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2020

*Document Version:*

Publisher's PDF, also known as Version of record

[Link to publication](#)

*Citation for published version (APA):*

Nowag, J., Mundaca, L., & Åhman, M. (2020). *Fossil Fuels Subsidies in the EU: EU State Aid Rules as Control and Phase out Tools - Opportunities and Estimates*. (1/2020 ed.) (pp. 1-15).

*Total number of authors:*

3

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# LUND UNIVERSITY LEGAL RESEARCH PAPER SERIES

LundLawCompWP 1/2020

Oct 2020

## Fossil Fuel Subsidies in the EU: EU State Aid Rules as Control and Phase Out Tools – Opportunities and Estimates

By

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## **Abstract:**

The paper aims to identify and analyse potential legal avenues for phasing out fossil fuels in the European Union using EU State aid rules. Our analysis of the EU's legal framework reveals that the EU State aid rules would allow the European Commission to effectively target and monitor fossil fuel subsidies. In particular, the requirements for notification, examination, transparency, reporting, and recovery of unlawfully granted aid may be highly useful tools. The legal framework also provides avenues for the EU Commission to start a 'Fossil Fuel Inquiry' to identify and quantify all support for fossil fuels within the EU Member States. Furthermore, the EU State aid rules can also provide civil society with the possibilities to actively lobby for State aid control and offer the court systems as an additional avenue for enforcement. Based on a legal analysis of which fossil fuel subsidies are subject to the EU state aid legal framework and we make a first estimate of the value of fossil fuel subsidies subject to this regime. With due limitations our best estimate suggests that approximately 50—60% of the 112 billion Euro of subsidies in the EU per year which have been identified by the ODI/CAN report can be addressed by EU State aid rules. The analysis of the EU's legal framework for State aid reveals that the EU State aid rules allow the European Commission to effectively target and monitor fossil fuel subsidies. We conclude that despite inherent limitations, the EU state aid toolbox offers various possibilities to the EU to actively advance its climate change policy and comply with its international commitments to reduce fossil fuel subsidies.

**Keywords:** Climate Change, European Union, EU State Aid Rules, Energy Policy, Fossil fuel subsidies

### **Main points & highlights**

- Identifies potential legal avenues for phasing out fossil fuels using EU state aid rules
- Explores the different methods of defining subsidies for fossil fuels
- Contrasts these with the EU definition of State aid
- Provides an overview of and highlights the effectiveness of the EU State aid system
- Estimates that 58 to 69 billion Euros of subsidies can be addressed by the EU State aid regime
- Argues that the EU State regime could be effectively utilised to tackle fossil fuels subsidies in the EU
- Estimates that 58.22 to 69.59 billion Euros of subsidies can be addressed by the EU State aid regime
- Argues that the EU State aid regime could be effectively utilised to tackle fossil fuels subsidies in the EU

# 1. Introduction

The provision of affordable, reliable, and environmentally friendly energy services to all is a key issue for advancing human development and sustainability.<sup>4</sup> Governments have long used subsidies to make energy available at affordable prices to both households and industries. Traditionally these subsidies have gone to fossil energy such as coal, oil, and natural gas.<sup>5</sup> To some extent, this has alleviated energy poverty and fostered industrialisation; however, it has also created a dependence on fossil energy, misallocation of resources, and increased inefficiencies across the energy system (e.g. demand side).<sup>6</sup> There are numerous definitions of fossil fuel subsidies used in international studies that estimate the amount of State subsidies. Subsidies to fossil energy can be directed both to the production and the consumptions of fossil energy. Fossil subsidies are furthermore not restricted to poorer countries or countries with fossil energy assets such as the OPEC but also common in emerging economies and in the OECD as identified by e.g. the 2011 joint report<sup>7</sup> of the OECD, IEA, OPEC, and the World Bank.<sup>8</sup>

From an international perspective, phasing out subsidies to fossil energy is deemed as a cost-effective response to climate change that countries can do in the near to medium term.<sup>9</sup> In 2009 the G20 leaders in Pittsburgh agreed to phase out inefficient fossil-fuel subsidies over the medium term<sup>10</sup> and in the Paris Agreement on climate change adopted in December 2015, all countries agreed to “*making financial flows consistent with a pathway towards low greenhouse gas emissions and climate resilient development*”.<sup>11</sup> Despite strong political momentum, progress towards phasing out fossil subsidies has been slow<sup>12</sup> and the value of fossil-fuel subsidies is still high.<sup>13</sup> A major problem relates

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<sup>4</sup> Johansson TB, Patwardhan A, Gomez-Echeverri L, Nakićenović N. Global Energy Assessment (GEA): Toward a Sustainable Future. Cambridge, UK: Cambridge University Press; 2012

<sup>5</sup> Ibid.

<sup>6</sup> Ibid.

<sup>7</sup> This and other definitions and the relevant estimates are examined in more detail in section 2.

<sup>8</sup> See Joint report by IEA, OPEC, OECD and World Bank on fossil-fuel and other energy subsidies: “An update of the G20 Pittsburgh and Toronto Commitments” Prepared for the G20 Meeting of Finance Ministers and Central Bank Governors (Paris, 14 -15 October 2011) and the G20 Summit (Cannes, 3-4 November 2011) <http://www.oecd.org/site/tadffss/49006998.pdf>.

<sup>9</sup> See eg Jennifer Ellis, The Effects of Fossil-Fuel Subsidy Reform: A Review of Modelling and Empirical Studies (March 1, 2010) available at SSRN: <https://ssrn.com/abstract=1572397>; Jean-Marc Burniaux<sup>1</sup>, Jean Château<sup>1</sup>, Rob Dellink, Romain Duval, Stéphanie Jamet, “The Economics of Climate Change Mitigation: How to Build the Necessary Global Action in a Cost-Effective Manner”, *OECD Economics Department Working Papers*, No. 701, OECD Publishing, Paris (2009) <http://dx.doi.org/10.1787/224074334782>. See also De Coninck, et al., ‘Strengthening and Implementing the Global Response’ in: Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty (2018) [https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15\\_Chapter4\\_Low\\_Res.pdf](https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15_Chapter4_Low_Res.pdf). More critical recently, Jessica Jewell, David McCollum et al., ‘Limited emission reductions from fuel subsidy removal except in energy-exporting region’s (2018) 554 Nature 229–233 doi:10.1038/nature25467 and Erickson, P., van Asselt, H., Koplrow, D. et al. Why fossil fuel producer subsidies matter. Nature 578, E1–E4 (2020). <https://doi.org/10.1038/s41586-019-1920-x>.

<sup>10</sup> See G20 Leaders Statement: The Pittsburgh Summit (September 24-25, 2009, Pittsburgh) <http://www.g20.utoronto.ca/2009/2009communiqu0925.html>.

<sup>11</sup> See Paris Agreement (2015)

[https://unfccc.int/files/meetings/paris\\_nov\\_2015/application/pdf/paris\\_agreement\\_english\\_.pdf](https://unfccc.int/files/meetings/paris_nov_2015/application/pdf/paris_agreement_english_.pdf).

<sup>12</sup> See eg Jun Rentschler and Morgan Bazilian, Reforming fossil fuel subsidies: drivers, barriers and the state of progress Climate Policy 2017: 981-914.

<sup>13</sup> See eg the numbers for 2018 of the IEA, <https://www.iea.org/commentaries/fossil-fuel-consumption-subsidies-bounced-back-strongly-in-2018>

to the political feasibility of phasing out of fossil fuel subsidies<sup>14</sup> that have been implemented with good intentions from the start such as reducing poverty or fuelling much needed industrialisation. Initiating and implementing new political initiatives for addressing fossil fuels subsidies take time as these initiatives normally suffer from, for example, capture of legislature, enforcements issues and lack of acceptability.<sup>15</sup>

Despite the EU's ambition to phase out fossil subsidies, these still remain. In the European Union, fossil fuels subsidies have been estimated to stand at 112 billion Euro per year between 2014-2016 by ODI/CAN based on subsidies of the 11 largest EU economies.<sup>16</sup> The ODI/CAN report is by no means the only study and other reports have estimated fossil fuel supports numbers between 39 to over 200 billion per year.<sup>17</sup> The EU been criticised for missing accountability, mechanisms, and limited action to remove subsidies. For example, the EU has for example introduced an obligation to draw National Energy and Climate Plans which should include national submissions on the levels of fossil fuel subsidies and ways to reducing them, however these obligation have hardly been successful or not even sufficiently complied with.<sup>18</sup>

A relatively unexplored route for phasing out fossil subsidies is the extent to which already existing legal frameworks can be used effectively for such a purpose. One exception is a recent paper that explored the possibility of using the WTO system on subsidies to challenge some of the fossil fuel subsidies.<sup>19</sup> While the current state of the WTO system might raise concerns about whether the whole system will continue to work effectively<sup>20</sup>, other issues with a WTO approach exist. One downside with of the use of the WTO system is reliance on States to bring a challenge against another State. This system has inherent political or legal uncertainty and the risk of a retaliation between the State plays can play an important role.<sup>21</sup>

While exploring the use of effective, already existing legal frameworks is rare in the literature, this paper proposes a novel route with regard to existing legal frameworks in the EU. The use of the highly effective rules on State aid in the EU in the context of fossil fuel subsidies. While ODI/CAN highlights this a possibility and the Commission Guidelines on State aid for environmental

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<sup>14</sup> Jakob Skovgaard and Harro van Asselt, 'The Politics of Fossil Fuel Subsidies and Their Reform' in Skovgaard and van Asselt, *The Politics of Fossil Fuel Subsidies and their Reform* (CUP 2018) <https://www.cambridge.org/core/books/politics-of-fossil-fuel-subsidies-and-their-reform/B8CB7D383F33AD9AF9CC82EB50A74DE5>

<sup>15</sup> In general see Skovgaard and van Asselt, *The Politics of Fossil Fuel Subsidies and their Reform* (CUP 2018) <https://www.cambridge.org/core/books/politics-of-fossil-fuel-subsidies-and-their-reform/B8CB7D383F33AD9AF9CC82EB50A74DE5>

<sup>16</sup> Ipek Gençsü, Maeve McLynn, Matthias Runkel, Markus, Trilling, Laurie van der Burg, Leah Worrall, Shelagh Whitley, and Florian Zerkawy 'Europe Overseas Development Institute and CAN Europe Report - Phase-out 2020: Monitoring Europe's fossil fuel subsidies' (28 September 2017) <https://www.odi.org/sites/odi.org.uk/files/resource-documents/11762.pdf>.

<sup>17</sup> See Policy Department A for the Committee on Environment, Public Health and Food Safety of the European Parliament (2017eIP/A/ENVI 2016-18-REV) [https://www.europarl.europa.eu/RegData/etudes/IDAN/2017/595372/IPOL\\_IDA\(2017\)595372\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/IDAN/2017/595372/IPOL_IDA(2017)595372_EN.pdf)

<sup>18</sup> Laurie van der Burg, Markus Trilling, Ipek Gencsu, 'Fossil fuel subsidies in draft EU National Energy and Climate Plans' Working and discussion papers (September 2019) <https://www.odi.org/publications/11430-fossil-fuel-subsidies-draft-eu-national-energy-and-climate-plans>.

<sup>19</sup> On the fossil fuels subsidies and the option and challenges of using the WTO system see Cleo Verkuijl, Harro van Asselt, Tom Moerenhout, Liesbeth Casier, Peter Wooders, 'Climate Strategies: Tackling Fossil Fuel Subsidies through International Trade Agreements (Nov 2017) <http://climatestrategies.org/wp-content/uploads/2017/11/CS-Report-FFS-2017.pdf>.

<sup>20</sup> P.J. Kuijper, 'From the Board: The US Attack on the WTO Appellate Body' (2018) 45:1 *Legal Issues of Economic Integration*, 1–11.

<sup>21</sup> Aydin B. Yildirim Arlo Poletti J. Tyson Chatagnier Dirk De Bièvre, 'The Globalization of Production and the Politics of Dispute Initiation at the World Trade Organization' (2018) 9:S2 *Global Poly - Special Issue: New Perspectives on Global Value Chains: Bringing Institutions Back In* 38-48.

protection and energy mention climate change and the importance of State aid,<sup>22</sup> this avenue has not yet been sufficiently explored. The paper aims to fill this gap and provides a first attempt in analysing the potential for using the EU State aid rules in the efforts to phasing-out fossil fuels subsidies in the EU. The EU's State aid control mechanism is already agreed upon, has an already established enforcement system which does not depend on the political will and agreement amongst member states. Instead, we argue that this existing tool can be used actively to reduce fossil fuel subsidies via adjustments by the EU's executive (the European Commission) to monitor and effectively target these subsidies. Furthermore, the EU State aid rules can provide civil society with the possibilities to actively lobby for State aid control<sup>23</sup> and also to use the court systems as enforcement tools. From a methodological point of view, our paper is based on a mixed methodology of legal dogmatics and probabilistic estimates (details in section 2). As a first step, the paper surveys the different definitions of fossil fuel subsidies, the order of magnitude of current estimates and discrepancies that result from the different conceptualisations (section 3). Based on this we highlight in section 4 the potential effectiveness of the EU State aid regime and what kind of fossil fuel subsidies can be targeted by EU state aid law. We then estimate the amount of fossil fuel subsidies that EU State aid rules can potentially address and explore what this means in practice (section 5). The paper concludes by giving a rough estimate of how much of the identified fossil subsidies that could be targeted by state aid regulation and explores ways of implementing a potential phase out.

## 2. Methodology

The paper uses a mixed methodology influenced by legal methods addressing the interpretation and application of law. While interpretation and thus the establishment of what is 'the law' is the subject of legal science, the application of law to the facts is the realm of legal practice.<sup>24</sup> Legal science uses the doctrinal method, also called 'legal doctrine', to systematise and interpret the law to achieve a coherent set of rules and principles at an abstract level with the aim of establishing what is '*the law*'.<sup>25</sup> In this paper, we first use the doctrinal method to establish the law, or *de lege lata* with regard to EU State aid law. The second step in a legal analysis is the application of this framework to the relevant fact in a concrete case, usually the domain of legal practice. This element is where the paper diverges from classical legal methodology. Instead of the facts of a concrete case or cases, the paper uses estimates and categories of subsidies established Europe Overseas Development Institute and CAN Europe's report<sup>26</sup> as a starting point. We use the ODI/CAN report as it is based on the WTO definition of subsidy (for details on the different definition see section 3) which is close to the EU definition of State aid.<sup>27</sup> However, the ODI/CAN report's categories of subsidies and their estimates necessarily contains a level of abstraction and uncertainty. While the report is based on country reports which provide more information on what measures in what country are included for the calculation, this information does not suffice for a definite answer as to whether the measures constitute State aid under the EU rules. Yet, the report

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<sup>22</sup> Guidelines on State aid for environmental protection and energy 2014-2020 [2014] OJ C 200/1 para 3-9.

<sup>23</sup> Possibly in alliance with economic actors that suffer due to the negative effects of subsidies on competition.

<sup>24</sup> Ian McLeod, *Legal Method* (2013 Palgrave Macmillan).

<sup>25</sup> Aleksander Peczenik, 'Scientia Iuris - An Unsolved Philosophical Problem' 3 (3) *Ethical Theory and Moral Practice* 273, 291.

<sup>26</sup> Ipek Gençsü, Maeve McLynn, Matthias Runkel, Markus, Trilling, Laurie van der Burg, Leah Worrall, Shelagh Whitley, and Florian Zerzawy 'Europe Overseas Development Institute and CAN Europe Report - Phase-out 2020: Monitoring Europe's fossil fuel subsidies' (28 September 2017) <https://www.odi.org/sites/odi.org.uk/files/resource-documents/11762.pdf>.

<sup>27</sup> See section 3.



provides the basis to apply the previously established EU State aid rules to estimate the level to which these subsidies are subject to the EU State aid rules as such.

As all legal assessment, the assessment is dependent on the legal and factual framework in the specific case so that measures in one country might be classified differently than in another<sup>28</sup> which is also reflected in the time European Commission takes to analyse measures.<sup>29</sup> To counter this level of abstraction and uncertainty, the paper relies on the authors' EU State aid expertise and experience to determine the likelihood to which the measures contained in the ODI/CAN report are subject to the State aid rules. These estimates of likelihood have been independently verified by three other leading EU State aid law experts. Following the IPCC guidelines for the treatment of uncertainties we use "calibrated language for describing uncertainty" based on "elicitation of expert views"<sup>30</sup> and come to conservative estimates which build upon the outcomes from the doctrinal method. With the aim to estimate the portion of fossil fuels subsidies that can be potentially phased out and with due limitations, our paper distinguishes between subsidies that are 'very likely' (80-90% probability), 'likely' (50-60% probability), probability) 'less likely' (20-30% probability), and 'least likely' (0-5% probability) to be subject to the EU's State aid regime. Based on these categories the total of subsidies subject EU State aid rules are then estimated. We understand these estimates as conservative in that they provide an underestimation of the total level of fossil fuel subsidies subject to the EU State aid rules. This is due to the following reasons: first, the expert views are conservative estimates. Second, the ODI/CAN report's figures are only based on the fossil fuel subsidies of the 11 biggest economies in the EU, rather than all 27 EU Member States.

### 3. What are fossil fuel subsidies?

#### 3.1. Main conceptual issues

Historically, there have been numerous discussions and disagreements about the conceptualization or definition of energy subsidies (and fossil fuels subsidies as sub-category).<sup>31</sup> In the literature, conceptual elements of what constitutes an energy (or fossil-fuel) subsidy are vast and sometimes the terms energy subsidies and fossil-fuels subsidies are used interchangeably.<sup>32</sup> This can be explained by the fact that fossil-fuel products represent the majority of energy subsidies.<sup>33</sup> In terms

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<sup>28</sup> For example, a support measure collected and provide via a fund can in one country fall under the State aid regime while it would not in another. Decisive is the level of State influence over the fund that disperses the capital.

<sup>29</sup> The European Commission often needs longer than two month for the initial assessment of an individual measure see Einarsson and Kekeleki, 'Time's up – Procedural Delays in State Aid Cases: An Overview of the Case Law' (2015) 14:1 European State Aid Law Quarterly 130-142.

<sup>30</sup> IPCC, Guidance Note for Lead Authors of the IPCC Fifth Assessment Report on Consistent Treatment of Uncertainties - IPCC Cross-Working Group Meeting on Consistent Treatment of Uncertainties (2010) [https://www.ipcc.ch/site/assets/uploads/2017/08/AR5\\_Uncertainty\\_Guidance\\_Note.pdf](https://www.ipcc.ch/site/assets/uploads/2017/08/AR5_Uncertainty_Guidance_Note.pdf) p.3.

<sup>31</sup> EIA. Direct Federal Financial Interventions and Subsidies in Energy in Fiscal Year 2013. Washington DC: U.S. Energy Information Administration; 2015; von Moltke A, McKee C, Morgan T. Energy Subsidies: Lessons Learned in Assessing their Impact and Designing Policy Reforms. Routledge; 2017; OECD. Improving the Environment through Reducing Subsidies. Paris: Organisation for Economic Co-operation and Development; 1998; UNEP, IEA. Reforming Energy Subsidies: An Explanatory Summary of the Issues and Challenges in Removing Or Modifying Subsidies on Energy that Undermine the Pursuit of Sustainable Development. Oxford, UK: UNEP/Earthprint; 2002.

<sup>32</sup> IEA, OECD, World Bank. The Scope of Fossil-Fuel Subsidies in 2009 and a Roadmap for Phasing Fossil-Fuel Subsidies. Paris: IEA, OECD and The World Bank; 2010; Koplou D. Measuring energy subsidies using the price-gap approach: What does it leave out? Winnipeg: IISD; 2009.

<sup>33</sup> UNEP, IEA. Reforming Energy Subsidies: An Explanatory Summary of the Issues and Challenges in Removing Or Modifying Subsidies on Energy that Undermine the Pursuit of Sustainable Development. Oxford, UK: UNEP/Earthprint; 2002; Coady D, Parry IWH, Sears L, Shang B. How Large Are Global Energy Subsidies?

of energy carriers, energy subsidies often cover coal, oil, natural gas and electricity generated from these three fossil fuel sources.

Different definitions of subsidies exist and include various elements such as direct cash transfer, credits, tax exemptions, risk transfer, price controls, research and development, market access/restrictions, equity infusion, loan guarantees, direct budget transfers, social costs (i.e. negative externalities), state support, single or differentiated tariffs, inefficient energy prices, policy inaction, etc.<sup>34</sup> From a broad socio-economic perspective, fossil fuel (or energy) subsidies are often understood as any governmental actions that alter energy price mechanisms (e.g. lowering production costs).<sup>35</sup>

Consequently, finding a common agreed definition of energy subsidies has been a complex and difficult task in international politics and most countries have adopted their own definition.<sup>36</sup> Guidelines from the World Trade Organisation (WTO) exist, however. According to the ‘Agreement on Subsidies and Countervailing Measures’ (ACMS) (Article 1)<sup>37</sup>, which has been accepted by all WTO members, a subsidy occurs when “there is a financial contribution by a government or any public body within the territory of a Member, i.e. where:

- (i) a government practice involves a direct transfer of funds (e.g. grants, loans, and equity infusion), potential direct transfers of funds or liabilities (e.g. loan guarantees);
- (ii) a government revenue that is otherwise due is foregone or not collected (e.g. fiscal incentives such as tax credits)
- (iii) a government provides goods or services other than general infrastructure, or purchases goods;
- (iv) a government makes payments to a funding mechanism, or entrusts or directs a private body to carry out one or more of the type of functions

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Washington DC, USA.: International Monetary Fund; 2015; IEA. World Energy Outlook 2016. Paris: OECD/IEA; 2016.

<sup>34</sup> Koplou D. Measuring energy subsidies using the price-gap approach: What does it leave out? Winnipeg: IISD; 2009; Coady D, Parry IWH, Sears L, Shang B. How Large Are Global Energy Subsidies? Washington DC, USA.: International Monetary Fund; 2015. See eg Blauburger M. Of ‘good’ and ‘bad’ subsidies: European state aid control through soft and hard law. *West European Politics* 2009;32:719–737; Fattouh B, El-Katiri L. Energy subsidies in the Middle East and North Africa. *Energy Strategy Reviews* 2013;2:108–15; Kosmo M. Commercial energy subsidies in developing countries Opportunity for reform. *Energy Policy* 1989;17:244–253; OECD. Environmentally Harmful Subsidies Challenges for Reform: Challenges for Reform. Paris: OECD Publishing; 2005; Pitt M. Equity, externalities and energy subsidies The case of kerosine in Indonesia. *Journal of Development Economics* 1985;17:201–217; Ross M, Hazlett C, Mahdavi P. Global progress and backsliding on gasoline taxes and subsidies. *Nature Energy* 2017;2: 201; Saboohi Y. An evaluation of the impact of reducing energy subsidies on living expenses of households. *Energy Policy* 2001; 29:245–252.

<sup>35</sup> OECD. Improving the Environment through Reducing Subsidies. Paris: Organisation for Economic Co-operation and Development; 1998; De Moor A, Calami P. Subsidizing Unsustainable Development. Canada: Earth Council and the Institute for Research on Public Expenditure; 1997; IEA. World Energy Outlook 2015 Special Report 2015: Energy and Climate Change. Paris: OECD/ IEA; 2015. See also von Moltke A, McKee C, Morgan T. Energy Subsidies: Lessons Learned in Assessing their Impact and Designing Policy Reforms. Routledge; 2017; Fattouh B, El-Katiri L. Energy subsidies in the Middle East and North Africa. *Energy Strategy Reviews* 2013;2:108–15; Anderson K. The political economy of coal subsidies in Europe. *Energy Policy* 1995;23:485–96; Larsen B, Shah A. World Fossil Fuel Subsidies and Global Carbon Emissions. Washington DC: World Bank; 1992; Riedy C, Diesendorf M. Financial subsidies to the Australian fossil fuel industry. *Energy Policy* 2003;31:125–37.

<sup>36</sup> IEA, OECD, World Bank. The Scope of Fossil-Fuel Subsidies in 2009 and a Roadmap for Phasing Fossil-Fuel Subsidies. Paris: IEA, OECD and The World Bank; 2010

<sup>37</sup> For details see [https://www.wto.org/english/res\\_e/booksp\\_e/analytic\\_index\\_e/subsidies\\_01\\_e.htm#article1](https://www.wto.org/english/res_e/booksp_e/analytic_index_e/subsidies_01_e.htm#article1)



illustrated in (i) to (iii) above which would normally be vested in the government and the practice, in no real sense, differs from practices normally followed by governments; or there is any form of income or price support in the sense, and a benefit is thereby conferred”

More specifically, several international organisations have provided conceptual guidelines in the context of assessing the impacts of energy subsidies and phasing out or cutting fossil-fuel subsidies.

The International Energy Agency (IEA)<sup>38</sup> has defined these subsidies “as any government action that concerns primarily the energy sector that lowers the cost of energy production, raises the price received by energy producers or lowers the price paid by energy consumers”. Acknowledging the lack of conceptual agreements and variety of definitions, the U.S. Energy Information Administration<sup>39</sup> has focused instead on specific policy programmes that address: direct expenditures to producers or consumers (i.e. provision of direct cash outlays), tax expenditures (i.e. reduction of tax liability), funding of research and development, federal electricity programmes supporting federal and rural utilities, and loans and loan guarantees. When both producer and consumer (fossil-fuel) subsidies are taken into account, cross-subsidies across various energy user groups is a critical element to consider. According to Fattouh & El-Katiri<sup>40</sup>, this occurs when “tariffs below the cost of production are charged, for instance, to household users, and the revenue shortfall is offset by increasing industrial or commercial sector tariffs to above-cost levels”.

The inclusion of socially and environmental harmful externalities (e.g. morbidity from air pollution, social costs of climate change), and thus measurement and resulting estimates (details in next section), is an important front of policy and academic discussions.<sup>41</sup> For instance, given the difficulties in estimating energy subsidies in general and fossil-fuel subsidies in particular, it is argued that a narrow definition addressing private (marginal) direct costs and benefits is often preferred.<sup>42</sup> The OECD has provided guidelines to its members and defines an energy subsidy “as any measure that keeps prices for consumers below market levels”.<sup>43</sup> However, it acknowledges that in the environmental and social realms, a broader definition encompassing market failures such as negative externalities should be considered, particularly if fossil-fuel subsidies are taken into account.<sup>44</sup>

From a consumer point of view, and recognising the external costs of fossil-fuels, the International Monetary Fund (IMF) makes an important distinction that addresses both pre-tax and post-tax

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<sup>38</sup> IEA. World Energy Outlook - Looking at Energy Subsidies: Getting the Prices right. Paris: IEA/OECD; 1999.

<sup>39</sup> IEA. Direct Federal Financial Interventions and Subsidies in Energy in Fiscal Year 2013. Washington DC: U.S. Energy Information Administration; 2015.

<sup>40</sup> Fattouh B, El-Katiri L. Energy subsidies in the Middle East and North Africa. Energy Strategy Reviews 2013;2:108–15.

<sup>41</sup> von Moltke A, McKee C, Morgan T. Energy Subsidies: Lessons Learned in Assessing their Impact and Designing Policy Reforms. Routledge; 2017; Koplou D. Measuring energy subsidies using the price-gap approach: What does it leave out? Winnipeg: IISD; 2009; Coady D, Parry IWH, Sears L, Shang B. How Large Are Global Energy Subsidies? Washington DC, USA.: International Monetary Fund; 2015; Clements B, Coady D, Fabrizio S, Gupta S, Alleyne T, Sdravovich C, editors. Energy Subsidy Reform: Lessons And Implications. Washington, D.C: International Monetary Fund; 2013; OECD. Environmentally Harmful Subsidies Challenges for Reform: Challenges for Reform. Paris: OECD Publishing; 2005.

<sup>42</sup> IEA, OECD, World Bank. The Scope of Fossil-Fuel Subsidies in 2009 and a Roadmap for Phasing Fossil-Fuel Subsidies. Paris: IEA, OECD and The World Bank; 2010.

<sup>43</sup> OECD. Environmentally Harmful Subsidies Challenges for Reform: Challenges for Reform. Paris: OECD Publishing; 2005.

<sup>44</sup> OECD. Environmentally Harmful Subsidies Challenges for Reform: Challenges for Reform. Paris: OECD Publishing; 2005.

consumer subsidies<sup>45</sup>: a *pre-tax consumer subsidy* exists “when the price paid by consumers (that is, firms and households) is below the cost of supplying energy”; however, a *post-tax consumer subsidy* “arise[s] when the price paid by consumers is below the supply costs of energy plus an appropriate “Pigouvian” (or “corrective”) tax that reflects the environmental damage associated with energy consumption and additional consumption tax that should be applied to all consumption goods for raising revenues”.

Based on the above, it should not be surprising that divergent definitions may lead to different measurement techniques and resulting estimates.

### 3.2. Methods, estimates and discrepancies: A snapshot

Several estimates of subsidies addressing fossil-fuels products and electricity (i.e. energy subsidies) are available. Back in 2000, the World Energy Assessment<sup>46</sup> estimated conventional energy subsidies (mostly dedicated to fossil fuels) to be in the range of U\$250-300 billion a year in the mid-1990s. However, available estimates reveal immediate discrepancies. Conceptual and methodological aspects are at the core of diverging estimates. They are briefly elaborated in the following.

The ‘*price-gap approach*’ is often found in the literature as methodology to estimate subsidies. This method addresses the difference between international reference fossil fuel prices and domestic fossil fuel prices, giving emphasis to consumer subsidies only.<sup>47</sup> It aims to estimate fossil fuels subsidies that are consumed directly by end-users (or inputs to electricity generation). The IEA applies this methodology to estimate fossil-fuels subsidies.<sup>48</sup> The approach compares average end-user prices paid by consumers with reference prices that are in line with the full (private) cost of supply. The ‘price gap’ is then the difference between the end-use price and the reference price.<sup>49</sup> The formula is simple and is often presented as  $Subsidy = (Reference\ price - end\ user\ price) \times units\ of\ energy\ used$ . The ‘gap’ (i.e. reference price – end user price) gives an indication of a distorted market price and thus the presence of a subsidy.

Using this approach, the IEA has produced various estimates for fossil-fuel subsidies over the past decade. Upper bounds estimates are in the proximity of US\$580 billion (e.g. for the years 2008 and 2012) and lower bounds in the range of U\$300-350 billion (e.g. for the years 2007, 2009 and 2015).<sup>50</sup> Oil products often account for approximately 45–50% of the total value of subsidies (e.g. for years 2008, 2010, 2012). Using the price-gap approach, the IMF<sup>51</sup> estimated pre-tax subsidies to be U\$541

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<sup>45</sup> Coady D, Parry IWH, Sears L, Shang B. How Large Are Global Energy Subsidies? Washington DC, USA.: International Monetary Fund; 2015.

<sup>46</sup> UNDP, UNDESA, WEC. World Energy Assessment: Energy and the challenge of sustainability. New York: UNDP; 2000; Goldemberg J, Johansson TB. World energy assessment - Overview 2004 update. New York: UNDP; 2004.

<sup>47</sup> Koplou D. Measuring energy subsidies using the price-gap approach: What does it leave out? Winnipeg: IISD; 2009.

<sup>48</sup> IEA. World Energy Outlook 2015 Special Report 2015: Energy and Climate Change. Paris: OECD/ IEA; 2015; IEA, OECD, World Bank. The Scope of Fossil-Fuel Subsidies in 2009 and a Roadmap for Phasing Fossil-Fuel Subsidies. Paris: IEA, OECD and The World Bank; 2010; IEA. Fossil-Fuels Subsidies, in World Energy Outlook 2014. Paris: OECD/ IEA; 2014. For further details see <http://www.worldenergyoutlook.org/resources/energysubsidies/methodology/>

<sup>49</sup> Koplou D. Measuring energy subsidies using the price-gap approach: What does it leave out? Winnipeg: IISD; 2009.

<sup>50</sup> IEA. World Energy Outlook 2016. Paris: OECD/ IEA; 2016; IEA. Fossil-Fuels Subsidies, in World Energy Outlook 2014. Paris: OECD/ IEA; 2014.

<sup>51</sup> Coady D, Parry IWH, Sears L, Shang B. How Large Are Global Energy Subsidies? Washington DC, USA.: International Monetary Fund; 2015.

billion in 2013 and U\$333 in 2015. Estimates from the IEA tend to be higher than IMF figures because a broader range of oil products is included.<sup>52</sup>

However, the reviewed literature highlights various shortcomings for this method, including difficulties in establishing pricing benchmarks for all fossil fuels, disentangling world reference prices from the effects of subsidies, adjusting border prices, defining a given level of taxation for internal prices, etc.<sup>53</sup> In addition, price-gap estimates are sensitive to reference prices,<sup>54</sup> which are calculated based on international prices. For instance, the reduction in fossil fuel subsidy values estimated by the IEA for 2009 and 2015 (U\$ 325 billion approximately) is largely driven by lower international fossil fuel prices. OPEC countries have rejected the price-gap approach and suggested that the reference price to be used for well-endowed fossil fuel or energy countries should be the production costs.<sup>55</sup> Oil subsidies are heavily concentrated in oil- and gas-exporting countries. This issue highlights (and confirmed) that the conceptualisation and application of the approach is contested and subject to country-specific issues (e.g. well-endowed energy nations).

The OECD has deviated from the price-gap methodology and applied the '*inventory approach*'.<sup>56</sup> This method encompasses a bottom-up inventory of governmental policies and measures (e.g. tax breaks) supporting the production and consumption of fossil fuels. The approach is based on the 'Producer Support Estimate and Consumer Support Estimate' framework that the OECD applies to agricultural products. It entails a broad concept of support policies and measures that includes direct budgetary transfers and tax expenditures.<sup>57</sup> However, subsidies associated to risk transfers (e.g. via loan guarantees) are excluded.<sup>58</sup> Based on the above, the OECD estimates that there are approximately 800 individual policies around the world that support the productions and consumption of fossil fuels, with an overall value of U\$160–200 billion per year during the period 2010–2014. The Global Subsidies Initiative (GIS) has also applied the inventory approach to estimate country and sectoral specific fossil fuel subsidies.<sup>59</sup> The IMF<sup>60</sup> has also used this approach to estimate producer subsidies.

The '*externality approach*' was used by the IMF to estimate post-tax energy subsidies. The approach was applied to fossil fuels but not to electricity in order to avoid double counting and included the costs of global warming, local air pollution, traffic congestion and accidents and road damage.<sup>61</sup> Based on this, post-tax subsidies were estimated at U\$4.2 trillion in 2011, U\$4.9 trillion in 2013,

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<sup>52</sup> IEA. Fossil-Fuels Subsidies, in World Energy Outlook 2014. Paris: OECD/ IEA; 2014. Note that major fossil fuel subsidies occur in countries like Iran, Saudi Arabia, Russia, Venezuela, China and Indonesia. For further details see <http://www.iea.org/statistics/resources/energysubsidies/> and <http://www.iisd.org/gsi/fossil-fuel-consumption-subsidies-total>

<sup>53</sup> Koplow D. Measuring energy subsidies using the price-gap approach: What does it leave out? Winnipeg: IISD; 2009; OECD. Inventory of Estimated Budgetary Support and Tax Expenditures for Fossil Fuels 2013. Paris: OECD Publications; 2013.

<sup>54</sup> Koplow D. Measuring energy subsidies using the price-gap approach: What does it leave out? Winnipeg: IISD; 2009; IEA. World Energy Outlook 2016. Paris: OECD/ IEA; 2016.

<sup>55</sup> IEA. Fossil-Fuels Subsidies, in World Energy Outlook 2014. Paris: OECD/ IEA; 2014; IEA, OPEC, OECD, World Bank. Analysis of the Scope of Energy Subsidies and Suggestions for the G-20 Initiative. Paris: IEA, OPEC, OECD and The World Bank; n.d.

<sup>56</sup> OECD. Inventory of Estimated Budgetary Support and Tax Expenditures for Fossil Fuels 2013. Paris: OECD Publications; 2013.

<sup>57</sup> Ibid. For further details see <http://www.oecd.org/site/tadffss/>

<sup>58</sup> Ibid.

<sup>59</sup> For further details see <http://www.iisd.org/gsi/>

<sup>60</sup> Clements B, Coady D, Fabrizio S, Gupta S, Alleyne T, Sdravovich C, editors. Energy Subsidy Reform: Lessons And Implications. Washington, D.C: International Monetary Fund; 2013.

<sup>61</sup> Coady D, Parry IWH, Sears L, Shang B. How Large Are Global Energy Subsidies? Washington DC, USA.: International Monetary Fund; 2015. For further details see <http://www.imf.org/external/np/fad/subsidies/#mes>

and U\$5.3 trillion in 2015. Whereas fossil fuels account for approximately 75% of total pre-tax energy subsidies (based on price-gap approach) for the period 2011-2015, their share goes up to 90% (or more) when negative externalities associated to fossil-fuel consumption (e.g. effects of local pollution) are taken into account in post-tax estimates.<sup>62</sup> Negative externalities from fossil fuels associated with local air pollution (e.g. mortality risks) account for 50% of post-tax subsidies in 2015.<sup>63</sup> Using the same approach, previous IMF<sup>64</sup> estimates of post-tax subsidies were lower. The latest report acknowledges several factors explaining the difference. These include a broader coverage of air pollutants, new estimates for local air pollution damages, specific country-level assessments of externalities, and the use of country-specific conversion factors.<sup>65</sup> Whereas in the context of climate change there is uncertainty regarding the social costs of global warming (albeit estimates tend to be conservative),<sup>66</sup> the sole presence of negative externalities associated to the consumption of fossil fuels provide strong methodological support for this approach.<sup>67</sup> Finally, the distinction between consumers and producers needs to be highlighted, as well as the geographical scope of estimates. The latter can differ ostensibly.

The inventory approach<sup>68</sup> is the most detailed targeting individual identified policies whereas the price gap approach is an aggregated measure that aims to capture all direct, indirect, public and hidden subsidies to fossil energy. In general, most subsidies are given not as direct monetary support to producers but as support to consumers via e.g. tax exemptions or a pricing mechanism that deflates the end-user price (see e.g. note 6).

## 4. The EU State Aid Rules

The EU state aid law has its own definition of subsidies, called State aid, in line with purposes of this field of law. The relevant provisions regulating the granting of State aid in the EU are contained in Article 107ff of the Treaty on the Functioning of the European Union (TFEU). The main provision that also sets out the criteria for defining State aid measures is contained in Article 107 (1) TFEU. It states that: *‘[s]ave as otherwise provided in the Treaties, any aid granted by a Member State or through State resources in any form whatsoever which distorts or threatens to distort competition by favouring certain undertakings or the production of certain goods shall, in so far as it affects trade between Member States, be incompatible with the internal market’ (emphasis added).*

Obviously, the EU definition of State aid has a different purpose than the different definitions and methods briefly presented in the introduction. The EU State aid regime is aimed at protecting trade and competition within the internal market and *not* at identifying fossil fuel subsidies. Yet, the EU definition is relatively close to the WTO definition of subsidy which is designed to promote free-

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<sup>62</sup> Ibid.

<sup>63</sup> Ibid.

<sup>64</sup> Clements B, Coady D, Fabrizio S, Gupta S, Alleyne T, Sdravovich C, editors. Energy Subsidy Reform: Lessons And Implications. Washington, D.C: International Monetary Fund; 2013.

<sup>65</sup> Coady D, Parry IWH, Sears L, Shang B. How Large Are Global Energy Subsidies? Washington DC, USA.: International Monetary Fund; 2015.

<sup>66</sup> The IMF uses an “illustrative number” of 35 USD/tonCO<sub>2</sub> derived from Parry et al 2014. See Revesz, R., P. Howard, K. Arrow, L. Goulder, R. Kopp, M. Livermore, M. Oppenheimer, and T. Sterner. 2014. “Global Warming: Improve Economic Models of Climate Change.” *Nature* 508 (7495): 173

<sup>67</sup> Kolstad et al. 2014. “Social, Economic and Ethical Concepts and Methods.” In *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Edenhofer, O., R. Pichs-Madruga, Y. Sokona, E. Farahani, S. Kadner, K. Seyboth, A. Adler, I. Baum, S. Brunner, P. Eickemeier, B. Kriemann, J. Savolainen, S. Schlömer, C. von Stechow, T. Zwickel and J.C. Minx (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

<sup>68</sup> The definitions vary and a good comparison between methods and consequences can be found at [https://www.iisd.org/gsi/sites/default/files/ffs\\_methods\\_estimationcomparison.pdf](https://www.iisd.org/gsi/sites/default/files/ffs_methods_estimationcomparison.pdf).

trade. Yet, while measures that are considered subsidies under the WTO definition are in the majority of cases also considered State aid in the EU, the EU system is different.<sup>69</sup> The difference stems mainly from the enforcement side. In the WTO system, a State would have to bring action against another State.<sup>70</sup> In contrast, the EU system relies on enforcement by an independent third party as enforcement body, the EU Commission. Moreover, under certain (strict) conditions private actors might bring direct court action in State aid cases, which is not possible under the WTO system. The WTO set up means that a State needs to enforce the rules against another State and risks a possible trade war due to fossil fuel subsidies, creating a “hawks will not pick out hawks' eyes” problem that does not exist in the EU framework. In the following we explore the definition of State aid in some more detail before we estimate the level of fossil fuel subsidies that are covered by the EU State aid system and explain the reasons why this tool is potentially very effective for addressing the complicated issue of phasing out fossil fuel subsidies in the next section.

#### 4.1. What is State Aid under EU Law?

The definition of State aid contained in Article 107(1) TFEU rests on the definition of ‘advantage’. The EU courts have explained that this refers to an ‘an economic advantage which [the undertaking] would not have obtained under normal market conditions’.<sup>71</sup> The economic advantage bestowed upon the undertaking can either be in form of positive benefits but it can equally consist of easing a financial burden.<sup>72</sup> With this being a purely effect based analysis,<sup>73</sup> where the fair market value is paid for the benefit granted by the State, and no economic advantage within the meaning of Article 107 (1) TFEU can be established and the measure is not caught by the prohibition.<sup>74</sup> In other words, under EU law the transaction under which the State buys fossil fuels at the fair market value cannot be caught.

We acknowledge that this definition is rather broad and means that all kinds of measures can be considered to fall *within* the meaning of economic advantage. Examples range from direct payment,

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<sup>69</sup> On the difference between EU State Aid regime and definition to eg the WTO definition of subsidy control see Luca Rubini, *The Definition of Subsidy and State Aid: WTO and EC law in Comparative Perspective* (OUP 2009).

<sup>70</sup> On the fossil fuels subsidies and the option and challenges of using the WTO system see Cleo Verkuijl, Harro van Asselt, Tom Moerenhout, Liesbeth Casier, Peter Wooders, ‘Climate Strategies: Tackling Fossil Fuel Subsidies through International Trade Agreements (Nov 2017) [http://climatestrategies.org/wp-content/uploads/2017/11/CS-Report\\_FFS-2017.pdf](http://climatestrategies.org/wp-content/uploads/2017/11/CS-Report_FFS-2017.pdf).

<sup>71</sup> See eg Case C-39/94 *SFEI and others* [1996] ECR I-3547, para 60; Joined Cases T-204/97 and T-270/97 *EPAC v Commission* [2000] ECR II-2267, para 66.

<sup>72</sup> See Case C-237/04 *Enirisorse* [2006] ECR I-2843, para 42; Case C-222/04 *Cassa di Risparmio di Firenze and Others* [2006] ECR I-289, para 131; Case C-393/04 and C-41/05 *Air Liquide Industries Belgium* [2006] ECR I-5293, para 29; Case C-241/94 *France v Commission* [1996] ECR I-4551, para 34; Case C-387/92 *Banco Exterior de España v Ayuntamiento de Valencia* [1994] ECR I-877, para 13; *SFEI and others* (n 6), para 48; Case C-143/99 *Adria-Wien* [2001] ECR I-8365, para 38; Case C-75/97 *Belgium v Commission* [1999] ECR I-3671, para 23; Case C-6/97 *Italy v Commission* [1999] ECR I-2981, para 15; Case C-172/03 *Heiser* [2005] ECR I-1627, para 36; Case C-501/00 *Spain v Commission* [2004] ECR I 6717, para 90; Case C-66/02 *Italy v Commission* [2005] ECR I-10901, para 77.

<sup>73</sup> Case 173/73 *Italy v Commission* [1974] ECR 709, para 13; Case 310/85 *Deufil v Commission* [1987] ECR 901, para 8; Case C-172/03 *Heiser* [2005] ECR I-1627, para 46; Case C-159/01 *Netherlands v Commission* [2004] ECR I-4461, para 51; Case C-56/93 *Belgium v Commission* [1996] ECR I-723, para 79; Case C-241/94 *France v Commission* [1996] ECR I-4551, para 20; Case C-75/97 *Belgium v Commission* [1999] ECR I-3671, para 25; Joined Cases C-71/09P, C-73/09P and C-76/09P *Comitato "Venezija vuole vivere" and others v Commission* [2011] ECR I-4727, para 94; Joined Cases C-106/09P and C-107/09P *Commission and Spain v Government of Gibraltar and United Kingdom* [2011] ECR I-11113, para 48; Case T-613/97 *UFEX and Others v Commission* [2000] ECR II-4055, para 160; Case T-270/97 *EPAC v Commission* [2000] ECR II-2267, para 76; Case C-126/01 *GEMO* [2003] ECR I-13769, para 34; *Aid schemes for the motor vehicle industry* Commission Decision 90/381/EEC [1990] OJ L188/55.

<sup>74</sup> See Case 30/59 *De gezamenlijke Steenkolenmijnen* [1961] ECR 1, page 19 and also eg Martin Heidenhain, *European State Aid Law: Handbook* (Beck 2010), 23 and Phedon Nicolaidis, ‘State Aid, Advantage and Competitive Selection: What is a Normal Market Transaction’ [2010] *European State Aid Law Quarterly* 65.



the preferential sale of land, to more favourable tax regimes. However, while the definition of economic advantage is broad, not every economic advantage is State aid. Article 107 (1) sets up further conditions before something is considered State aid falling under that Article. These qualifications can be broken down into the following elements:

#### a) Advantage granted to an undertaking

The definition of an *undertaking* in State aid law has a double function. On the one hand, it can widen the scope of application of the State aid rules. On the other hand, this definition limits the application of Article 107 TFEU to advantages granted to specific entities. Undertakings are defined as entities ‘engaged in an economic activity, [and this assessment is] regardless of the legal status of the entity and the way in which it is financed.’<sup>75</sup> Thus, a functional approach is used where ‘substance prevails over form.’<sup>76</sup>

This definition of undertaking on the one hand broadens the scope to EU State aid law because EU State aid law might even apply to entities that are part of the general administration of the State.<sup>77</sup> At the same time, it can also have a limiting function. Thus, where an entity is not engaged in an economic activity EU State aid law cannot apply although entity can be considered to be regular company under company or tax-law.<sup>78</sup> In the context of fossil fuels, this definition would mean that even measures that benefit entities, which are formally considered part of the State, can be caught. Hence, it applies not only to State owned enterprises but to all entities that are active on the energy market regardless of whether they are considered to be part of the State under, for example, tax or company law. Similarly, where for example State hospitals obtain fossil fuels below market price the State aid rules can be applicable.

#### b) Selectivity of the Advantage

The main limiting factor of EU State aid law is that the economic advantage must be selective in nature. Thus, the advantage must be available to some undertakings but not to others which are in a comparable situation.<sup>79</sup> When performing this assessment, the size of their groups are immaterial.<sup>80</sup> For example, a measure can be selective in a geographical sense. This is the case where the advantage is available only in certain regions and this difference does not stem the fact that a

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<sup>75</sup> Case C-41/90 *Höjner and Elser v Macrotron* [1991] ECR I-1979, para 21 more recently Case C-280/06 *ETI and Others* [2007] ECR I-10893, para 38; Case C-350/07 *Kattner Stahlbau* [2009] ECR I-1513, para 34.

<sup>76</sup> Victoria Louri, ‘Undertaking as a Jurisdictional Element for the Application of EC Competition Rules’ (2002) 29((2)) *Legal Issues of Economic Integration* 143, 146.

<sup>77</sup> Eg Case 118/85 *Commission v Italy* [1987] ECR 2599; *Spanish Courier Services* Commission Decision 90/456/EEC [1990] OJ L233/19; *Aluminium Imports from Eastern Europe* (IV/26.870) Commission Decision 85/206/EEC [1985] OJ L92/1.

<sup>78</sup> Victoria Louri, ‘Undertaking as a Jurisdictional Element for the Application of EC Competition Rules’ (2002) 29((2)) *Legal Issues of Economic Integration* 143, 148. This might be illustrated by reference to Case C-343/95 *Diego Cali & Figli v Servizi Ecologici Porto di Genova* [1997] ECR I-1547 where the Court held that EU competition law was not applicable in a case where anti-pollution surveillance was delegated to a private company. On the question of when private undertakings may act in a way that is not subject to the EU Competition regime see: Harm Schepel, ‘Delegation of Regulatory Powers to Private Parties under EC Competition Law: Towards a Procedural Public Interest Test’ (2002) 39(1) *Common Market Law Review* 31.

<sup>79</sup> Case C-143/99 *Adria-Wien* [2001] ECR I-8365, para 48; Case C-409/00 *Spain v Commission* [2003] ECR I-1487, para 47. However, there is no need to establish any reference group where *ad hoc* measures relate only to one undertaking, Case T-135/12 *France v Commission* (GC 26 February 2015), EU:T:2015:116; Case T-385/12 *Orange v Commission* (GC 26 February 2015), EU:T:2015:117. For an overview regarding selectivity see Conor Quigley, ‘Direct Taxation and State Aid: Recent Developments Concerning the Notion of Selectivity’ (2012) 40(2) *Intertax* 112.

<sup>80</sup> Case C-143/99 *Adria-Wien* [2001] ECR I-8365, para 48; Case C-409/00 *Spain v Commission* [2003] ECR I-1487, para 47.

regional body which grants the benefit enjoys independence.<sup>81</sup> So, where a certain region would benefit from subsidised fossil fuels, such as for example a lower tax for gas, the EU's State aid regime can be applicable.<sup>82</sup> Another more frequent case of selectivity are measures that are selective in a material sense. This is the case where measure 'favour[s] certain undertakings...in comparison with other undertakings which are in a legal and factual situation which is comparable in the light of the objective pursued by the measure in question.'<sup>83</sup> For example, where only undertakings of a certain size or which are active in certain sectors obtain preferential access to fossil fuels this criterion is fulfilled. Similarly, where a legal framework favours fossil fuels as compared to other forms of energy on a specific market, for example in form of a beneficial tax system, the system would be subject to State aid control. An example could be a tax rate that is lower for diesel and petrol than for renewable fuels.

### c) Granted by the State or through State resources

Another limiting factor is that measures must be granted through the resources of a Member State, either directly or in an indirect way.<sup>84</sup> For example, the Netherlands' initial NO<sub>x</sub> permit system involved state resources.<sup>85</sup> The system set up a 55 kilotons target for large industrial facilities based on the national emission ceiling for NO<sub>x</sub> in 2010. As it became clear that this target would not be reached, the Netherlands set up a trading system with a uniform NO<sub>x</sub> emission standard covering all industrial facilities with installed total thermal capacity above 20 MW<sub>th</sub>. Companies subject to the system had either to comply with the set standard or buy permits from others. The system foresaw penalties for non-compliance but granted a certain number of permits for free to companies which could subsequently be traded. The Court of Justice of the European Union found that the Netherlands would forgo revenue because the relevant permits were not sold or auctioned off.<sup>86</sup> The fact that it is sufficient that the resources are only indirectly attributable to the State further broadens the reach. This can be seen in the cases where, for instance, the money comes from a private company over which the State however has sufficient influence.<sup>87</sup> Thus, the State

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<sup>81</sup> See eg *Customs House Docks Area* Commission Decision 2000/620/EC [2000] OJ L260/37, para 57ff; *Belgian Economic Expansion Act* Commission Decision 2000/472/EC [2000] OJ L191/30, para 31; *Corporation Tax Reform Gibraltar* Commission Decision 2005/261/EC [2005] OJ L85/1, para 31.

<sup>82</sup> On the consequences of this application see below the section on Consequences and power of EU state aid law.

<sup>83</sup> Case C-409/00 *Spain v Commission* [2003] ECR I-1487, para 41. On the why tax measures and benefits that are available to all undertakings are not selective see Case T-219/10 *Autogrill España v Commission* (GC 7 November 2014), EU:T:2014:939; Case T-399/11 *Banco Santander and Santusa v Commission* (GC 7 November 2014), EU:T:2014:938, see also Phedon Nicolaides, 'New Limits to the Concept of Selectivity: The Birth of a 'General Exception' to the Prohibition of State Aid in EU Competition Law' (2015) 6(5) *Journal of European Competition Law & Practice* 315.

<sup>84</sup> Joined Cases C-72/91 & C-73/91 *Sloman Neptun v Bodo Ziesemer* [1993] ECR I-887, para 19; Case C-189/91 *Kirsammer-Hack v Sidal* [1993] ECR I-6185, para 16; Joined Cases C-52/97 to C-54/97 *Viscido and Others v Ente Poste Italiane* [1998] ECR I-2629, para 13; Case C-200/97 *Ecotrade v Alitiformi e Ferriere di Servola* [1998] ECR I-7907, para 35; Case C-295/97 *Piaggio* [1999] ECR I-3735, para 35; Case C-379/98 *PreussenElektra v Schleswag* [2001] ECR I-2099, para 58.

<sup>85</sup> Case C-279/08 P *Commission v Netherlands* EU:C:2011:551.

<sup>86</sup> An aid measure is not attributable to the State when it merely implements EU legislation (see Case T-351/02 *Deutsche Bahn v Commission* [2006] ECR II-1047, para 102), the implementation of the EU Emission Trading System at national level which leads to differential treatment between undertakings within and outside the scope of the system is not attributable to the State, Suzanne Kingston, *Greening EU competition law and policy* (CUP 2012), 389–393; Anne T Seinen, 'State Aid Aspects of the EU Emission Trading Scheme: the Second Trading Period (2007) 3 *EC Competition Policy Newsletter* 100.' 100, 100.

<sup>87</sup> Case C-482/99 *France v Commission* [2002] ECR I-4397; Case T-442/03 *SIC v Commission* [2008] ECR II-1161. See also Case C-262/12 *Vent De Colère and Others* (19 December 2013), EU:C:2013:851, in this case the level of the surcharge was determined by ministerial decision. Moreover, the State would pay any difference where the total of the collected surcharge would not be enough to compensate for the purchasing obligation. See also the feed-in tariffs for renewable energy in Slovenia and Austria were considered to be deriving from State resources. The payment for the green energy

cannot evade the State aid regime by paying State aid for fossil fuel via a private company or an independent institution as long as the State has sufficient influence over this entity.

#### d) Effect on competition and trade

The final element that needs to be satisfied for a measure to fall within the EU State aid system established by Article 107 (1) TFEU is that the measure *must* have the potential to affect trade and competition. This is established mainly by means of the Commission's notice on the *de minimis* thresholds for Article 107(1) TFEU. This *de minimis* threshold, most recently set in Regulation 1407/2013<sup>88</sup> means that once certain monetary thresholds are met the effect is presumed. In this sense, only larger amounts of aid to undertakings are covered by the State Aid regime. In general, this means that wherever a single undertaking received benefits which are worth more than 200 000 Euros within three years the regime applies. Yet, in some areas like the road freight transport sector lower level apply, that is to say the rule apply where benefit is even smaller. For the road freight transport sector, the level is 100 000 Euros within three years. An effect of competition is presumed once a selective advantage for an undertaking or a sector and a relevant market are established.<sup>89</sup> Overall, this means that a high overall amount of subsidies does not necessarily imply that the EU State aid rules apply. In other words, if a huge number of companies would receive a small benefit, the EU State aid rules might not apply.

## 5. Ways forward: using EU State aid policy as a tool to phase out fossil fuels and estimating its potential

### 5.1 Fossil fuel subsidies as State Aid under the EU's regime

Having set out the defining elements of State aid, we can now examine to what extent current estimates of fossil fuel subsidies would be subject to the State aid rules. While the exact classification depends on the facts of the case in question, some general –but still early– points can be identified here.

First, the definition of EU State aid is close to that under the WTO. Hence that studies like the Europe Overseas Development Institute and ODI/CAN Europe's report<sup>90</sup> that already use WTO method for the purpose of estimating fossil fuel subsidies in Europe provide a good starting point and may rather easily be adjusted to an EU context. Second, it is important to note that a distinction has to be drawn between benefits that are granted to companies (or in the EU context undertakings) versus benefits granted to consumers. Where direct cash transfers, tax exemption or tax credits, support for research and development, preferential loans and guarantees, or investment support is given to the fossil fuel companies, the State aid regime would typically be applicable.

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was provided by a clearing body which was set up by the State and over which the State had influence *Ökostromgesetz - Renewables Feed-In Tariff* (NN162/A/2003 and N317/A/2006) Decision of 4 July 2006; *Slovenian Support for Production of Electricity from Renewable Energy Sources and in Co-generation Installations* (N354/2009) Decision of 23 October 2009. See also more recently Case C-405/16 *Germany vs Commission* EU:C:2019:268 case Case T-217/17 *FVE Holýšov I and Others v Commission* EU:T:2019:633.

<sup>88</sup> [2013] OJ L352/1.

<sup>89</sup> See Conor Quigley, *European State Aid Law and Policy* (3rd edn, Hart 2015), 79–80; Paul Craig and Gráinne de Búrca, *EU Law: Text, Cases, and Materials* (6th edn, OUP 2015), 1092–1093; Jose Luis da Cruz Vilaca, 'Material and Geographic Selectivity in State Aid: Recent Developments' (2009) 34(4) *European State Aid Law Quarterly* 443, 444–445. This idea seems to be expressed in Case C-278/92, C-279/92 & C-280/92 *Spain v Commission* [1994] ECR I-4103, para. 41.

<sup>90</sup> Ipek Gençsü, Maeve McLynn, Matthias Runkel, Markus Trilling, Laurie van der Burg, Leah Worrall, Shelagh Whitley, and Florian Zerkawy 'Europe Overseas Development Institute and CAN Europe Report - Phase-out 2020: Monitoring Europe's fossil fuel subsidies' (28 September 2017) <https://www.odi.org/sites/odi.org.uk/files/resource-documents/11762.pdf>.

This is subject to the provision that this holds true, as long as these benefits are not available on similar terms to other companies that are not active in the energy business. In turn, this reflects the focus of the EU State aid regime, to protect trade and competition. While the trade and competition focus mean that EU State aid typically apply where the fossil fuel industry receives a preferential treatment, the situation is different where the benefit is made available to consumers. Typically, social measures that benefit consumers (in the sense of households or natural persons in their private capacity) such a tax reduction or direct payments would be out of the scope of the State aid rules. For example subsidies for renovations of their accommodation or vouchers for energy bills given to energy-poor households. Only where such measures would indirectly benefit only the fossil fuel business (e.g. where the support is only available for energy sources from fossil fuels) State aid would apply again. Third, State aid measures must be granted by EU Member States. Where the EU rather than a Member State provides for the benefit to the companies, the EU State aid rules do not apply.<sup>91</sup> These general points are all subject to the provision that the relevant benefits surpass the relevant *de minimis* threshold of 200 000 Euro or 100 000 of the road freight business per three years per company.<sup>92</sup>

## 5.2 Estimating the level of subsidies subject to the EU State aid regime

The estimates of subsidies to fossil energy in the EU differ according to the various definitions and methods used from around EUR 39 billions/year to EUR 200 billions/year.<sup>93</sup> However, as stated earlier, the study by the Europe Overseas Development Institute and CAN Europe estimated that about 112 billion Euro was spent per year on fossil fuel subsidies during 2014-2016 using the WTO definition of subsidies.<sup>94</sup> The report looks at the 11 largest economies which account for 83% of the EU's greenhouse gas emissions.

In the following we use these findings as a starting point to estimate the level to which such fossil fuel subsidies are subject to the EU State aid regime. This comparison is useful as the ODI/CAN report is based on the WTO definition of what constitutes a subsidy and then uses a detailed inventory approach<sup>95</sup> analysing all publicly available numbers from EU member state policies and programmes that support fossil energy production and consumption.<sup>96</sup> The ODI/CAN report

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<sup>91</sup> One might further distinguish between on the one hand: EU funds that are only channelled through Member States which are not subject State aid rules, and on the other hand those disbursed by Member States where discretion for the Member States exists (subject to the State aid rules).

<sup>92</sup> And for example 30,000 euros for fisheries and aquaculture; 15,000 euros for agriculture.

<sup>93</sup> See Directorate General for Internal Policies, Fossil Fuel Subsidies – In-depth Analysis for the ENVI Committee (2017) [http://www.europarl.europa.eu/RegData/etudes/IDAN/2017/595372/IPOL\\_IDA\(2017\)595372\\_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/IDAN/2017/595372/IPOL_IDA(2017)595372_EN.pdf).

<sup>94</sup> Ipek Gençsü, Maeve McLynn, Matthias Runkel, Markus, Trilling, Laurie van der Burg, Leah Worrall, Shelagh Whitley, and Florian Zerzawy 'Europe Overseas Development Institute and CAN Europe Report - Phase-out 2020: Monitoring Europe's fossil fuel subsidies' (28 September 2017) <https://www.odi.org/sites/odi.org.uk/files/resource-documents/11762.pdf>, see in particular the second on methods.

<sup>95</sup> It is important to note the limitation of the inventory approach used. There are plenty of difficulties in getting consistent data across countries, reliable quantitative estimates, and given policy measures are often missed in the estimates (e.g. off-budget spending, dubious credit support). There is also the risk of double/triple counting when different levels of government are considered. Because both approaches (price gap and inventory) have strength and weaknesses a combination of price gap and inventory approach should ideally be used, see Masami Kojima and Doug Koplow, 'Fossil Fuel Subsidies - Approaches and Valuation' World Bank Policy Research Working Paper 7220 (March 2015) <http://documents.worldbank.org/curated/en/961661467990086330/pdf/WPS7220.pdf>.

<sup>96</sup> This approach allows the identification of a number of specific measures that can then be examined in the light of EU's definition of State aid. The report is detailed and the method comes close to the EU definitions explained in the text before. The report calculated these numbers by examining the value of all government programmes and investments benefiting the sector thereby covering subsidies to consumers, producers and resource owners. It examines, in particular, subsidies by European countries and European institutions, between 2014 and 2016 in form

identifies the following categories of subsidies for fossil fuels, subdividing them in subsidies for production and those for consumption.<sup>97</sup>

**Table 1. Subsidies to production**

<b>Coal mining:</b>	<b>Oil and gas:</b>	<b>Electricity</b>
<ul style="list-style-type: none"> <li>• Budget support (R&amp;D) for exploration technologies and processes, and for field development</li> <li>• Budget support and SOE investment on mine development activities</li> <li>• Price support (i.e. direct payments to producers, linked to the market price of fossil fuels)</li> <li>• Government-provided insurance and indemnification for risks and damages such as pollution</li> <li>• Early retirement payments for coal miners through government budgets</li> <li>• Government assumption of liabilities or spending on mine decommissioning</li> </ul>	<ul style="list-style-type: none"> <li>• Concessional loans to exploration companies, including for exploration equipment, from national and multilateral development banks</li> <li>• Tax deductions for the field development phase</li> <li>• Fiscal support (including budget support and tax breaks) and SOE investment on field development activities</li> <li>• Government-regulated price of feedstock (oil, gas and coal) for refining and processing</li> <li>• Tax and royalty exemptions linked to amount of fuel produced</li> <li>• Government, multilateral development banks or EU budget spending on oil and gas pipelines, interconnectivity and storage infrastructure</li> <li>• Government loans to fossil-fuel extracting companies to cover liabilities of field decommissioning</li> <li>• Early retirement payments for oil and gas through government budgets</li> </ul>	<ul style="list-style-type: none"> <li>• Grants and tax breaks for the construction of plants for heat and electricity generation and refineries</li> <li>• Relief on property taxes and charges for land, water use and pollution for processing facilities and power plants</li> <li>• Government-regulated price of feedstock (oil, gas and coal) for electricity and heat generation</li> <li>• Investment by SOEs in plant operation and modernisation, domestically and internationally</li> <li>• Capacity payments to fossil fuel-fired power plants</li> <li>• Fiscal support (including budget support and tax breaks) or SOE investment in grid infrastructure for fossil fuel-powered electricity</li> </ul>

**Table 2 Subsidies for consumption**

<b>Transport (excluding infrastructure)</b>	<b>Business and industry</b>	<b>Households</b>	<b>Agriculture</b>
<ul style="list-style-type: none"> <li>• Energy tax relief for public transportation</li> </ul>	<ul style="list-style-type: none"> <li>• Energy tax relief for energy-intensive processes</li> </ul>	<ul style="list-style-type: none"> <li>• Energy tax breaks for household</li> </ul>	<ul style="list-style-type: none"> <li>• Energy tax breaks for agriculture</li> </ul>

of a) ‘fiscal support’ - that is to say, direct spending by government, tax breaks, as well as income or price support- b) ‘public finance’ – that is to say, support through the provision of grants, loans, equity and guarantees- and c) ‘investment by State-owned enterprises (SOEs)’ –within the EU, but also internationally. It identifies the main areas of support in the EU as supporting consumption in the areas of transport; industry and business, households, and agriculture. The methodology and definition of the report means that these numbers exclude subsidies for infrastructure. Specifically, infrastructure in form of transport infrastructure like roads or grid systems for the distribution of electricity is excluded because it can also be used by non-fossil fuel related modes of transport and energy. Similarly, subsidies for infrastructure in form of plant construction, operation and distribution for petrochemicals and support provided at the sub-national are excluded because of the limited effects. Finally, a number of indirect benefits are excluded. These include a) any benefits for fossil fuel companies resulting from the ECB’s quantitative easing programmes in particular bond buying programme b) pay-outs in investor-state disputes. A final limitation acknowledged in the report is the availability and accessibility of information of government ministries, public finance institutions, and State-owned enterprises. Consequently, the subsidy figure of 112 billion Euro per year is likely to be an underestimation.

<sup>97</sup> See Ipek Gençsü, Maeve McLynn, Matthias Runkel, Markus, Trilling, Laurie van der Burg, Leah Worrall, Shelagh Whitley, and Florian Zerkawy ‘Europe Overseas Development Institute and CAN Europe Report - Phase-out 2020: Monitoring Europe’s fossil fuel subsidies’ (28 September 2017) <https://www.odi.org/sites/odi.org.uk/files/resource-documents/11762.pdf> page 20.



<ul style="list-style-type: none"> <li>• Tax breaks for diesel or other fuel sources</li> <li>• Company car tax breaks</li> <li>• Tax breaks for airlines</li> <li>• Energy tax exemption for fuels used in aviation</li> <li>• Energy tax exemption for shipping</li> <li>• Energy tax exemption for fuels used in internal waterway transportation</li> </ul>	<ul style="list-style-type: none"> <li>• Tax relief for specific processes</li> <li>• Energy tax relief for LPG and natural gas used in engines</li> </ul>	<ul style="list-style-type: none"> <li>heating and electricity</li> <li>• Budget support for new gas boilers</li> <li>• Direct aid to poor families (e.g. coal)</li> </ul>	<ul style="list-style-type: none"> <li>• Rebates on diesel fuel tax in agriculture, horticulture, farming and inland fisheries.</li> </ul>
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In Table 3, we have identified and estimated the share of fossil subsidies mentioned in the ODI/CAN report that can be targeted with EU state aid rules. We distinguish the subsidies as being ‘very likely’, ‘likely’, ‘less likely’, and ‘unlikely’ to be subject to the EU’s State aid regime. Overall, we estimate that a total between 58.22 to 69.59 billion of the 112 billion Euro of fossil fuel subsidies identified in the ODI/CAN report can be addressed by the EU State aid system. least likely’ at 0-5%. The results are summarised in Table 3 below.

**Table 3 Summary of our estimates**

Likelihood	Total value of subsidies identified in the ODI/CAN report.	Lower bound	Upper bound
Very likely	21.81 billion	80%	90%
		<i>17.44 billion</i>	<i>19.63 billion</i>
Likely	78.8 billion	50%	60%
		<i>39.4 billion</i>	<i>47.28 billion</i>
Less likely	6.92 billion	20%	30%
		<i>1.38 billion</i>	<i>2.08 billion</i>
Unlikely	12 billion	0%	5%
		<i>0</i>	<i>0.6 billion</i>
<b>Totals</b>		<b>58.22</b>	<b>69.59</b>

Before going into the detail assessment of the ODI/CAN figures and the explanation of the table 3, three points need to be born in mind from the start. First, EU measures such as the ECB’s bond buying programme or support via the EU’s development bank or direct payments by the EU are not subject to the EU state aid rules. However, this exemption should reduce the overall number by only about 4 billion, as this is the total amount of EU subsidies identified in the report.<sup>98</sup> Second,

<sup>98</sup> İpek Gençsü, Maeve McLynn, Matthias Runkel, Markus, Trilling, Laurie van der Burg, Leah Worrall, Shelagh Whitley, and Florian Zerzawy ‘Europe Overseas Development Institute and CAN Europe Report - Phase-out 2020:

as a general assumption, a great number of the identified subsidies can also be subject to EU state aid control due to the closeness of the WTO definition of subsidy and the EU definition of State aid.<sup>99</sup> This closeness means that the subsidies identified in ODI/CAN report as consisting of a) ‘fiscal support’ - that is to say, direct spending by government, tax breaks, as well as income or price support- b) ‘public finance’ – that is to say, support through the provision of grants, loans, equity and guarantees- and c) ‘investment by SOEs’ could all be subject to the State aid regime. Yet, a detailed analysis of each measure would need to be carried out in particular with regard to whether the measure is selective, that is to say specifically favours certain activities like fossil fuels. Third, in terms of investments, both by the State through development banks or through other SOEs, one would need to take into account of the market investor principle.<sup>100</sup> This principle means that whenever a State grants benefits under conditions that the company would not have been able to obtain from the market, State aid can be assumed.

#### a) Measures very likely subject to the EU State aid rules

This group of measures very likely subject to EU State aid rules, consists of two subcategories. First, any form of budget, price or financial support by means of direct payments to companies whether State owned or private would most likely fall within the EU State aid regime as the most direct form of aid paid to companies. The ODI/CAN report provides the following figures for this form of support: EUR 3.3 billion for coal mining, EUR 3.3 billion for oil and gas production and EUR 5.8 billion for electricity production. These figures are based on the specific country reports which provide more details.<sup>101</sup> Second, government provided insurance, loans or concessions for fossil fuel companies that are provided below market rate. Because the EU State aid rules use a market rate test to determine whether something is classified as State aid, these would most likely be covered by the EU State aid regime. The numbers of the ODI/CAN report are: For coal mining EUR 412 million, for oil and gas production EUR 7.3 billion and for electricity production EUR 1.7 billion. These figures are equally based on the individual country reports. Looking at these subsidies 21.81 billion Euros of the subsidies classified in the ODI/CAN report as fiscal support and public finance would be very likely subject to the State aid rules as they are provided by the government below the market rate and therefore provide an advantage to the relevant companies.

However, as always in law, a caveat is needed as this paper cannot pursue a detailed, fact-specific assessment which involves a close examination of all legal conditions surrounding these measures and the position of the companies. While expert judgment deems it is highly likely that these measures are State aid, there is still a possibility that—depending on the specific arrangement in which these subsidies are paid in the different Member States—these subsidies would not be considered to be State aid; for example, because they are available to all (and not only fossil fuel) companies or because the level each company receives is below the de minimis threshold. Overall, these findings can be summarised in this table.

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Monitoring Europe’s fossil fuel subsidies’ (28 September 2017) <https://www.odi.org/sites/odi.org.uk/files/resource-documents/11762.pdf> page 22.

<sup>99</sup> On the difference between EU State Aid regime and definition to eg the WTO definition of subsidy control see Luca Rubini, *The Definition of Subsidy and State Aid: WTO and EC law in Comparative Perspective* (OUP 2009).

<sup>100</sup> See Commission Notice on the notion of State aid as referred to in Article 107(1) of the Treaty on the Functioning of the European Union [2016] OJ C262/1 para 73ff.

<sup>101</sup> The country reports can be found here: <https://www.odi.org/publications/10939-phase-out-2020-monitoring-europes-fossil-fuel-subsidies>

**Table 4 Measure very likely to be subject to the EU state aid rules**

Likelihood	Total value of subsidies identified in the ODI/CAN report.	Lower bound	Upper bound
Very likely	21.81 billion	80%	90%
		<i>17.44 billion</i>	<i>19.63 billion</i>

#### b) Measures likely subject to the EU State aid rules

Less certainty exists regarding measures of what the ODI/CAN report calls ‘fiscal support’. These concern in particular tax measures. In this context, EU State aid law assesses whether these benefits are available only to a specific group of companies/industries or whether they are available more broadly. As the ODI/CAN report lists those as specifically addressed to fossil fuel it is likely that these measures are sufficiently selective considered State aid. The report, in particular, lists tax reductions such as deductions in the development phase of fossil fuel projects, tax breaks for the construction of refineries or plants for heat and electricity generation, or tax relief from property taxes or energy intensive processes. These would likely be subject to the EU State aid regime. Unfortunately, the ODI/CAN report does not provide a specific number for these subsidies but rather lumped them together with under the overall category of fiscal support. This category consists of EUR 78.8 billion and also includes government regulated prices for feedstock, tax breaks for diesel or other fuels, tax breaks for industries. While tax breaks for industries would likely to be subject to the State aid regime, the details with regard to tax breaks for diesel and other fuels as well as government regulated prices for feedstock are less clear. In the case of such measures the design determines whether a measure is considered State aid. The tax break for diesel in this context is also problematic because it might be that these are the result of EU rules rather than Member States’ activity. In this case they would not be State aid but EU support that is not covered under the EU State aid rules. In the case of other fuels that would equally depend on whether this is based on EU rules. But it is less likely to be based on EU rules as these mainly provide for special treatment of diesel. Moreover, there are cases where tax breaks for petrol and diesel have been considered State aid under EU law.<sup>102</sup> Overall, these findings can be summarised in this table.

**Table 5 Measure to be likely subject to the EU state aid rules**

Likelihood	Total value of subsidies identified in the ODI/CAN report.	Lower bound	Upper bound
Likely	78.8 billion	50%	60%
		<i>39.4 billion</i>	<i>47.28 billion</i>

#### c) Measures less likely subject to the EU State aid rules.

While the above-mentioned areas are very likely or likely to be subjected to the EU State aid regime, other areas that are based on a conservative assessment less likely to be subjected to it.<sup>103</sup> For

<sup>102</sup> See European Commission, Press release (27 April 2017), Taxation: Commission refers Italy to the Court of Justice over excise duty reductions for petrol and diesel, IP/17/1055.

<sup>103</sup> Although depending on the specific arrangements they might well be.

instance, *early retirement payments* for coal miners through government budgets estimated at 313 million are unlikely to be all covered by the EU State aid regime where these benefits are granted to individuals and not to companies or undertakings in the EU State aid lingo. Yet, where they are granted in a way that benefits companies such payments they might be subject to the State aid rules.<sup>104</sup> Another area that might fall into this category are *capacity mechanisms* or mechanisms that should ensure transition to renewable energy (ODI/CAN estimate for this around 4.3 billion). Whether capacity mechanisms are subject to the State aid rules depends heavily on whether they are technology neutral. Yet, there is a long line of EU cases the subject capacity mechanisms to the EU state aid rules.<sup>105</sup> Whether such mechanisms are subject to the EU State aid rules is highly fact specific and we have therefore in line with a conservative approach to estimates grouped them under measures less likely. Equally, *payments for the decommissioning or rehabilitation* are grouped under this category of less likely, in order to be provide a conservative estimate and because they often do not benefit specific companies.<sup>106</sup> Yet, where these payments are relieving companies from existing national or EU law requirements such payments would fall within the scope of the EU State aid rules. The ODI/CAN report estimates these at 314 million. A final group of the ODI/CAN report where it is unclear whether it would be subject to EU State aid rules are what it calls ‘Other Unspecified Forms Of Transition Support’ at the level of 2 billion. This group of measures might well be subject to the EU rules on State aid, but a more detailed individual assessment would be needed. Thus, it seems to be sensible to classify them conservatively as less likely. Overall, a total 6.92 billion Euros can be categorised as less likely to be subject to EU State aid law.

**Table 6 Measures to be less likely to the EU state aid rules**

Likelihood	Total value of subsidies identified in the ODI/CAN report.	Lower bound	Upper bound
Less likely	6.92 billion	20%	30%
		<i>1.38 billion</i>	<i>2.08 billion</i>

#### d) Measures least likely subject to the EU State aid rules

Finally, one might identify areas where the application of EU State aid rules is least likely, although this is always subject to the provision that the application depends on the actual set up of the system. These cases where the application of EU State aid rules is least likely are for example, government *regulated prices for feedstock* as mentioned above. These might not be providing a selective advantage to certain companies as the benefits of the system are available to everyone. Similarly, *investment by SOEs in plant operation and modernisation*, domestically and internationally (around 12 billion according to ODI/CAN) would be very unlikely to be covered by the EU State aid rules. Only where these investments could not have been obtained under market conditions EU State aid rules come into play. As already highlighted before tax breaks for diesel would equally be very unlikely fall under the EU State aid rules as these are often the result of EU action or not selective.

**Table 7 Measure to be least likely subject to EU state aid rules**

<sup>104</sup> However, see the Council Decision 2010/787/EU of 10 December 2010 on State aid to facilitate the closure of uncompetitive coal mines [2010] OJ L 336/24 which indicates that certain payments are State aid. This would increase our estimate further.

<sup>105</sup> See eg the decision SA.35980 of 16.09.2014 *GB capacity mechanism* or more recently SA.44725 of 26.07.2019 *Lithuanian PSO for security of electricity supply*

<sup>106</sup> See however the SA.42536 of 27.5.2016 *Closure of German lignite plants*; the Council Decision 2010/787/EU of 10 December 2010 on State aid to facilitate the closure of uncompetitive coal mines [2010] OJ L 336/24.

Likelihood	Total value of subsidies identified in the ODI/CAN report.	Lower bound	Upper bound
Unlikely	12 billion	0%	5%
		0	0.6 billion

Thus, overall we can conclude that the EU State aid rules would not cover all the areas highlighted in the ODI/CAN report that quantified the total fossil fuel subsidies in the EU at about 112 billion Euro. Yet, we estimate that 58.22-69.59 billion (or 51-62%) of these could already be addressed by EU State aid rules. However, this estimation provides only a first snapshot. Due to its methodology of using the ODI/CAN report as starting point it can by no means replace a detailed assessment of the individual measure under the EU's State aid regime. From a legal point of view, the actual design of the measure matters and substantially effects the outcome. Thus, a measure that has above been qualified as likely to be subject to the EU State aid rules might, in a specific case, not fall under the regime. Yet, the opposite is also true: measures that have been qualified as least likely to be subject to the EU State aid regime might be subject to it. Nonetheless, our estimates are based on the typical, straightforward design of such subsidies systems so sufficient have a good reliability. Moreover, the ODI/CAN report excluded some measures fossil fuel support measures from its calculations that would be subject to the EU State aid regime. In particular, any aid given in the context of transport infrastructure, grid systems of the distribution of electricity are excluded from the ODI/CAN report but may very well be subject to the EU's State aid rules. Similarly, EU State aid rules would also cover benefits provided in the context of plant construction, operation and distribution for petrochemicals and any support provided at the sub-national as well as pay-outs in investor-state disputes. Hence, the total of the subsidies for fossil fuels that are subject to EU State aid rules can be substantial and may well be not too far off the 112 billion Euros highlighted in the ODI/CAN report.

### 5.3 Discussion: The consequences of EU State aid law and making use of the toolbox

The EU rule on State aid are one of the most powerful tools that the EU Commission has in addressing economic activities in EU Member States. Numerous consequences can result from a measure being within the scope of the EU state aid law. In the following section, we briefly highlight the powers of the Commission and the State aid procedures, as well as the conditions under which State aid can be allowed. We argue that the EU state aid tools are helpful but nonetheless underutilised by the EU to actively advance its climate change policy and comply with its international commitments to reduce fossil fuel subsidies. This is so for three reasons:

First, the EU can monitor and stop illegal State aid. This power stems from the notification requirement. Any fossil fuel subsidy of a Member State that qualifies as State aid under Article 107(1) TFEU (and is not subject to a block exemption and in particular the General Block



Exemption Regulation<sup>107</sup> needs to be notified<sup>108</sup> to the Commission.<sup>109</sup> In other words, the measure needs to be reported to the Commission and the Member States must wait<sup>110</sup> with the implementation of the aid until the Commission has decided on the legality of the aid. To ensure the effectiveness of this notification requirement, so that Member States do not simply circumvent it, the Commission can order the State not to implement the aid measures or where this has already happened in contravention of the obligation imposed, order the recovery<sup>111</sup> according to Article 13.<sup>112</sup>

Second, the EU rules create transparency which allows for public scrutiny and increased public pressure. This transparency is achieved in three different way. In 2016, a general transparency requirement came into force. Thus, the name of the beneficiary, the amount, the location, the sector, and the objective of the aid that have been notified and authorised are now publicly available in the State Aid Transparency Public Search. Based on this information, the EU publishes the yearly State Aid Scoreboard which summarises the expenditure for State aid by the different EU Member States and the relevant areas for which State aid has been granted. This report serves to bench mark the Member States and is based on their mandatory yearly submissions reporting existing aid.<sup>113</sup> Additionally, the Commission has the power to start State aid sector inquiries. Such inquiries examine the whole sector to provide the Commission with a better understanding of its functioning and to uncover aid measures that do not comply with the legal framework. The only sector inquiry that the Commission conducted so far in the energy sector was on capacity mechanisms, in 2016. These transparency tools can be used and further enhanced to increase their effectiveness to ensure that the EU can deliver on its climate change commitments to reduce fossil fuel subsidies. In particular, the EU can categorise, record, track and scores State aid measures for fossil fuels separately. Currently, the EU does not recognise fossil fuels subsidies or more precisely State aid for such fuels as a separate category of State aid. Thus, the EU's State Aid Score Board does not contain a category that shows how much State aid is provided for fossil fuels. Instead, many of the fossil fuel subsidies will likely be summaries under Energy and Environmental Aid which in 2016 totalled 45,3 Billion Euro or as "aid for research and development". The problem with this

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<sup>107</sup> Commission Regulation (EU) No 651/2014 of 17 June 2014 declaring certain categories of aid compatible with the internal market in application of Articles 107 and 108 of the Treaty [2014] OJ L 187/1. This Regulation provides exemptions for a number of aid forms. In general, the Regulation aims at preventing aid for the operation of activities (operating aid) but is more lenient to aid for the setting up of such activities (investment aid) with the aim of achieving a so-called incentive effect. This effect is stipulated in Article 6 of the Regulation and should ensure that the activity of the undertaking is the result of the aid and would not otherwise have been undertaken, in this way any free-riding effects should be minimised. Thus, one would expect that any aid measure like the continued support to produce fossil fuels would not meet the test due to the missing incentive effect.

<sup>108</sup> There are some exceptions to this requirement of notification. The first relates to old or existing aid, such aid does not need to be notified (Either because they have already been reported or because they predate the existence of the EU.) but the Commission according to Article 108 (1) TFEU keeps them under 'constant review ... [for] the progressive development or [...] the functioning of the internal market.' The second exception relates to measures that are covered by the Block Exemption. The others relate to *de minimis* aid, that is to say smaller amounts of aid (Amounts not exceeding €200,000 per undertaking over any period of 3 fiscal years (or €100,000 in the road transport sector) and aid which is granted under a scheme which had previously been authorised by the Commission.

<sup>109</sup> The details of the procedure are set out in Council Regulation (EU) 2015/1589 of 13 July 2015 laying down detailed rules for the application of Article 108 of the Treaty on the Functioning of the European Union [2015] OJ L 248/9.

<sup>110</sup> See also Article 3 of Council Regulation (EU) 2015/1589.

<sup>111</sup> That is to say the repayment of the moneys from the undertaking to the State, as happened in the famous Apple Irish tax case.

<sup>112</sup> Of the Council Regulation (EU) 2015/1589.

<sup>113</sup> This obligation is imposed by Article 5 of Commission Regulation (EC) No 794/2004 of 21 April 2004 implementing Council Regulation (EC) No 659/1999 laying down detailed rules for the application of Article 93 of the EC Treaty [2004] OJ L 140/1.

categorisation is that it lumps environmental aid designed to address climate change together with aid for energy whether this is energy aid for renewables or aid for the fossil fuel industry, and whether this is aid for reducing greenhouse gas emissions or provide capacity, which are different objectives of common interest. Establishing a separate category of fossil fuel aid allows the EU not only to name and shame but also to change the conditions under which such aid can be granted. It would offer the chance to successively reduce the available aid by means of the Commission's power to allow or disallow State aid (more on that below). Such an approach would be in line with the EU's commitment to reduce its greenhouse gas emissions by 2030 as compared to the historical levels of 1990 and to phase out fossil fuels and the Green Deal. Moreover, such an approach would introduce more standardisation, accountability and transparency into the granting of such subsidies by means of the notification and publication requirements. Additionally, the launch a sector inquiry by the Commission could help to better measure and understand the fossil fuel subsidies. This would allow the Commission not only to discover subsidies that fall under the EU State aid rules and have not been notified but would provide also for an empirically grounded assessment of such measures under the EU State aid rules.

The third reason why the EU state aid tools are helpful in addressing fossil fuel subsidies in the EU is the power of the Commission to determine what State aid is legal and under what conditions such aid can be granted. Any measure that satisfies the conditions of Article 107 (1) TFEU and is not compatible with the internal market by virtue of Article 107 (2) TFEU, needs to be *declared compatible by the European Commission*. Such a declaration of compatibility is possible by means of specific exemption regulations<sup>114</sup> or by a decision of the Commission based on Article 107 (3) TFEU. The general yard stick in this regard is Article 107 (3) TFEU. In the context of this Article but also in the adoption of block exemption regulations by the Commission, the Commission has a considerable degree of discretion. This discretion has to be exercised within the European interests in mind and can equally take account of the EU's international commitments.<sup>115</sup> This has two consequences. On the one hand, the Commission has the power to stop and order the recovery of any fossil fuel subsidy that does not fulfil the conditions of Article 107 (3) or the Block Exemption. In general, the Commission's approach in the Regulation and its decisional practice aims at preventing aid for the operation of activities (operating aid) but is more lenient to aid for the setting up of such activities (investment aid). This is based on the so-called incentive (see also Article 6 of the Regulation). It should ensure that the activity by companies is the result of the aid and would not be undertaken otherwise, in this way any free-riding by companies is minimised. As a result of this requirement it can be expected that any aid measure like the continued support to produce fossil fuels would not meet the test due to the missing incentive effect and thus be prohibited. On the other hand, it can use its discretion to further toughen up the requirements for those subsidies that are still legal under the current framework in order to gradually phase out fossil fuel subsidies. Establishing a separate category of fossil fuel aid will be helpful in this regard. Such a category allows the Commission to actively monitor and report on such fossil fuel subsidies, as well as change the conditions under which such aid can be granted.

## 6. Conclusion

This paper has aimed to identify and analyse potential legal avenues for phasing out fossil fuels in the European Union using EU state aid rules. The paper explored the defining elements of State

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<sup>114</sup> Furthermore, the prohibition of Article 107(1) TFEU may not apply, in cases where the aid distorts competition but this restriction is necessary for the provision of a service of general interest, because of Article 106(2) TFEU. Typical examples are utilities like telecoms.

<sup>115</sup> See eg Art 2 and 3 TEU which require the EU to strive for 'wellbeing of its people', 'sustainable development', 'environmental protection' and should contribute to sustainable development on the international scene while ensuring 'strict observance and the development of international law'.

under Article 107 TFEU and reveals various features that make EU State aid control a potentially effective policy tool with the requirements for notification, examination, transparency and reporting, and recovery of unlawfully granted aid. The analysis suggests that the EU can make full use of the State aid rules to control fossil fuel subsidies by establishing a separate category of fossil fuel subsidies and should show its commitment to start a sector inquiry into fossil fuel. Such action would be in line with the EU Parliament's recent call for 'net-zero' emission by 2050,<sup>116</sup> the Green Deal and make such State aid measures more transparent.

While we acknowledge that the characteristics of the State aid rules prevents addressing the full range of fossil fuels subsidies as defined by e.g the IMF or the OECD/IEA. Based on current figures of ODI/CAN reports using the WTO definition of subsidies, our analysis of the EU State aid rules suggests that that 58.22-69.59 billion (or 51-62%) of the current yearly fossil fuel subsidies in the EU have the potential to be addressed and phased out by means of the EU State aid rules. Most likely the number is even higher as these estimates are conservative and the ODI/CAN report is based only on the 11 biggest EU economies. Thus, despite inherent limitations, the EU state aid toolbox offers various possibilities to the EU to actively advance its climate change policy and comply with its international commitments to reduce fossil fuel subsidies.

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<sup>116</sup> See Frédéric Simon, Parliament backs 'net-zero' carbon emissions by 2050 (18 Jan 2018) EURACTIV <https://www.euractiv.com/section/climate-environment/news/parliament-backs-net-zero-carbon-emissions-by-2050/>