant complementary measures to support groups negatively affected by subsidy reforms. These will need to be targeted, transparent, temporary and support emission reduction commitments,
- Synergies with linked efforts on carbon pricing, just energy transition, stranded assets, health and air pollution to ensure policy coherence,
- Coordination with parallel processes at the national and international level (national budgets, public finance institution policies, NECPs, Paris Agreement, SDGs, G7 and G20).

Although this study urges for reforms, it also highlights the importance of ensuring a just energy transition. This study does not recommend to stop providing aids to low-income citizens, instead it recommends Belgian governments to gradually re-direct harmful subsidies to more sustainable forms of government support.

Regional and national government could use the NECP process as an opportunity for starting to regularly report on fossil fuel subsidies and track progress on phase-out.

5.2. CARBON PRICING

The recommendations of this study echo the options given in the conclusion document from the Belgian National Debate on Carbon Pricing[43] : The Belgian authorities should introduce a carbon price through a significant reform of the current system. This reform needs to consider the favourable tax treatment and budgetary support of fossil fuel as listed in this study.

The "Yellow Vests" protests show that carbon pricing alone will not work. Compensatory measures for low-income households and severely impacted businesses needs to be carefully designed, communicated and planned to minimize the income impact whilst promoting an environmentally friendly behaviour.

The fact that environmental taxes in Belgium are among the lowest in Europe (Belgium ranked 21st of EU member states in 2016)[44] reinforces the message that policies need to be improved to effectively participate in tackling climate change.

Recommendations

- Commit to the introduction of carbon pricing during the next legislature,
- Use carbon pricing as an opportunity for a larger tax reform, with potential reduction in labor taxes for example,
- Where necessary, introduce concomitant compensation measures for negatively impacted groups, especially low-income households that not only redistribute the new revenues from this tax but also favor the energy transition,
- Carefully design the phase-in of carbon pricing policies and phase-out of fossil fuel subsidies: identify and specify the risks of "carbon leakage" before providing exonerations/advantages to any industries.

[43] (Federal Public Service Health, Food Chain Safety and Environment, 2018) Available here : https://www.climat.be/files/2615/3268/2882/National_Carbon_Pricing_Debate_-_Final_Report.pdf

[44] Fiscal incomes from eco-taxes represented 2.2% of Belgium GDP vs an average of 2.4% in EU. (Eurostat, 2018)

5.3. RECOMMENDATIONS FOR HEATING (RESIDENTIAL AND TERTIARY) SECTOR

Before formulating any recommendations, it is important to note that the tax treatment of heating oil in Belgium is favourable compared with EU neighbours: Belgian households pay (tax included) €724 for 1000 litres of heating oil compared with €947 on average in the EU (total difference: €223 of which €14 (6%) linked to the difference of commodity price only) (European Energy Observatory, European Commission, 2018).

We provide the following recommendations regarding subsidies provided to heating:

Recommendations

To improve energy efficiency in heating, this fossil fuel subsidy should be progressively removed, while taking into account the situation of low-income households:

- The level of excise for heating gasoil (both for professional and residential use) needs to be increased over the years through, for example, the introduction of a carbon price,
- Accompany the excise increase with complementary measures to tackle distributive issues and energy transition. They can include:
  - Support deep building renovation (improving buildings energy efficiency),
  - Promote low-carbon technologies in heating,
  - Review the taxes on electricity to favor the shift to low carbon electricity, by shifting low taxes on heating oil to lowered taxes on electricity. This will need close cooperation between the federal level and the regions,
  - Lump-sum transfer to people at risk of energy poverty.
- Regulatory measures to limit the installation of equipment consuming such fuel should also be envisaged.

This can help to significantly reduce heating bills for the long-term (through deep renovation), reduce the costs of these support measures for the government, as well as help to reduce the climate impact of energy-inefficient buildings.

5.4. RECOMMENDATIONS FOR THE INDUSTRY SECTOR

We provide the following recommendations regarding subsidies provided to industry, through reduced excise taxes for heating oil and natural gas purchases and reduced excise taxes for petroleum products to industry:

Recommendations

- The level of excise for heating gasoil (both for professional and residential use) needs to be gradually increased over the years through, for example, the introduction of a carbon price associated with complementary measures,
- Complementary measures should be limited to sectors where there is a risk of displacing the activity and should gradually be replaced by support for lower carbon technologies where it is feasible. The recommendation regarding the tax shift from taxing labor and electricity to taxing fossil fuel usage suggested above should also be considered,
- Compensation for emission costs should use the emission factor that corresponds to the actual energy mix for electricity generation (imports included),
- The risk of carbon leakage and the potential for efficiency improvement needs to be addressed on a case by case basis before allocating those amounts. They should gradually be re-directed towards aids for low-carbon technologies and energy efficiency improvements.

5.5. RECOMMENDATIONS FOR THE TRANSPORT SECTOR

5.5.1. FAVOURABLE TAX TREATMENT FOR COMPANY CARS AND FUEL COSTS

See box 3 page 15.

5.5.2. FUEL TAX EXEMPTION IN AVIATION: KEROSENE USED IN AVIATION IS EXEMPTED FROM FUEL TAXATION

The kerosene used in the aviation sector is currently exempted from any fuel taxation. The numbers provided in this study are taken from a research by Transport & Environment[45] that applied a 0.33€/litre fuel tax (legal minimum diesel tax in the EU) and calculated foregone revenues for EU Member States based on this benchmark. It should be noted that this estimation is relatively conservative when compared with the actual tax rate of gasoline or diesel in Belgium (~€0,60 per litre in 2018).

Besides, as in most European countries, plane tickets in Belgium are VAT exempted (Italy, France, Spain, Portugal and Germany being exceptions for intra-country flights)[46]. A study made by Transport & Environment in 2017 shows that "the total estimated revenues from applying a 15% VAT to all domestic, intra and extra EU flights tickets is some €17bn." According to their estimation, the potential for Belgium is ~€400 million lost revenue (Transport & Environment 2017). While this VAT exemption is not a direct subsidy to fossil fuels, it does indirectly increase fossil fuel consumption at it stimulates air travel.

We provide the following recommendations regarding subsidies provided through fuel tax exemption in aviation:

Recommendations

This topic goes beyond the current levers of Belgium and show how pressing is climate-focused fiscal coordination across all EU member states. Belgian political leaders are encouraged to defend the following recommendations at European level.

- The introduction of tax on kerosene consumption in, at least, intra-EU flights. Beyond environmental considerations, the main arguments being that "it is allowed since 2003 but has never been enforced by bilateral agreements", "ticket prices are already very low and have fallen dramatically over the last 2 decades, hence those measures are politically defensible" (Transport & Environment, 2017),
- Federal and regional authorities should encourage the introduction of VAT on airplane ticket and more specifically support the VAT reforms that are now underway at the EU. Belgium authorities should encourage measures limiting fiscal competition on this domain between member states.

See Transport & Environment study for more details: "[…] reforms that are now underway to implement the "definitive" VAT regime in 2022 using the "destination" principle to determine VAT payable." Belgium authorities should encourage the "Commission […] to propose the inclusion of both intra and extra-EU air tickets in the negative list under the definitive VAT regime […]"

[45] (Transport & Environment, 2018)

[46] As stated in Ryanair website (translated from French): « No VAT is applied to ticket prices or taxes for international flights. However, for domestic flights in Italy, France, Portugal, Germany and Spain, the rates and taxes displayed include VAT according to the rates charged by the government. » (https://www.ryanair.com/be/fr/informations-utiles/centre-daide/faq/effectuer-une-reservation/cComment-puis-je-obtenir-un-recu-pour-mon-billet-davion consulted on 24th of October 2018)

5.5.3. TAX EXEMPTION FOR FREIGHT, TAXI AND BUSES

The reform of this support measure should be part of a larger energy and mobility efficiency strategy within the transport sector. Regarding the freight sector, we understand this topic goes beyond the current levers of Belgium federal and regional states and hence we encourage Belgian leaders to push those recommendations at European level. We provide the following recommendations:

Recommendations

- Gradually but rapidly abandon the partial reimbursement of excises to taxis (around €0,21 per liter of diesel: 1/3 of current level of excise), and define a clear target year for full phase out this support – this can be done relatively quickly and should be supported by the complementary measures described below),
- Ensure a fair tax treatment of diesel at EU level to avoid fiscal competition and intra-EU carbon leakage. Review freight transport to address potential competitiveness concerns (and hence intra-EU carbon leakage): the federal government should adapt the reimbursement of excises to freight companies based on the final price of diesel in neighboring countries,
- Support the impacted companies, where relevant and necessary, with incentives promoting low-carbon technologies for vehicle and tax alleviations not linked to fossil fuel consumption.

5.5.4. CIRCULATION TAXES IN WALLONIA & BRUSSELS

Circulation taxes ("taxe de mise en circulation - inverkeerstelling" and "taxe de circulation - jaarlijkse verkeersbelasting" and "eco-malus") have many different possible exemptions in Flanders, Wallonia and Brussels. This study only focuses on exemptions and reduction for utilitarian vehicles and those were only identified in Brussels and Wallonia. Other exemptions exist (for "old-timers" for example): although they were not estimated in this study, they should also be addressed when phasing-out fossil fuel subsidies.

Studies that are being undertaken in Wallonia and Brussels to support the reform those taxes are going in the right direction as they seem to be essentially linked to environmental performance of vehicle[47].

We provide the following recommendations regarding the subsidies provided through circulation tax exemptions in Wallonia and Brussels:

Recommendations

- In the short term, to deepen the reform of the "taxe de mise en circulation - inverkeerstelling" and "taxe de circulation - jaarlijkse verkeersbelasting" by taking more into account CO2-emissions,
- To abandon the tax exemption for "vehicles utilitaires" and support professionals impacted with complementary measures promoting the relevant low-carbon technologies,
- To review and question other exemptions (for specific target groups) and gradually switch towards aids promoting low-carbon technologies.

[47] https://www.lecho.be/economie-politique/belgique/wallonie/la-wallonie-etudie-une-hausse-des-taxes-sur-les-grosses-cylindrees/10050719.html consulted on 18th of September 2018

5.5.5. FAVOURABLE TAX TREATMENT OF DIESEL COMPARED TO GASOLINE

This subsidy has been gradually phased-out over the last years and excise levels are now the same. It should be noted that this was achieved not only because of the increase of diesel excises but also because of a decrease of gasoline excise between June and July 2018[48].

This successful phase-out example potentially provides policymakers with key lessons learned can be used when implementing the measures recommended in this document.

We recommend to further reform fuel taxes as (i) their levels can still be subject to decreases and (ii) their level should not be based on their volumes but rather on their carbon emissions and damaging externalities.

Recommendations

- In the short- to medium term, use carbon pricing and increase the level of taxation to provide consumers with (i) the right price-signal for investments and (ii) compensatory measures for the most impacted segments. Recommendations (to avoid activity displacement and carbon leakage for example) for the introduction of such tax can be found in the previous dedicated section and on the conclusions from the National Debate on Carbon Pricing,
- In the long term, diminishing fiscal revenues from excises (or carbon taxes on fossil fuels) could be replaced with the introduction of a smarter tax targeting congestion, air quality issues, CO2-emissions.

5.6. RECOMMENDATIONS FOR AGRICULTURE

As the identified support for the use of fossil fuels in agriculture seems rather low, we suggest that additional research should be done into this support measure.

[48] See https://www.petrolfed.be/fr/lindustrie-p%C3%A9troli%C3%A8re/fiscaliteit/%C3%A9volution-des-taux-daccises-sur-les-principaux-produits-p%C3%A9troliers for more details (consulted on 18th of September 2018)

6. CONCLUSION

This study aims at providing a comprehensive, up to date subsidy inventory (based on the WTO definition) [49], including high-level recommendations for subsidy reform, and lessons learned from subsidy reform efforts elsewhere.

Phasing out fossil fuel subsidies is a critical and necessary step to limit the impacts of climate change, reduce air pollution and facilitate the energy transition. Removing public support for fossil fuels would rebalance our energy markets, and ensure the industry operates on a level playing field with emerging renewable technologies, to provide the same energy services. Ending these subsidies will also allow countries to shift to energy systems of the future in good time, avoiding the risk of stranded assets and lock-in to high carbon technologies, while freeing up government resources for public goods such as health and education.

This study finds that, despite high-level commitments to end fossil fuel subsidies, Belgium spent on average EUR ~4 billion a year on fossil fuel subsidies between 2014 and 2016. This estimate is rather conservative since it focuses only on fiscal policies (favourable tax treatment) and budgetary expenses (direct expenses from the government)[50] and does not cover public finance or investments by SOEs. The current lack of transparency of Belgian governments on fossil fuel subsidies corroborates this statement. The biggest share of the support is provided by the federal government through tax exemptions targeting oil consumption for transport, heating, industries and business.

This study recommends Belgian governments to, firstly, increase transparency by publishing an annual report on fossil fuel subsidies (based on WTO's definition of subsidy). This allows Belgian governments to monitor progress on fossil fuel subsidy phase-out commitments made by the Belgium federal government.

Secondly, this study recommends Belgian governments to develop a clear phase-out roadmap with precise actions and milestones. This roadmap should meet at least the following criteria:

- A timeline for the phase out of fossil fuels that aim to respect Belgium's phase-out commitments, combined with broader tax reforms targeting all sectors (including the introduction of carbon pricing),
- Plans for monitoring progress on fossil fuel subsidy phase-out efforts,
- Complementary measures to support groups negatively affected by subsidy reforms. These will need to be targeted, transparent, temporary and support emission reduction commitments by favouring the low carbon energy transition,
- Synergies with linked efforts on carbon pricing, just energy transition, stranded assets, health and air pollution to ensure policy coherence,
- Coordination with parallel processes at the national and international level (national budgets, public finance institution policies, NECPs, Paris Agreement, SDGs, G7 and G20).

Whilst this study acknowledges the complexity of certain reforms, the IPCC's recent report, 'Global Warming of 1.5C' highlights the urgency of transformational climate action. Climate goals cannot be reached without the phase out of fossil fuel subsidies. As such, the complexity of reforms should not be used as an alibi for political inertia. Belgium should not delay taking ambitious action to meet its fossil fuel subsidy phase-out goals, which would also reap the benefits of freeing up public resources to meet other policy goals, such as in health or education.

In addition, Belgium can play a key leadership role in ending subsidies internationally. Some of Belgium's subsidies identified are driven by favourable tax treatments which require EU collective action. The aviation sector is one of the sectors where more coordination at EU level would benefit both climate goals and EU member states. In working within the EU, Belgium can also promote action within the G7 and the G20. This should include influence over public finance institutions and SOEs, as well as bilateral, European and international institutions funded by European governments, including in the monitoring of reform efforts.

[49] World Trade Organization. See WTO (1994) for more information.

[50] Other categories that fall into the definition of subsidy but were not part of this study: "Public finance" and "Investment from State-Owned-Enterprises" (definition can be found in the chapter "methodology").

7. APPENDIX

7.1. METHODOLOGY DETAILS PER SUBSIDY EXAMINED

7.1.1. HEATING

Fuel reduced excise tax for residential users (heating oil) (€1,121 billion)

Target	Households
Description	A reduced excise tax on fuel oil used for heating relative to excise tax rates applicable to on-road diesel fuel (as this is the adequate benchmark against which to estimate excise tax benefits for fuel oil used for heating by households according to the Belgium government). Tax reductions apply mainly to oil fuel. Estimates for natural gas are not available.
Source of information	OECD (2018) and Chambre des Représentants de Belgique (2018)
Methodology Availability	The details of the assumptions, figures and computations were not found. But numbers found using external sources of information validates the total amount of support found for heating oil. The calculation can be found in the Excel sheet attached to this document. It is estimated that 25% of the Belgian households (1,1m out of the 4,7m households) currently consume on average 2500L of heating oil per year per household. Our current estimation is based on the computation from the Belgian "*Chambre des représentants - Kamer van volksvertegenwoordigers*" which used the excise level of diesel as benchmark. The rationale for this assumption is linked to the fact that heating oil and diesel are similar product[51]. Although heating and transport differ in terms of usage, the low heating oil tax level in Belgium should be questioned.

[51] Diesel and heating oil are not 100% equal but their composition similarity still leads to cases of fraud as reported in the FPB Fédération Pétrolière Belge – BPF Belgische Petroleum Federation website: https://www.petrolfed.be/fr/lindustrie-p%C3%A9troli%C3%A8re/economie/la-lutte-contre-la-fraude

Social tariffs for natural gas and electricity (partly funded by federal government) (€112 million) Heating oil social fund (partly funded by federal government) (€19 million)	
Target	Households
Description	Those subsidies have been identified in the OECD's yearly assessment of fossil fuel subsidies per country. Both subsidies are programs that provides grants to low-income and heavily indebted households to help them pay their energy bills. Funding is tied to consumption levels and is provided by industry and the Belgian government. Numbers reported here are attributable to the government only. It does not include the CPAS fund for supporting access to energy (the public centres for social welfare support low-income and heavily indebted households to ensure energy access) as this support is considered as being a PSO.
Source of information	OECD (2018)
Methodology Availability	The details of the assumptions, figures and computations were not found.

7.1.2. INDUSTRY

Fuel tax reduction for certain professional users (heating oil) (€564M)	
Target	Industry
Description	A reduced excise tax for petroleum products and natural gas purchases by certain professional users. Until 1 January 2015, eligible users included companies for which energy purchases represent at least 3% of the value of their gross output (or for which total energy-tax liabilities represent at least 0.5% of their value added) and those that possess an environmental permit. Tax reductions apply mainly to oil fuel although liquefied oil gas is also taken into account. Estimates for natural gas are not available.
Source of information	OECD (2018) and Chambre des Représentants de Belgique (2018)
Methodology Availability	The details of the assumptions, figures and computations were not found. But numbers found using external sources of information validates the total amount found for heating oil. The calculation used for this estimated can be found in the separated Appendix 2.

Fuel tax exemption for certain commercial and industrial uses (diesel, LPG) (€152M)	
Target	Industry
Description	A reduced rate of excise tax for petroleum products used in certain industrial and commercial activities. Eligible uses include off-road vehicles and stationary engines operated in construction and civil-engineering sectors. Applies to diesel fuel, LPG. No estimates available for LPG.
Source of information	OECD (2018) and Chambre des Représentants de Belgique (2018)
Methodology Availability	The details of the assumptions, figures and computations were not found.

Fuel tax exemption for certain commercial and industrial uses (Kerosene) (€3.5M)	
Target	Industry
Description	A reduced rate of excise tax for petroleum products used in certain industrial and commercial activities. Eligible uses include off-road vehicles and stationary engines operated in construction and civil-engineering sectors.
Source of information	OECD (2018) Chambre des Représentants de Belgique (2018)
Methodology Availability	The details of the assumptions, figures and computations were not found.

7.1.3. TRANSPORT

Favourable tax treatment for company cards fuel costs (€222 million)	
Target	Company cars users
Description	Is defined as the revenue foregone for the state compared to a normal tax treatment of salary. It is composed of difference in Personal Income Tax, Social Security Costs and Corporate Tax. The calculation can be found in the separated Appendix 2.
Source of information	The methodology used has taken inspiration from Princen (2017) and Courbe (2011) but most of the assumption have been re-worked. All the sources used can be found in the separated Appendix 2.
Methodology	To compute the subsidy given by the state (as a tax expenditure) for company cars' fuel, we compare the tax treatment of fuel expense versus the tax treatment of the same amount of money if it was salary. To do that, we sum (1) the social taxes not perceived ("ONSS employeur' and "ONSS employé") (2) the Personal Income tax ("Précompte professionnel") not perceived. We subtract the "positive" effect on Corporate tax due to lower deductibility of fuel cost compared to salary charges. It gives us the amount not perceived by the state due to favourable tax treatment of fossil fuel expenses. Assumptions made have always been explained and their sources have been specified in the Excel spreadsheet supporting this document. We do not consider the effect of VAT and Excises in our calculation.
Phase-out plan	Not known. But alternative measures (“cash-for-car” and “mobility budget”) and measures to reduce the use of fuel cards are being introduced.

Tax exemption for utilitarian vehicles: « Taxe de circulation » (WL & BXL): €45,1 million Tax exemption: no "eco-malus" in Brussels: €29 million Tax exemption for utilitarian vehicles: Taxe de mise en circulation (WL): €12,9 million Tax exemption for utilitarian vehicles: eco-malus in Wallonia: €5,5 million	
Target	Car users
Description	Utilitarian vehicles currently benefit from a more advantageous fiscal treatment in Wallonia and in Brussels (it has not been detected in Flanders due to a recent reform).
Source of information	Statistics from FPS mobility and Federaal Bureauplan: https://www.plan.be/databases/ https://mobilit.belgium.be/sites/default/files/bedrijfsvoertuigenpark_2015_fr.pdf Regional taxes include the following sources: http://www.wallonie.be/sites/wallonie/files/pages/fichiers/bareme_tmc.pdf https://belastingen.vlaanderen.be/belasting-op-inverkeerstelling_vrijstellingen https://finances.belgium.be/fr/particuliers/transport/immatriculation_et_impots/
Methodology	The estimations were done using the revenue foregone method. In a nutshell, the steps to compute the estimations go as follow: • Estimating the level of tax that exempted vehicles should pay, • Comparing this level with their current level of tax, • Multiplying this difference with the number of vehicles exempted. Each tax was treated differently depending on its nature and its region. Exact numbers can be found in the separated Appendix 2 attached to this study. The amount found correspond to ~10% of the total estimated budget for the revenues linked to those taxes.
Phase-out plan	Not precisely known. Reform are underway and seem to incorporate the emissions performances from car used/bought. No details regarding taxation of utilitarian vehicles found.

ESTIMATING SUBSIDY TOWARDS COMPANY CARS AND FUEL CARS

The tax treatment of company cars in Belgium has gained a significant amount of attention over the last years both from international and national organizations. Different studies have been carried out to estimate the value of the tax treatment. Their results vary widely and need to be taken with precautions because of their sensitivity to initial assumptions such as the cost of leasing per kilometres, the number of private/professional kilometres and the types of vehicles considered (May, 2017), etc.

Results and high-level methodologies are described in the table here below.

Table 5: Comparing company cars costs estimations

Organization/author	Estimations	Methodology
(Laine & Van Steenbergen, 2016)	€905 million	Not a "revenue foregone" methodology. Externalities only (congestion, health, etc.)
(Harding, 2014) (OECD)	Between €1,5 billion and €2,8 billion	Lower than €3,55 billion because they only took PIT and ONSS for employer – not for employee.
(Princen, 2017) EU[52]	3,7 billion	Took the result of OECD and add the ONSS employee
(Courbe, 2011) (IEW)	€3,55 billion	Took PIT and SCC for employers and employees into account, but did not take into account the positive effect on corporate taxes
(May, 2017)	€2,175 billion	Similar approach to Courbe (2011) but different assumptions (type of vehicle, leasing cost) and more taxes are taken into account (e.g. effect on VAT)

We consider CAPEX (cots of the car) as equipment and not as purely fuel subsidy even though this support indirectly stimulates the use of fuels.

[52] "Taxation of Company Cars in Belgium – Room to Reduce their Favourable Treatment" (May, 2017)

Fuel tax exemption in aviation (€210M)	
Target	Transport
Description	Fuel tax exemption in aviation: kerosene used in aviation is exempted from fuel taxation.
Source of information	Transport and Environment (2017)
Methodology	The numbers provided here are taken from a research by T&E that applied a 0.33€/litre fuel tax (legal minimum diesel tax in the EU) and calculated foregone revenues for EU Member States based on this benchmark tax level. It should be noted that this estimation is relatively conservative when compared with the tax rate of gasoline or diesel (€0,60 per litter in 2018).
Phase-out plan	Reject the controversial UN carbon offsetting scheme for aviation. Introduce a VAT on tickets, introduce kerosene taxation and promote these measures at EU level – See Transport & Environment for further Recommendations: https://www.transportenvironment.org/newsroom

Fuel tax exemption for freight and taxi (“diesel professional “) (€206M)	
Target	Freight and taxi
Description	Exempts diesel fuel used in professional road transport in Belgium from the increases in the rate of excise tax that came into force on 1 February 2004 and 1 January 2010. Eligible users include taxi drivers, freight-transport companies and private buses companies.
Source of information	OECD (2018) and Chambre des Représentants de Belgique (2018)
Methodology Availability	The details of the assumptions, figures and computations were not found but numbers were validated using excise exemptions level on Federations website[53] and number of vehicles on studies from FPS mobility & environment[54].
Phase-out plan	Not known

[53] https://www.mazoutservice.be/fr/accises/diesel-professionnel , consulted on 18th of September 2018

[54] Kwanten 2016

8. REFERENCES

3E. (2014). *De ware kosten en baten van conventionele en hernieuwbare energie.* Brussels: 3E. Retrieved from https://static1.squarespace.com/static/58da8202579fb36928249bc2/t/58ef458ee6f2e16b6e5a6f8b/1492075922297/2014-05+-+WWF+%26+Eneco+-+De+ware+kosten+en+baten+van+conventionele+en+hernieuwbare+energie.pdf

(2018). *Analysis of budgetary support and tax expenditures.* Paris: OECD .

Bachus, K. (2016). *Vergroening van het belastingstelsel in Vlaanderen, studie uitgevoerd in opdracht van de Vlaamse Milieumaatschappij.* MIRA. Leuven: HIVA-KU Leuven.

Bienstman, M. (2017). *"Voorstel Cash for Car kan eerste stap zijn om salariswagens af te bouwen",.* Brussels: Bond Beter Leefmilieu (from https://www.bondbeterleefmilieu.be/artikel/voorstel-cash-car-kan-eerste-stap-zijn-om-salariswagens-af-te-bouwen consulted on 3rd of October 2018).

Bond Beter Leefmilieu. (2017, February). *FAQ: Geen klimaatgeld voor ExxonMobil*. Retrieved from BBL: https://www.bondbeterleefmilieu.be/sites/default/files/faq_-_geen_klimaatgeld_voor_exxonmobil.pdf

Bruyn. (2016). *Calculation of additional profits of sectors and firms from the EU ETS.* Delft.: CE Delft.

CAN Europe and ODI. (2017). *Phase-out 2020: Monitoring Europe's fossil fuel subsidies.* London: ODI. Retrieved from https://www.odi.org/sites/odi.org.uk/files/resource-documents/11762.pdf

Carbon Tracker Initiative. (2018). *Mind the Gap. : Carbon Tracker Initiative.* Retrieved September 3, 2018, from Carbon Tracker Initiative: https://www.carbontracker.org/reports/mind-the-gap/

Chambre des représentants - Kamer van volksvertegenwoordigers. (2018). *Budget des voies et des moyens pour l'année budgétaire 2018, Annexe, Inventaire 2016 des exonérations, abattements et réductions qui influencent les recettes d'Etat.* Bruxelles: Chambre des représentants - Kamer van volksvertegenwoordigers.

Climact. (2018). *Net zero by 2050: from whether to how.* Brussels: European Climate Foundation.

Courbe, P. (2011). *Voitures de société: oser la réforme.* Namur: IEW. Retrieved from https://www.iew.be/IMG/pdf/voituressociete.pdf

CREG. (2018). *A European comparison of electricity and Natural gas prices for residential and small professional consumers.* Brussels: CREG - Price Waterhouse Coopers.

Crisp, J. (2014, December 19). *Dutch car tax regime leaves Germany far behind in curbing CO2 emissions.* Retrieved from Euractiv: https://www.euractiv.com/section/transport/news/dutch-car-tax-regime-leaves-germany-far-behind-in-curbing-co2-emissions

de Callataÿ, de Streel, Lefebvre, O., & Pestieau. (2015). *Pistes et éclairages économiques.* Brussels: Economic Prospective Club (http://www.moneystore.be/wp-content/uploads/doc/manifeste_action_publique_fevrier_2015.pdf (consulted on 3rd of October 2018)).

Department of Energy & Climate Change (DECC). (2015, August 17). *Freedom of information request.* Retrieved November 21, 2018, from Government Publishing Services: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/455512/FOI_2015_15038_PUB.pdf

European Commission. (2015). *Enhancing comparability of data on estimated budgetary support and tax expenditures for fossil fuels.* Brussels: European Commission. Retrieved from http://ec.europa.eu/environment/enveco/taxation/pdf/201412ffs_final_report.pdf

European Commission. (2017). *Taxation of company cars in Belgium – Room to reduce their favourable treatment.* Brussels: European Commission. Retrieved from https://ec.europa.eu/info/sites/info/files/eb026_en.pdf

European Commission. (2018, September). *Consumer prices of petroleum products inclusive of duties and taxes.* Retrieved from European Commission Web Site: http://ec.europa.eu/energy/observatory/reports/latest_prices_with_taxes.pdf

European Commission. (2019). *Energy prices and costs in Europe.* Brussels: European Commission. Retrieved 01 24, 2109, from https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1548155579433&uri=CELEX:52019DC0001

Eurostat. (2018, 09 11). *Recettes fiscales environnementales.* Retrieved from Eurostat: http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=env_ac_tax&lang=fr

FBP - BPF. (2018). *Evolution d'accises (incl. cotisation énergie) sur les principaux produits pétroliers à partir du 1er janvier 1971.* Brussels: FPB - BPF.

Federaal Planbureau Bureau du Plan . (Oktober 2014). *Het Belgische energiesysteem in 2050: Waar naartoe? Beschrijving van een Referentiescenario voor België.* Brussels: Federaal Planbureau Bureau du Plan .

Federal Public Service Economy. (2017). *Energy: Key data 2016.* Brussels: Federal Public Service Economy.

Federal Public Service Health, Food Chain Safety and Environment. (2018). *Carbon Pricing: Gradually Correcting Prices To Support The Low Carbon Transition.* Brussels: Federal Public Service Health, Food Chain Safety and Environment. Retrieved from https://www.climat.be/files/2615/3268/2882/National_Carbon_Pricing_Debate_-_Final_Report.pdf

Federal Public Service Health, Food Chain Safety and Environment. (2018, 03 01). *Emissions et absorptions de gaz à effet de serre dans les principaux secteurs (1990-2016).* Retrieved from Climat.be - Federal Public Service Health, Food Chain Safety and Environment: https://www.climat.be/files/9815/2164/7581/trends2018-03_tableau-secteurs.pdf

Fleet Europe. (2018). *Diesel excise duty rises in Belgium*. Retrieved from Fleet Europe: https://www.fleeteurope.com/en/features/diesel-excise-duty-rises-belgium

FPB - BPF. (2018, 02 01). *Décomposition des prix maximums actuels*. Récupéré sur Petrolfed: https://www.petrolfed.be/fr/prix-maximums/d%C3%A9composition-prix-maximums-actuels

French Ministry of Environment, Energy and Sea. (2017). *Fiscalité Environnementale: Un état des lieux.* Paris: French Ministry of Environment, Energy and Sea. Retrieved from https://www.ecologique-solidaire.gouv.fr/sites/default/files/Th%C3%A9ma%20 -%20Fiscalit%C3%A9%20environnementale%20-%20Un%20%C3%A9tat%20des%20lieux.pdf

G20. (2018). G20 Meeting of Energy Ministers - Communiqué. *G20 Argentina 2018.* Bariloche: G20. Retrieved from https://g20.org/sites/default/files/media/energy_communique.pdf

G7. (2016). G7 Ise-Shima Leaders' Declaration. *G7 Ise-Shima Summit, 26-27 May 2016.* Ise-Shima. Retrieved from http://www.g8.utoronto.ca/summit/2016shima/ise-shima-declaration-en.pdf

Gençsü, I., & Zerzawy, F. (2017). *Monitoring Europe's fossil fuel subsidies: Germany. :.* London: Overseas Development Institute. Retrieved from https://www.odi.org/sites/odi.org.uk/files/resource-documents/11778.pdf

Gençsü, I., & Zerzawy, F. (2017). *Monitoring Europe's fossil fuel subsidies: Sweden. London:.* London: Overseas Development Institute. Retrieved from https://www.odi.org/publications/10932-monitoring-europes-fossil-fuel-subsidies-sweden

Gençsü, I., McLynn, M., Runkel, M., Trilling, M., van der Burg, L., Worrall, L., . . . Zerzawy, F. (2017). *Phase-out 2020: monitoring Europe's fossil fuel subsidies.* London: Overseas Development Institute. Retrieved from www.odi.org/sites/odi.org.uk/files/resource-documents/11762.pdf

Green Budget Europe. (2017). *Environmental tax reform: some proposals and intentions in the Netherlands for 2017.* Green Budget Europe. Retrieved from https://green-budget.eu/environmental-tax-reform-some-proposals-and-intentions-in-the-netherlands-for-2017/

Green Budget Europe. (2017). *Environmental tax reform: some proposals and intentions in the Netherlands for 2017.* Green Budget Europe. Retrieved from https://green-budget.eu/environmental-tax-reform-some-proposals-and-intentions-in-the-netherlands-for-2017

Harding, M. (2014). *Personal Tax Treatment of Company Cars and Commuting Expenses: Estimating the Fiscal and Environmental Costs.* Paris: OECD.

Hayer, S. (2017). *Fossil Fuel Subsidies.* Brussels: European Parliament.

HEAL. (2017). *Hidden price tags: how ending fossil fuel subsidies would benefit our health.* Brussels: Health and Environment Alliance. Retrieved from https://www.env-health.org/IMG/pdf/healthandenvironmentalliance_hidden_price_tags_report.pdf

IEA. (2010). *Energy Policies of IEA countries: Belgium.* Paris: IEA. Retrieved from https://www.iea.org/publications/freepublications/publication/belgium_2010.pdf

IEA. (2016). *Energy Policies of IEA countries: Belgium.* Paris: International Energy Agency. Retrieved from https://www.iea.org/publications/freepublications/publication/Energy_Policies_of_IEA_Countries_Belgium_2016_Review.pdf

IEA. (2017). *World Energy Outlook 2017.* Paris: IEA. Retrieved from https://www.iea.org/media/weowebsite/2017/Chap1_WEO2017.pdf

IMF. (2015). *How large are global energy subsidies.* Washington DC: International Monetary Fund. Retrieved from https://www.imf.org/en/Publications/WP/Issues/2016/12/31/How-Large-Are-Global-Energy-Subsidies-42940

International Energy Agency (IEA). (2015). *Energy and Climate Change: World Energy Outlook Special Report.* Paris: IEA.

International Energy Agency (IEA). (2016). *Energy Policies of IEA Countries 2016 Belgium Review, IEA Publications, Paris.* Paris: IEA.

IPCC. (2014). *Climate change 2014 synthesis report.* Geneva: IPCC. Retrieved from www.ipcc.ch/pdf/assessment-report/ar5/syr/SYR_AR5_FINAL_full_wcover.pdf

IPCC. (2018). *Global warming of 1.5°C: Summary for policymakers.* Geneva: Intergovernmental panel on climate change.

Kojima, M., & Koplow, D. (2015.). *Fossil fuel subsidies: Approaches and evaluation.* Washington DC: World Bank. Retrieved from https://openknowledge.worldbank.org/bitstream/handle/10986/21659/WPS7220.pdf?sequence=1&isAllowed=y

Kwanten, M. (2016). *Kilomètres parcourus par les véhicules belges en 2015.* Brussels: Service public fédéral Mobilité et Transports.

Laine, B., & Van Steenbergen, A. (2016). *The fiscal treatment of company cars in Belgium: Effects on car demand, travel behaviour and external costs.* Brussels: Bureau Fédéral du Plan.

Massiot, A. (2018, September 12). *Laurence Tubiana : «On peut perdre une bataille mais pas baisser les bras».* Retrieved from Libération: https://www.liberation.fr/planete/2018/09/12/laurence-tubiana-on-peut-perdre-une-bataille-mais-pas-baisser-les-bras_1677936

May, X. (2017). *Analyse du régime actuel des voitures de société.* Brussels: ULB-IGEAT.

Ministerie van Financien. (2017). *Beleidsinformatie 2017.* Brussels: Ministerie van Financien. Retrieved from http://www.rijksoverheid.nl/binaries/rijksoverheid/documenten/rapporten/2017/02/14/beleidsinformatiekaart-2017/Beleidsinformatiekaart+2017.pdf

Naturvårdsverket. (2017). *Potentiellt miljöskadliga subventioner.* Stockholm: Naturvårdsverket. Retrieved from https://www.naturvardsverket.se/ upload/miljoarbete-i-samhallet/miljoarbete-i-sverige/regeringsuppdrag/2017/redovisning-ru-pot-miljosk-subv.pdf

OECD. (2015). *OECD companion to the inventory of support measures for fossil fuels 2015.* Paris: OECD Publishing. Retrieved from www.oecd.org/site/tadffss

OECD. (2018). *Effective Carbon Rates 2018: Pricing Carbon Emissions Through Taxes and Emissions Trading.* Paris: OECD.

OECD. (2018). *Fossil fuel support and other analysis.* Retrieved from OECD: http://www.oecd.org/site/tadffss/data

OECD. (2018). *OECD companion to the inventory of support measures for fossil fuels 2018.* Paris: OECD Publishing. Retrieved from https://read.oecd-ilibrary.org/energy/oecd-companion-to-the-inventory-of-support-measures-for-fossil-fuels-2018_9789264286061-en#page1

Parry, I. (2014). *Getting energy prices right: from principle to practice.* Washington DC: International Monetary Fund. Retrieved from http://www.greenfiscalpolicy.org/wp-content/uploads/2014/11/Getting-Energy-Prices-Right-Full-Publication.pdf

Posaner, J. (2018). *Belgium looks to steer away from company cars.* Politico Website. Retrieved from https://www.politico.eu/article/belgium-company-cars-looks-to-steer-away/

Princen, S. (2017). *Taxation of company cars in Belgium – Room to reduce their favourable treatment.* Brussels: European Commission. Retrieved from https://ec.europa.eu/info/sites/info/files/eb026_en.pdf

Rockström, J., Gaffney, O., Rogelj, J., Meinshausen, M., Nakicenovic, N., & Schellnhuber, H. J. (2017). A roadmap for rapid decarbonization. *Science*, 1269-1271.

Timperley, J. (2017, August 12). *Explainer: the challenge of defining fossil fuel subsidies.* Retrieved from Carbon Brief: https://www.carbonbrief.org/explainer-the-challenge-of-defining-fossil-fuel-subsidies

Transport & Environment. (2018). *How the undertaxed, polluting aviation sector can help fix the EU budget.* Brussels: Transport & Environment. Retrieved from https://www.transportenvironment.org/sites/te/files/publications/2018_02_TE_Own_resources_Aviation_position_paper_final.pdf

Trinomics. (2018). *Study on Energy Prices, Costs and Subsidies and their Impact on Industry and Households.* Rotterdam: Trinomics. Retrieved 01 24, 2019, from https://publications.europa.eu/en/publication-detail/-/publication/d7c9d93b-1879-11e9-8d04-01aa75ed71a1/language-en

UK Parliament. (2017). *Fossil Fuels: Subsidies:Written question - 63284.* London: UK Parliament. Retrieved from http://www.parliament.uk/ business/publications/written-questions-answers-statements/written-question/Commons/2017-02-06/63284/

UK Parliament. (2017). *Fossil Fuels: Tax Allowances: Written question - 63181.* London: UK Parliament. Retrieved from http:// www.parliament.uk/business/publications/written-questions-answers-statements/written-question/Commons/2017-02-06/63181/

UN. (2015). *Sustainable development knowledge platform.* United Nations. New York: UN. Retrieved from https:// sustainabledevelopment.un.org/sdgs

van der Burg, L., & Runkel. (2017). *Monitoring Europe's fossil fuel subsidies: United Kingdom.* London: Overseas Development Institute. Retrieved from https://www.odi.org/sites/odi.org.uk/files/resource-documents/11787.pdf

van der Burg, L., & Runkel, M. (2017). *Monitoring Europe's fossil fuel subsidies: the Netherlands.* London: Overseas Development Institute. Retrieved from https://www.odi.org/publications/10937-monitoring-europes-fossil-fuel-subsidies-netherlands

Vlaams Parlement. (2017). *SCHRIFTELIJKE VRAAG nr. 414 van ROBRECHT BOTHUYNE aan PHILIPPE MUYTERS datum: 8 maart 2017.* Brussels: Vlaams Parlement. Retrieved from http://docs.vlaamsparlement.be/pfile?id=1258221

VRT. (2018, April 12). *30% tax hike on diesel cars in only 3 years.* Retrieved from VRT News Website: https://www.vrt.be/vrtnws/en/2018/04/12/30_tax_hike_on_dieselcarsinonly3years-1-3178598/

Whitley, S., & van der Burg, L. (2015). *Fossil Fuel Subsidy Reform: From Rhetoric to Reality.* London and Washington, DC: New Climate Economy.

Whitley, S., & van der Burg, L. (2015). *Fossil fuel subsidy reform: from rhetoric to reality'.* London: New Climate Economy. Retrieved from http://newclimateeconomy.report/2015/wp-content/uploads/sites/3/2015/11/Fossil-fuel-subsidy-reform_from-rhetoric-to-reality.pdf

Whitley, S., Chen, H., Doukas, A., Gençsü, I., Gerasimchuk, I., Touchette, Y., & Worrall, L. (2018). *G7 fossil fuel subsidy scorecard: tracking the phase-out of fiscal support and public finance for oil, gas and coal.* London: Overseas Development Institut.

World Bank. (2018). *World Development Indicators.* Geneva: World Bank. Retrieved from http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators#

Worrall, L., & Runkel, M. (2017). *Monitoring Europe's fossil fuel subsidies. France.* London: ODI. Retrieved from https://www.odi.org/sites/odi.org.uk/files/resource-documents/11779.pdf

WTO. (1994). *Agreement on Subsidies and Countervailing Measures.* Geneva: World Trade Organization.