

# Energy Tax Expenditures in a Globalized Economy

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Discussion Note 2018/2

#### Abstract

Countries around the world have introduced energy taxes to expand revenues, reduce energy consumption and curb greenhouse gas emissions. In that context, they have frequently also implemented tax provisions to lower the energy tax bill for certain industries, households and regions. Tax exemptions and deductions for energy intensive companies are a case in point. Tax reductions on specific fuels and electricity provide further illustration.

As tax privileges granted through any tax system, energy tax expenditures create economic distortions and raise distributive concerns. They also decrease the effectiveness of energy taxation. Moreover, in the context of international trade, they are likely to raise as much controversies as straightforward subsidies.

Against this background, the following study aims to provide an overview on the use of tax expenditures in the context of energy taxation in the G20 and the OECD, to evaluate the rationale for different tax expenditures, to review their alignment with international trade provisions, and to outline policy implications for the design of energy taxation schemes moving forward. In that context, it also highlights the important role of thorough analysis in determining the concrete features of energy tax expenditures as well as of international cooperation and increased transparency through comprehensive tax expenditure reporting.

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#### Acknowledgements

This CEP Discussion Note was written with the financial support of the Korea Productivity Center.

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#### 1 INTRODUCTION

Countries around the world have introduced energy taxes to expand revenues, reduce energy consumption and greenhouse gas (GHG) emissions. In that context, they have frequently also implemented tax provisions to lower the energy tax bill for certain industries, households and regions. Tax exemptions and deductions for energy intensive companies are a case in point. Tax reductions on specific fuels and electricity provide further illustration.

As for other taxes with particularly mobile tax bases, international competitiveness plays a crucial role when it comes to the design of energy tax schemes. Indeed, concerns around competitiveness are sometimes seen as one of the main constraints for the negotiations around energy taxes and climate change to move forward. As already stated in an IMF working paper in 1998, "...the worry about the loss of international competitiveness is probably the one that is currently stopping a more widespread adoption of carbon taxes."<sup>1</sup> A key focus in that context lies on energy taxes to be too burdensome. In this context, many decide to relocate if they consider energy taxes to be too burdensome. In this context, many companies and commentators argue that exemptions and reductions in the context of energy taxation are critical to mitigate the loss in international competitiveness that energy taxes may create. They also highlight that failing to introduce such tax expenditures (TEs) may cause firms to move to jurisdictions where energy is taxed at lower rates, and thus jeopardizes the goal of reducing global GHG emissions.

In addition, the introduction of energy taxes is often accompanied by exemptions and reductions to mitigate their impact on low and moderate-income households. Energy tax benefits for specific products and regions, including tax free zones, also abound.

As tax privileges granted through any tax system, energy TEs create economic distortions and raise distributive concerns. Moreover, in the context of international trade, they are likely to raise as much controversies as straightforward subsidies. They also reduce the effectiveness with regard to what is often a key objective of energy taxation: reducing energy consumption, increasing energy efficiency, and curbing GHG emissions.

Against this background, the following study aims to provide an overview on the use of TEs in the context of energy taxation in the G20 and the OECD, to evaluate the rationale for different TEs, to review their alignment with international trade provisions, and to outline policy implications for the design of energy taxation schemes moving forward.

<sup>&</sup>lt;sup>1</sup> Cuervo and Gandhi (1999), p. 164.

## 2 TAXING ENERGY

Energy taxes play a central role to shift economies towards a sustainable energy future. Unlike other policy instruments such as regulation and public investment, they affect consumer and producer behavior via their impact on relative prices. As a result, energy taxes are among the most cost-effective policy tools to internalize the negative externalities of energy use and, hence, to reduce GHG emissions.<sup>2</sup>

Experience with energy taxation goes back a long way. Germany introduced a petroleum duty on the price of heating oil in 1879, and started charging a fuel tax in 1930.<sup>3</sup> The United Kingdom started levying a petrol tax in 1909.<sup>4</sup> In the United States, the State of Oregon introduced a tax on gasoline in 1919. By 1932, all other states and the District of Columbia as well as the federal government had followed suit.<sup>5</sup>

Today, all OECD members and many non-OECD economies within the G20 levy taxes on energy products. Schemes are highly heterogeneous across economies, e.g. ranging from energy taxes amounting to close to 3% of GDP in Italy down to zero in Mexico (see Figure 1), as well as effective tax rates on e.g. transport energy of just above zero in Indonesia and Russia to close to EUR 19 per GJ in the United Kingdom.<sup>6</sup>



#### Figure 1: Environmentally related tax revenue as a percentage of GDP, 2014

#### Source: OECD.Stat

Energy taxes also vary significantly across energy uses. OECD (2015b) shows that – among OECD economies and seven selected partner countries that jointly make up 80% of energy use and nearly 84% of global carbon emissions from energy use – transport energy is taxed

<sup>&</sup>lt;sup>2</sup> See, for instance, Goulder and Parry (2008) and Aldy and Stavins (2012).

<sup>&</sup>lt;sup>3</sup> Jung (2012).

<sup>&</sup>lt;sup>4</sup> Geschwind (2017).

<sup>&</sup>lt;sup>5</sup> Bickley (2012).

<sup>&</sup>lt;sup>6</sup> Finnish Energy Industries (2010), OECD (2015b).

at significantly higher rates than other forms of energy use. Fuels for heating and process use or electricity generation are often untaxed or taxed at lower rates (see Table 1).

		Oil products	Coal and peat	Natural gas	Biofuels and waste	Renewables and nuclear	All fuels
	% of	27%	34%	20%	9%	11%	100%
	Dase						
Transport use	18	5.20	0.00	0.12	3.74	0.00	4.96
Heating and process use	42	0.82	0.05	0.21	0.00	0.00	0.26
Electricity production	40	0.50	0.13	0.43	0.65	0.38	0.27
Total use	100	3.52	0.10	0.28	0.30	0.38	1.11

Table 1: Weighted average effective tax rates on energy by fuel type and use (EUR per GJ)

Source: OECD (2015b), p. 41.

In the EU, energy taxes amounted to close to 2% of GDP and close to 5% of total government revenues in 2015. On average, energy taxes in the EU increased from below EUR 200 per ton of oil equivalent in 2002 to over EUR 230 in 2015.<sup>7</sup>

Energy taxation in the EU is subject to the Energy Taxation Directive which entered into force in 2004. The directive sets minimum levels of taxation for motor and heating fuels as well as electricity, e.g. EUR 421 per 1'000 liters (EUR 12.69 per GJ) for leaded gasoline, EUR 359 per 1'000 liters (EUR 10.82 per GJ) for unleaded gasoline, and EUR 1 per MWh (EUR 0.28 per GJ) respectively EUR 0.5 (EUR 0.14 per GJ) for non-business and business electricity consumption.<sup>8</sup> Member States may levy higher taxes beyond these thresholds. The directive also defines the exemptions and reduced levels of taxation that Member States are allowed to offer.

As a result, and as in the OECD, the variation in tax rates across countries, fuels and uses is considerable within the EU. While several Member States tax at or close to the threshold levels, others have moved significantly beyond them. Germany is a case in point with e.g. taxes of EUR 721 per 1'000 liters of leaded gasoline, EUR 654.50 per 1'000 liters of unleaded gasoline, and EUR 20.5 per MWh for electricity.<sup>9</sup> Similarly, the share of taxes – including value added tax (VAT) – and levies in the total electricity price for households ranges from under 5% in Malta to 68% in Denmark, the proportion of non-recoverable taxes in electricity prices for industrial consumers spans from zero in Malta to 47% in Germany, and the contribution of taxes to household prices for natural gas stretches from 7% in the United Kingdom to 58% in Denmark.<sup>10</sup>

<sup>&</sup>lt;sup>7</sup> Eurostat (2017b).

<sup>&</sup>lt;sup>8</sup> EC (2003). The GJ equivalents are quoted from OECD (2013), p. 32.

<sup>&</sup>lt;sup>9</sup> Bundesministerium der Justiz und für Verbraucherschutz (2017a) and Bundesministerium der Justiz und für Verbraucherschutz (2017b). <sup>10</sup> Eurostat (2017a) and Eurostat (2017c).

In the United States, the federal government levies an excise tax of 18.4 cents per gallon (USD 1.45 per GJ) on gasoline and 24.4 cents per gallon (USD 1.68 per GJ) on diesel. Average additional state taxes amount to 27.85 cents per gallon on gasoline and 28.62 cents per gallon on diesel.<sup>11</sup> Except for a federal levy on fuels for domestic commercial aviation, other energy products are solely subject to state or municipal taxes.<sup>12</sup> Examples include the Climate Action Plan tax levied by the City of Boulder<sup>13</sup>, the tax that municipalities in Utah may apply to gas and electricity delivered within their jurisdiction<sup>14</sup>, and the electricity excise tax levied on persons distributing, supplying, furnishing, or selling electricity in Illinois for use and consumption (not for resale).<sup>15</sup>

Canada applies a federal excise tax of CAD 0.10 per liter to unleaded gasoline, ethanol and unleaded aviation gasoline, as well as a tax of CAD 0.04 per liter to diesel, biodiesel and aviation fuels other than aviation gasoline. As in the United States, additional energy taxes are applied on a provincial level – including carbon taxes by the provinces of Alberta and British Columbia.<sup>16</sup>

The taxation of energy among Asian economies is highly heterogeneous as well. As highlighted in Figure 1, energy tax revenue as a percentage of GDP in the regions' three largest economies – China: 0.6%, India: 0.5%, and Japan: 1% – is on the lower end of the scale. In contrast energy taxes in Turkey and South Korea amount to 2.6% respectively 1.9% of GDP.<sup>17</sup>

China does not tax electricity consumption but introduced excise taxes on almost all oil products and uses in 2009, with the diesel tax rate being roughly 2/3 of the one applied to gasoline.<sup>18</sup>

In Japan, the central government levies a variety of energy taxes including a gasoline tax, an oil and gas tax, an aviation fuel tax, a petroleum and coal tax, an electric power development promotion tax as well as a "tax for climate change mitigation" on CO2 emissions. Japanese prefectures also levy a diesel oil delivery tax.<sup>19</sup>

According to OECD (2015b), "India has the 4th lowest tax rate on energy on an economywide basis, at EUR 0.27 per GJ, compared with EUR 2.7 per GJ on simple-average basis across the 34 OECD and 7 partner economies." Moreover, on average only 53% of CO2 emissions

<sup>&</sup>lt;sup>11</sup> US EIA (2017). See <u>https://www.eia.gov/energyexplained/index.cfm?page=about\_energy\_conversion\_calculator</u> for conversion factors. <sup>12</sup> OECD (2013), p. 231.

<sup>&</sup>lt;sup>13</sup> <u>https://bouldercolorado.gov/climate/climate-action-plan-cap-tax</u>.

<sup>&</sup>lt;sup>14</sup> http://tax.utah.gov/utah-taxes/municipal-energy.

<sup>&</sup>lt;sup>15</sup> http://www.revenue.state.il.us/Businesses/TaxInformation/Excise/elecexcise.htm.

<sup>&</sup>lt;sup>16</sup> Natural Resources Canada (2017).

<sup>&</sup>lt;sup>17</sup> OECD.Stat.

<sup>18</sup> OECD (2015b).

<sup>&</sup>lt;sup>19</sup> Ministry of the Environment of Japan (2017).

from energy use are priced by taxes, the share being strikingly lower for the residential and commercial sector (6%).<sup>20</sup>

At the same time, the momentum for energy taxation in the region is growing. In 2016, India introduced an excise tax on coal production and imports, amounting to INR 400 (USD 6) per ton of coal. Moreover, since 2014, excise taxes on petrol and diesel have gone up by more than 150%.<sup>21</sup> Singapore announced the implementation of Southeast Asia's first carbon tax as from 2019. The tax is planned to be set between S\$10 (USD 7) and S\$20 (USD 14) per ton of CO2 (and five other greenhouse gases), and is expected to increase electricity costs by 2% to 4%.<sup>22</sup> South Korea provides another example as the recently elected government aims to raise the share of renewable energy up to 20% of total electricity generation by 2030, " ...by seeking to levy environmental taxes on coal and nuclear".<sup>23</sup>

While earlier energy taxes were focused on revenue generation, many of the schemes that were launched since the 1990s shifted emphasis towards providing an incentive to increase energy efficiency and reduce GHG emissions. As a result, a growing number of energy tax schemes are linked to the carbon content of energy products. Finland's carbon tax, the first of its kind launched in 1990, is a case in point. The tax reform that is currently being debated in Argentina provides another example, as the comprehensive reform package includes an explicit proposition to align the taxation of fuels with CO2 emissions.<sup>24</sup>

# 3 ENERGY TAX EXPENDITURES IN G20 AND OECD ECONOMIES

Energy tax schemes frequently include a myriad of exemptions and deductions that are meant to mitigate a possible loss in corporate competitiveness, potential hardships among households facing higher energy prices, as well as specific regional effects.

In that context, the following chapters zoom in on the energy TEs that are granted by governments in G20 and OECD economies, and explores the existing empirical evidence on the effectiveness and efficiency of these schemes, as well as their compatibility with international trade rules.

<sup>&</sup>lt;sup>20</sup> OECD (2016).

<sup>&</sup>lt;sup>21</sup> Parry et al. (2017).

 <sup>&</sup>lt;sup>22</sup> Murtaugh (2017).
<sup>23</sup> Chung (2017).

<sup>&</sup>lt;sup>24</sup> Fernandez Blanco (2017).

#### **BOX 1: DEFINITION AND MEASUREMENT OF TAX EXPENDITURES**

#### Definition

The TE concepts was introduced by Stanley Surrey, a former Harvard professor and Assistant Secretary of the United States Treasury, who highlighted the fact that government support for specific groups or activities is often granted through tax privileges rather than direct spending. In 1974, the United States Budget Reform Act provided a formal definition of TEs as "those revenue losses attributable to provisions of the Federal tax laws which allow a special exclusion, exemption, or deduction from gross income or which provide a special credit, a preferential rate of tax, or a deferral of tax liability...".<sup>25</sup>

As straightforward as this definition may sound, the debate on what should be considered a TE and what not – and what should thus be counted when measuring their magnitude – continues until today.

Most economies define TEs as deviations from a – usually country-specific – benchmark. Defining TEs as departures from a country-specific benchmark provides a solid starting point for national TE reporting. Differences in national tax structures and thus in benchmarks, however, will lead to certain tax provisions being considered as TEs in one country, and not in another, posing a significant challenge for international comparability.

Against this background, some studies aim at defining a standard benchmark for each TE across different countries. Oosterhuis et al. (2014) is an example. The authors identify and quantify TEs on fossil fuels in all 28 EU Member States. Whereas for TEs related to VAT, as well as corporate and personal income taxes they apply country-specific benchmarks, they use the draft rates in the Commission's 2011 proposal for amending the Energy Taxation Directive (COM (2011) 169) as a harmonized benchmark across all Member States for energy taxes. Obviously, such an approach does not come without caveats either. Applying the proposed energy tax rate as a standard benchmark across the EU members blends out different political preferences between countries. The strong opposition by both the European Parliament and the European Council to the Commission's proposal for a new EU Energy Tax Directive highlighted how significant these differences can be. The Commission withdrew its proposal in 2015.

#### Measurement

A solid quantification of TEs is key to evaluate their effects. Estimating the cost of TEs offers different possible approaches, with no method being an uncontested best option.

The three main methodologies to measure TEs are the following ones:

<sup>&</sup>lt;sup>25</sup> Surrey and McDaniel (1979), p. 231.

- I. *Revenue foregone approach*: estimates the amount by which taxpayers have their tax liabilities reduced as a result of a TE based on their actual current economic behavior.
- II. *Revenue gain approach*: estimates the additional revenue that would be collected if a TE was removed, and accounting for behavioral changes resulting from this removal.
- III. Outlay equivalent approach: estimates the government cash outlay required for an alternative direct spending program replacing the TE that would have the same benefit for the taxpayers. As the revenue forgone method, it assumes no behavioral change.

Each of these approaches has its pros and cons. And each of them will provide different estimates of the size of a TE. On the one hand, direct spending and tax benefits are alternate mechanisms to achieve a given goal. Hence, the preferred method to evaluate policy alternatives would be the outlay equivalent approach, because it allows for a comparison between TEs and direct spending.<sup>26</sup> On the other hand, in practice, it might be impossible to design an outlay program that gives the taxpayer exactly the same benefit as a correspondent TE.<sup>27</sup>

Between the revenue foregone and gain approaches, the latter offers a more accurate estimate as it takes behavioral changes into account. Indeed, the fact of not internalizing behavioral changes is one of the most significant weaknesses of the revenue foregone method. Taxpayers are likely to respond to the removal of a TE by changing their economic behavior. To accurately estimate the fiscal effect of removing or introducing a TE, a reflection of these changes is critical.

Nevertheless, and probably because of its relative simplicity, most countries report TEs based on the revenue forgone approach.<sup>28</sup> Some of them do provide figures based on the other two methods but only as a complement to the measurement based on revenue foregone. For example, from the Fiscal Year 1984 Budget until 2008, the United States Treasury presented outlay equivalent estimates on top of their standard revenue foregone-based figures. Similarly, in Chapter 3 of its yearly Tax Expenditures Statement, the Australian Treasury provides estimates of a select group of TEs based on the revenue gain approach, in addition to the standard estimates based on the revenue forgone method.<sup>29</sup>

Finally, one should be careful when it comes to the interpretation of TE figures. In spite of their significant impact, the potential interconnections between the different schemes are often not taken into account when computing the cost of TEs. Adding up all the individual costs computed separately and without taking behavioral changes into account would not

<sup>&</sup>lt;sup>26</sup> Davidson (2012).

<sup>&</sup>lt;sup>27</sup> Myles et al. (2014).

<sup>&</sup>lt;sup>28</sup> OECD (2010).

<sup>&</sup>lt;sup>29</sup> Australian Treasury (2016).

result in a figure that represents the total cost of all TEs. In this context, the Australian Treasury highlights that "it is not appropriate to aggregate revenue forgone estimates. As indicated above, revenue forgone estimates do not take account of potential changes in taxpayer behavior following the (hypothetical) removal of a TE. However, in reality such changes in behavior would be likely to occur – in particular, the removal of one TE would often affect the utilization of other schemes. Aggregating revenue forgone estimates therefore risks significantly amplifying the limitations inherent in this method of estimating the size of tax expenditures."<sup>30</sup> Others in contrast, add up the TEs granted through the different tax bases in order to provide the order of magnitude of those schemes.<sup>31</sup>

## 3.1 ENERGY TAX EXPENDITURES FOR BUSINESSES

The introduction of energy taxes has frequently coincided with debates about their effects on global competitiveness. Concerns center around the fact that a tax on energy may lead to a loss in competitiveness, particularly in energy-intensive and trade-exposed sectors, when other countries do not introduce similar taxes.<sup>32</sup> If significant, such a negative impact would also have an effect on national economies, as less competitive countries are likely to suffer in terms of revenue collection through the erosion of their tax base. In addition, from a global point of view, there is a risk of emissions leakage, i.e. a negative spill-over effect that arises when polluting firms relocate to countries where energy is taxed at lower rates (or not taxed at all), that may jeopardize the objective of reducing global GHG emissions.

#### BOX 2: TAX COMPETITION IN A GLOBALIZED ECONOMY

Globalization has significantly changed the world. The integration of markets has contributed to increasing mobility of both capital and labor. National governments worldwide face the crucial challenge of adapting their policies to this dynamic context.

Fiscal policy is a case in point. The mobility of firms and people results in the fact that countries find themselves increasingly in competition for tax revenue – both through the definition of the tax base as well as by setting tax rates.

Some observers argue that such tax competition is welfare enhancing, as politicians – they argue – are often self-interested 'Leviathans' (i.e. self-interested revenue maximizers) whose preferences for big government may be counterbalanced by tax competition.<sup>33</sup>

Others point to the risk of a race to the bottom in the taxation of mobile tax bases. Corporate taxation provides an illustration. Whereas global corporate income tax (CIT)

<sup>&</sup>lt;sup>30</sup> Australian Treasury (2016), p. 6.

<sup>&</sup>lt;sup>31</sup> See, for instance, Astarita et al. (2014), Myles et al. (2014) and Tyson (2014).

<sup>&</sup>lt;sup>32</sup> See, for example, Metcalf (2013) and Brys et al. (2016).

<sup>&</sup>lt;sup>33</sup> Brülhart and Jametti (2016) provide a discussion of the tax competition literature.

revenue has been stable over time, CIT rates have been on a downward trend. In the EU, for instance, CIT revenue has been stable both as a share of GDP – 2.3% in 2003, 2.5% in 2015 – and of total tax revenue – 6.3% in 2003, 6.4% in 2015. On the other hand, the average top CIT rate has dropped significantly, from 27.8% in 2003 to 21.9% in 2017.<sup>34</sup>

Observers also highlight the need to safeguard policy space that allows governments to introduce taxes, not just to raise revenue, but also to internalize external effects to protect public goods. Energy taxation to reduce GHG emissions is an example – and a case where free-riding, defined as one agent benefitting from the actions and efforts of another without paying or sharing the costs, makes action without coordination even more complicated. As highlighted by Tarschys (2015), "in a globalising world, there are potential public income sources that are not only untapped but even untappable for national governments, i.e. simply beyond their reach because several tax bases have become so footloose and etheric … Where regulatory intervention is required, the loopholes and opportunities for evasion are simply too large if one country after another tries to go it alone. When markets reach an advanced stage of globalisation, with producers and consumers spread over many continents, with value chains increasingly intricate and complex, with polluters, criminals, germs and other threats to the public order widely dispersed throughout the world, the option of regulatory Alleingang simply fades away. It is joint action, or no action at all."<sup>35</sup>

The extent to which such "joint action" is desirable remains subject to debate. Nonetheless, calls for more coordination in global corporate tax policy are steadily moving up policy agendas. The OECD/G20 initiative on Base Erosion and Profit Shifting as well as the debate around the harmonization of the corporate tax base among EU member states are cases in point.

Against this background, governments worldwide on both the national as well as subnational levels offer a myriad of TEs that reduce energy taxes for specific sectors of the economy.

A frequent recipient of such benefits are primary industries such as farming, forestry, fisheries and mining. Cases in point include a reduced rate of excise tax for the use of diesel fuel and gasoline in agriculture, forestry and fishery in Italy that lead to EUR 1.1 billion in revenue foregone in 2014<sup>36</sup>, as well as energy tax refunds for diesel used in agriculture and forestry in Germany of EUR 450 in 2016<sup>37</sup>, fuel tax credits for agriculture and fisheries in

<sup>&</sup>lt;sup>34</sup> European Commission Data on Taxation, <u>https://ec.europa.eu/taxation\_customs/business/economic-analysis-taxation/data-taxation\_en</u>.

<sup>&</sup>lt;sup>35</sup> Tarschys (2015), p.2.

<sup>&</sup>lt;sup>36</sup> OECD Inventory of Support Measures for Fossil Fuels, <u>http://www.oecd.org/site/tadffss/data/</u>.

<sup>&</sup>lt;sup>37</sup> Bundesministerium der Finanzen (2017).

Mexico of USD 150 million in 2014, and a sales tax exemption for diesel used in farming in the State of California amounting to USD 60 million in 2014.<sup>38</sup>

Tax benefits for electricity production and consumption are a further case in point. Germany offers various exemptions or reductions from its electricity tax – including a reduction for energy intensive firms that amounted to EUR 1.6 billion in 2016.<sup>39</sup> The State of Louisiana waives its sales tax on the purchase of electric power or energy for non-residential use – an exemption that led to revenue foregone of USD 403 million in 2014. The US State of Kentucky offers a special sales and use tax exemption on the purchase of coal used to generate electricity that amounted to USD 78 million in 2014.<sup>40</sup>

Energy TEs for the transportation sector also abound. Italy offers refunds for trucking companies on fuel excise taxes that amounted to EUR 1.5 billion in 2014, as well as a fuel tax exemption for shipping that resulted in revenue foregone of EUR 638 million in 2014.<sup>41</sup> France and Italy both grant tax rebates for the consumption of gasoline and diesel fuel to taxi drivers. Greece has several provisions in place to support its tourism sector, including an excise tax refund for fuels used in tourist boats. In Portugal, sales of motor fuels are exempt from the fuel excise tax (the ISP), when used in coastal and inland water commercial navigation. A similar scheme exempts the sale of fuel when used in railway locomotives.

TEs for the aviation sector provide further illustration. Various bilateral agreements between countries as well as the 1944 Chicago Convention exempt international flights from fuel taxes.<sup>42</sup> In addition, lower tax rates or exemptions apply to domestic flights in countries around the world as well. The AUD 1.5 billion in revenue foregone due to reduced excise rates for aviation fuel used for domestic flights in Australia are a case in point.<sup>43</sup>

Similarly, energy intensive firms frequently receive special tax treatment in the context of carbon taxes. The Swiss CO2 Levy is an example. It taxes fossil heating and process fuels (e.g. heating oil, natural gas, coal, petroleum coke) and currently amounts to CHF 84 per ton of CO2 emitted. Energy intensive companies are exempt from paying the CO2 tax if they take part in the country's emission trading scheme (ETS) or reach a target agreement with the government to reduce CO2 emissions.<sup>44</sup>

Sweden is another example. The government introduced a carbon tax in 1991 as a complement to the energy taxes that were already in place. The taxation scheme was modified several times but, as a general rule, it has always offered privileges to the industrial sector. Indeed, "to avoid carbon leakage in sectors subject to international competition, the

<sup>&</sup>lt;sup>38</sup> OECD Inventory of Support Measures for Fossil Fuels, <u>http://www.oecd.org/site/tadffss/data/</u>.

<sup>&</sup>lt;sup>39</sup> Bundesministerium der Finanzen (2017).

<sup>&</sup>lt;sup>40</sup> OECD Inventory of Support Measures for Fossil Fuels, <u>http://www.oecd.org/site/tadffss/data/</u>.

<sup>&</sup>lt;sup>41</sup> OECD Inventory of Support Measures for Fossil Fuels, <u>http://www.oecd.org/site/tadffss/data/</u>.

<sup>&</sup>lt;sup>42</sup> Transport & Environment (2013).

<sup>&</sup>lt;sup>43</sup> OECD Inventory of Support Measures for Fossil Fuels, <u>http://www.oecd.org/site/tadffss/data/</u>.

<sup>&</sup>lt;sup>44</sup> Federal Customs Administration, <u>https://www.ezv.admin.ch/ezv/en/home/information-companies/taxes-and-duties/importation-into-</u> <u>switzerland/co\_tax.html</u>.

Swedish CO2 tax has two tax levels for heating fuels, with a lower level for industry and agriculture and a higher level for households and services."<sup>45</sup> Moreover, special provisions allowing further reductions of the carbon tax rate are granted for energy intensive industries. This being said, the Swedish government has started to reduce these TEs: the carbon tax rate has increased from EUR 29 in 1991 to EUR 125 in 2014 for households and services, and the differential between higher and lower tax levels has been decreasing – the tax rate for industries outside the EU ETS is currently about 80 % of the standard tax rate and will be totally aligned with that of households and service sector companies on 1 January 2018.

In the United States, the State of Tennessee explicitly committed to cover the cost of any future CO2 tax for green companies that make major investments in the state to mitigate uncertainty among investors.

Energy producers are another frequent target group for energy TEs worldwide. In 2011, China introduced an exemption of excise tax for petroleum fuels used in geological exploration, drilling, and hydrocarbons mining. In Italy, firms in the extraction and exploitation of hydrocarbons business benefit from a reduced excise tax rate on natural gas. In France, businesses engaged in natural-gas extraction and production activities are exempted from paying any excise tax on the energy products they use as process energy.

To what extent such expenditures are needed to secure competitiveness is subject to intense debate.

Flues and Lutz (2015) assess the competitiveness impact of the German electricity tax by exploiting the tax exemptions for energy intensive firms. The authors find no impact in either direction of the reduced electricity tax rates on firms' competitiveness and argue that the energy use threshold beyond which tax exemptions are granted could be increased.

Gerster (2017) assesses the impact of the German renewable energy levy on plant level outcomes including electricity use, gross output, exports and employment. The levy – created in the context of the Renewable Energy Sources Act (EEG) – was implemented as a surcharge on the electricity price and was raised from 0.19 cent per kWh in 2000 to 6.24 cent per kWh in 2014. In line with Flues and Lutz (2015), the author finds no impact of the EEG levy exemptions on any of the outcome variables, but highlights a significant switch by exempted companies from fossil fuels to electricity in their energy mix.

Martin et al. (2014) assesses the impact of the Climate Change Levy implemented in the United Kingdom in 2001 on the manufacturing sector. Their findings also offer empirical evidence against a negative competitiveness effect, and hence against the implementation of mitigation strategies such as tax exemptions.

Arlinghaus (2015) provides a comprehensive review of empirical studies assessing (ex-post) the impact of carbon pricing – including both CO2 taxes and emission trading schemes– on

<sup>&</sup>lt;sup>45</sup> Andersson and Lövin (2015).

competitiveness. As stated by the author, "most studies reviewed find that carbon prices cause emissions abatement, but fail to measure any economically meaningful competitiveness effects due to these policies. [...] a few papers compare firms benefitting from preferential treatment to firms having to pay the full rate, without finding a difference in the competitive position of either group. In these cases, therefore, providing preferential treatment was likely not necessary to maintain the competitive position of the firms concerned."<sup>46</sup>

Based on available empirical analyses, the evidence on the economic rationale for several existing TEs is rather scarce. The pervasiveness of TEs hence rather points to political rationales that justify their existence. In this vein, Convery et al. (2013) report that the exemptions for large emitters and agriculture in Ireland have been among the main factors making implementation of the country's carbon tax possible in December 2009.<sup>47</sup> These TEs included a tax relief for fuel used for electricity generation as well as a double deduction of carbon taxes on diesel for farmers – the latter resulting from the fact that farmers can deduct diesel costs (including taxes) as operating expenses from taxable income, and receive an additional reduction for the carbon tax.<sup>48</sup>

#### 3.2 ENERGY TAX EXPENDITURES FOR HOUSEHOLDS

In addition to providing tax benefits for firms, many governments also offer schemes that reduce energy taxes for households. Some of them apply to a certain level of energy use, some are targeted towards lower-income households, and some are available across the board.

Italy grants a fuel excise tax exemption for households with monthly energy consumption between 3 and 150 kWh that resulted in revenue losses of EUR 634 million in 2016.<sup>49</sup> The Netherlands grants a tax credit (EUR 310.81, excluding VAT, in 2016) that reduces energy taxes for each electricity connection to reflect its view that "up to a certain amount, energy use is regarded as a basic need".<sup>50</sup> France has been providing an exemption from excise tax on natural gas consumed by households that amounted to EUR 33 million in 2014.<sup>51</sup>

In the United States, among others, the State of Pennsylvania offers a sales tax exemption for electricity, natural gas, liquefied petroleum gas (LPG), and fuel oil to residential users that amounted to just under USD 400 million in 2014. Kentucky grants a tax exemption for special fuels used exclusively in heating personal residences. And the State of Oklahoma exempts

<sup>46</sup> Arlinghaus (2015), p. 4.

<sup>&</sup>lt;sup>47</sup> Convery et al. (2013), p. 1.

<sup>&</sup>lt;sup>48</sup> Irish Department of Finance (2014).

<sup>&</sup>lt;sup>49</sup> Ministry of the Environment of Italy (2016).

<sup>&</sup>lt;sup>50</sup> <u>https://www.government.nl/topics/environmental-taxes/energy-tax</u>.

<sup>&</sup>lt;sup>51</sup> OECD Inventory of Support Measures for Fossil Fuels, <u>http://www.oecd.org/site/tadffss/data/</u>.

sales of electricity and natural gas to the residential sector from its sales and use tax, a tax benefit that cost the State USD 49 million.<sup>52</sup>

A key rationale to introduce such energy TEs for households is the objective to mitigate the distributional impact of energy taxation.

As highlighted by Flues and Thomas (2015), "a major obstacle to the more widespread use of energy taxation is the concern that energy taxes may be regressive, hitting the poor harder than the rich." According to their analysis, the distributive impact of energy taxes depends on the energy carrier. Within the 21 countries in their analysis, taxes on electricity are more regressive than taxes on heating fuels which in turn appear to be slightly more regressive than taxes on transport fuels.

Grainger and Kolstad (2010) assess the potential impact of a carbon tax on US consumers. They indicate that carbon intensive goods make up a larger share in the expenditures of lower income households and that a carbon tax would thus be regressive. Similarly, Jiang and Shao (2014) estimate distributional effects of a carbon tax in Shanghai and show its impact to be regressive. Farrell (2015) echoes these results in his study on carbon tax incidence across the income distribution in Ireland, and adds further socioeconomic factors (e.g. location, occupation, household structure, education and age) as explaining variables that drive distributional effects.

In contrast, Parry (2015) estimates that distributive effects of carbon taxes "may not be that regressive, [...] and may be proportional, or even progressive in some countries." He also points to various options to recycle carbon tax revenues into targeted tax cuts to compensate low-income households.

Stone (2015) underlines that such mechanisms to mitigate distributive effects should not exclusively focus on utility bills. "Higher home energy prices are one way a carbon tax affects household budgets. Goods and services across the economy use energy as an input or for transportation to market. On top of that, the utility costs of many low- and moderate-income households are reflected in their rent. Rebates should reflect all the direct and indirect channels through which a carbon tax affects household budgets."

TEs, however, are not the only approach to counter adverse distributive effects. Cronin et al. (2017) provide estimates for a carbon tax in the United States that is rebated via transfers. The authors assess the vertical (between rich and poor households) and horizontal (among families with common incomes but heterogeneous energy intensity of consumption) redistributions from a carbon tax, including the rebate of revenue via transfers. Interestingly, they find that, once the rebate scheme (i.e. tax revenues are refunded in a per capita lump-sum payment) is included, the CO2 tax increases its progressivity.

<sup>&</sup>lt;sup>52</sup> OECD Inventory of Support Measures for Fossil Fuels, <u>http://www.oecd.org/site/tadffss/data/</u>.

Switzerland provides another illustration. The revenue collected through the country's CO2 levy is paid back to society through three different channels: one part is given back to households as a lump-sum, another part is redistributed to businesses based on their payroll, and a final part is earmarked to fund a programme that subsidizes the cost of energy-saving renovations of buildings.<sup>53</sup>

## 3.3 ENERGY TAX EXPENDITURES FOR REGIONS

Several governments also implement energy TEs targeting specific regions or zones.

In Italy, there is a reduced excise rate for natural gas for users living in poor, remote areas where provision of natural gas can prove challenging. Revenue foregone due to this measure amounted to EUR 100 million in 2014. Likewise, France grants VAT exemptions for petroleum products consumed in certain French overseas territories as well as VAT reductions for petroleum products sold in Corsica. In 2014, the combined cost to the government of these measures amounted to just under EUR 160 million.<sup>54</sup>

Russia levies a mineral extraction tax (MET) on the extraction of various mineral resources – including oil and gas – and offers a reduced MET rate to encourage the development of oil fields located in the republics of Tatarstan and Bashkortostan.

Special Economic Zones (SEZs) are another case in point. Governments often aim to actively attract foreign firms and spur innovation, through the creation of SEZs, also called Free Trade Zones or Export Processing Zones. In these areas, firms often benefit from a myriad of subsidies including tax incentives. In some cases, energy TEs are granted as part of the incentive package. In India, for example, goods manufactured within a Domestic Tariff Area that are supplied to a SEZ are tax exempt from the central excise duty.

## 3.4 ENERGY TAX EXPENDITURES FOR SPECIFIC FUELS AND ELECTRICITY

Cutting across tax benefits to firms, households and regions, governments worldwide also provide preferential tax treatment to specific fuels and electricity.

Preferential VAT rates – such as the reduced rate of 5.5% (instead of 20%) for natural gas, electricity and district heating in France, the reduced rate of 10% (instead of 22%) for various energy products in Italy, as well as – are cases in point.<sup>55</sup>

<sup>&</sup>lt;sup>53</sup> Federal Office of the Environment, <u>https://www.bafu.admin.ch/bafu/en/home/topics/climate/info-specialists/climate-policy/co2-levy/redistribution-of-the-co2-levy.html</u>.

<sup>&</sup>lt;sup>54</sup> OECD Inventory of Support Measures for Fossil Fuels, <u>http://www.oecd.org/site/tadffss/data/</u>.

<sup>&</sup>lt;sup>55</sup> OECD (2015b), p. 27.

Excise taxes on diesel in the EU provide further illustration. As highlighted by Transport & Environment (2015), taxes on diesel are lower than those on petrol in nearly all EU member states, with the United Kingdom being the sole exception. In 2014, average EU diesel taxes per liter were EUR 0.14 lower than those for petrol, a gap of 30% per unit of energy or ton of CO2.<sup>56</sup>

The preferential tax treatment of diesel is also observed in non-European economies. A 2015 OECD report covering the 34 OECD member countries and another seven G20 economies (Argentina, Brazil, China, India, Indonesia, Russia and South Africa) highlights that all 41 countries covered by the analysis, except for Brazil and the United States, tax diesel for transport use at lower rates than gasoline in spite of the greater environmental impact of diesel.<sup>57</sup>

Similarly, several countries apply reduced excise tax rates on fuels that are cleaner than gasoline or diesel.<sup>58</sup> Australia is a case in point. The government exempts LPG, liquefied natural gas, and compressed natural gas from the federal excise tax normally levied on sales of petroleum products – with revenue foregone due to this measure amounting to close to AUD 360 million.<sup>59</sup>

Several countries also offer tax exemptions to promote the use of renewable energy. In 2007, the Slovak Republic adopted the Act on Excise tax from electricity, coal and natural gas, which exempts electricity produced from renewable sources (solar energy, wind energy, geothermal energy, hydro energy and biomass among others) from the electricity excise tax. Only the electricity delivered directly to a final user, or consumed by the entity producing it is eligible for the exemption. Likewise, Poland taxes the sales of electricity to end-users and their consumption, but exempts electricity from renewable sources. India implements a similar scheme, and provides customs and excise duty exemption certificates to rooftop solar PV power projects. In the Netherlands, "households and other small users are exempt from the energy tax with regard to electricity generated by renewables [...] members of community energy cooperatives and associations of owner-occupiers within a given postal area are eligible for a tax reduction of EUR 7.5 cents/kWh for collective renewable electricity production."<sup>60</sup>

The primary environmental goal of such support schemes for renewables provides a strong rationale for them. Nonetheless, as for all TEs, the need for their thorough evaluation in terms of transparency, effectiveness and efficiency still applies. As discussed by OECD (2017), "The success of the transition towards a low-carbon future depends on the costs and benefits

<sup>&</sup>lt;sup>56</sup> Transport & Environment (2015), p. 25.

<sup>&</sup>lt;sup>57</sup> OECD (2015b).

<sup>&</sup>lt;sup>58</sup> OECD (2015a).

<sup>&</sup>lt;sup>59</sup> OECD Inventory of Support Measures for Fossil Fuels, <u>http://www.oecd.org/site/tadffss/data/</u>.

<sup>&</sup>lt;sup>60</sup> Vollebergh (2015), pp. 24 and 25.

being distributed across society in a fair and transparent manner, particularly in a context of rising inequality [...].<sup>61</sup>

# 4 ENERGY TAX EXPENDITURES AND INTERNATIONAL TRADE

TEs alter economic behavior and can hence have repercussions on international trade relations. Once their economic effects are felt across the border, trade law comes into play, disciplining the use by countries of such measures. In fact, between the launch of the World Trade Organization (WTO) in 1995 and November 2015 more than 40 out of 500 cases brought before its Dispute Settlement Body (DSB) were triggered by taxation. <sup>62</sup> The complaints by the European Union against the United States with regard to allegedly illegal tax incentives that benefitted airplane manufacturer Boeing provide an illustration.<sup>63</sup>

TEs applying to goods are restricted at the multilateral level notably through the WTO's General Agreement on Tariffs and Trade (GATT) and the Agreement on Subsidies and Countervailing Measures (SCM Agreement). These two agreements contain the main source of rules pertaining to countries' use of TEs and are therefore the focus of this chapter. The General Agreement on Trade in Services (GATS) contains a negotiating mandate for disciplines on services, but to date does not put meaningful restraint on subsidization of services. Hence, a number of TE schemes discussed above, such as on various forms of transport or tourism are not covered by WTO rules. The Agreement on Agriculture applies specifically to the agricultural sector, which takes on a special status in global commercial relations and is governed by a special set of rules (see Box 3). Finally, the Agreement on Trade-Related Investment Measures (TRIMs) specifies rules on the treatment of foreign investments and disciplines among others the use of local content requirements, which are often tied to fiscal measures.

On a bilateral as well as plurilateral level, modern preferential trade agreements – notably those concluded by the EU – include provisions on subsidies that sometimes go beyond WTO rules. The Korea-EU Free Trade Agreement of 2011 is a case in point (see Box 4).

<sup>&</sup>lt;sup>61</sup> OECD (2017), p. 7.

<sup>&</sup>lt;sup>62</sup> Daly (2005), p. 2, 29.

<sup>&</sup>lt;sup>63</sup> WTO (2016).

# 4.1 GENERAL AGREEMENT ON TARIFFS AND TRADE (GATT)

GATT/WTO rules reflect the fact that taxes can have very similar impacts as tariffs and nontariff border measures on global trade of goods and services. They also recognize that taxation affects the international flows of capital and labor.<sup>64</sup>

The overarching principle of the GATT as well as most WTO agreements is the principle of non-discrimination, intended to ensure an international level playing field for commercial relations of its members. It consists of two different aspects.

Its external aspect, the most-favored-nation (MFN) clause, guarantees equal treatment among trading partners and is embodied in Article 1 GATT: "... any advantage, favour, privilege, or immunity granted by any contracting party to any product originating in or destined for any other country shall be accorded immediately and unconditionally to the like product originating in or destined for the territories of all other contracting parties."

Under the 1996 National Car Programme, Indonesia implemented several measures to strengthen its national car industry, but also extended fiscal advantages such as sales tax exemptions to imports from Korea. In WTO (1998), a WTO panel found these measures to violate the MFN principle, as these advantages were not extended "unconditionally" to "like" products from other Members.

The MFN provisions in GATT do not preclude preferential treatment of trading partners as a consequence of concluded free trade agreements, which are inherently discriminatory vis-à-vis third countries. GATT Article 24 provides for such derogations for bilateral and regional trade agreements, provided these cover "substantially all trade" between partners – a requirement that has not turned out to be an obstacle to date, as witnessed by the growing number of free trade agreements around the world.

The internal aspect of the non-discrimination principle is embodied in GATT Article III on "National Treatment on International Taxation and Regulation" (NT), which states that "the products of the territory of any contracting party imported into the territory of any other contracting party shall not be subject, directly or indirectly, to internal taxes or other internal charges of any kind in excess of those applied, directly or indirectly, to like domestic products." Moreover, it stipulates that domestic and foreign products that are directly competitive or substitutable must also be similarly taxed, extending the scope of Article 3 from matters such as similar physical product characteristics or end-uses to substitutability of products as determined by the market. In WTO (1996), Japan's Liquor Tax Law that taxed domestic shochu lower than other liquors such as vodka, gin, rum and whiskey, was found to be in violation of the NT provision of GATT Article 3.

<sup>&</sup>lt;sup>64</sup> Daly (2016), p. 1.

Even measures that do not explicitly discriminate against products of foreign origin may still be in violation of the NT principle. In WTO (1999b), the Appellate Body considered a Chilean tax that imposed an excise tax at different rates depending on the alcohol content of the beverage to have been "applied so as to afford protection". What led both panel and the Appellate Body to this conclusion was the disproportionate *de facto* tax burden that the measure entailed for imported beverages, of which 95% would be subject to the maximum tax rate.

This case illustrates how production and import structure can be crucial factors in determining the legality of seemingly non-discriminatory measures. If a country were to tax e.g. energy sources differentially according to CO2 emission intensity, while being a large producer of hydroenergy and importing mainly fossil-fuel based electricity, such a measure may also be deemed to be discriminatory under GATT Art. 3.

Nonetheless, GATT rules do leave considerable scope for applying trade-restrictive (tax or non-tax) measures for public policy objectives. Article 20 sets out the conditions under which countries may deviate from GATT rules, allowing such measures under certain conditions if they are "necessary to protect public morals;" "necessary to protect human, animal or plant life or health;" "necessary to comply with laws or regulations" that are not inconsistent with GATT; relate to the "conservation of natural resources", or involve "restrictions on exports of domestic materials necessary to ensure essential quantities of such materials to a domestic processing industry". In practice, it can be hard to justify the use of trade-distortive measures invoking these general exceptions. For example, in WTO (2012), China had invoked Article 20 to justify among others measures an export tax on rare earths, which the panel and the Appellate Body rejected on grounds that Article 20 does not apply to China's obligations under its accession protocol.

#### BOX 3: SUBSIDIES AND THE WTO AGREEMENT ON AGRICULTURE (AoA)

The WTO AoA represents the only international attempt at increasing the marketorientation of international agricultural trade, which is governed by rules that are quite different from industrial goods. The AoA comprises three main pillars, of which two directly pertain to subsidies, namely the set of rules on export subsidies and on domestic support respectively.

While not entirely outlawing export subsidies, the AoA disciplines their use and subjects their magnitude to reduction commitments countries have specified in their schedules (allowing for further exceptions for developing countries). Such export subsidies may be direct subsidies, but also indirect ones, such as concessions on inputs or transport, as long as they are contingent on export performance. Domestic support measures are subdivided into those with minimal trade-distortive impact (green box measures) and those with likely distortive impact (amber box measures). The AoA specifies a number of criteria, which

allow measures to be placed in either box. A general criterion for green box measures is that support is publicly funded – instead of through e.g. consumer transfer – which includes TEs. Green Box measures are not subject to reduction commitments and may be maintained or even increased without penalty. The aggregate monetary value of Amber Box measures (Aggregate Measure of Support) - with certain exceptions - is subject to reduction commitments as specified in the schedule of concessions. Both export subsidy and domestic support measure are subject to notification at the WTO Committee on Agriculture.

# 4.2 AGREEMENT ON SUBSIDIES AND COUNTERVAILING MEASURES (SCM AGREEMENT)

In addition to the national treatment article of the GATT, TEs fall squarely into the SCM Agreement. Article 1 defines a subsidy, inter alia, as a "financial contribution by a government [...], where government revenue that is otherwise due is foregone or not collected [...] and a benefit is thereby conferred". That same definition is used in other trade agreements, notably those concluded bilaterally by the EU with Canada, Colombia, Korea, Singapore, and Vietnam.<sup>65</sup>

In practice, as described earlier (see Box 1), the definition of the benchmark, i.e. the amount that is "otherwise due" may prove to be difficult to determine. No further guidance on this is provided in the text of the SCM Agreement. In US – Foreign Sales Corporations, the Panel and the WTO Appellate Body agreed that "the basis of comparison must be the tax rules applied by the Member in question".<sup>66</sup>

As for determining whether a 'benefit' has been 'conferred', the Appellate Body furthermore highlighted that "the marketplace provides an appropriate basis for comparison"<sup>67</sup>, i.e. that a financial contribution confers a benefit, "when it is made available on terms that are more favorable than the recipient could have obtained on the market."<sup>68</sup>

While a case on energy TEs has not come before the WTO yet, it seems hence possible that e.g. an energy tax exemption for renewable energy may be considered to be revenue foregone that is "otherwise due" and a benefit to renewable energy producers, and thus a subsidy within the meaning of the SCM Agreement. On the other hand, a recent WTO Appellate Body report in WTO (2013) takes a somewhat narrower view of the relevant market to determine "benefit". Even though the measures in question (feed in tariffs) are not the same as TEs, the report suggests that the yardstick for determination of benefit may

<sup>65</sup> Borlini and Dordi (2016).

<sup>&</sup>lt;sup>66</sup> WTO (2000).

<sup>&</sup>lt;sup>67</sup> WTO (1999a).

<sup>&</sup>lt;sup>68</sup> WTO (2007).

be found more narrowly *within* single industries, depending on their specific cost-structures rather than output (electricity). As such, the Appellate Body held that the market for energy from renewable sources is separate for the market or energy from conventional sources. According to Cosbey and Mavroidis (2014), such reasoning leaves the door open to a much wider acceptable range of fiscal incentives.

SCM rules do not *per se* outlaw subsidies, but instead apply a set of criteria to determine whether a subsidy is specifically provided to an enterprise or industry (or a group of enterprises or industries), and to divide all such specific subsidies into two categories: prohibited or actionable. They also prescribe the remedies countries can seek against prohibited and actionable subsidies either through multilateral dispute settlement or unilateral countervailing measures.

Given that energy TEs could qualify as a subsidy under international law, can such measures be deemed illegal?

Before turning to answering that question, it is important to note here that part of the international competitiveness concerns around energy taxation (see chapter 3.1) can be addressed through the provision in footnote 1 of the SCM Agreement, which reads: "the exemption of an exported product from duties or taxes borne by the like product when destined for domestic consumption, or the remission of such duties or taxes in amounts not in excess of those which have accrued, shall not be deemed a subsidy". In other words, if a government applies the TE measure only on exports at the border and only to the extent that taxes and duties have been levied on the exported product, the measure in question would not qualify as a subsidy. A TE designed to maintain the competitiveness of exported products alone may not fall within the ambit of the SCM Agreement.

Subsidies, however, are prohibited under Article 3 if they are "contingent [...] upon export performance" ("export subsidies") or "use of domestic over imported goods", ("import substitution subsidies"). If evidence of such contingency can be proven, a subsidy is immediately deemed to be illegal, with no need for further investigation. Such prohibited subsidies must be terminated "without delay" (Article 4.7).

Are e.g. TEs on energy-intensive trade-exposed industries hence prohibited by virtue of them being applied to a trade exposed sector?

It is important to note that subsidies based on exposure to trade do not necessarily qualify as a subsidy that is contingent on *export performance*. In WTO (1999) the Appellate Body held that the provision of subsidies to an industry that exports a large proportion of its production alone does not constitute exporting contingency.<sup>69</sup> TEs for energy-intensive trade-exposed industries hence do not automatically qualify as prohibited subsidies under Article 3 ASCM just by virtue of their export exposure.

<sup>&</sup>lt;sup>69</sup> Trachtman (2016).

Moreover, while the ASCM does not allow for any deviation from the prohibition of aforementioned subsidies, EU free trade agreements (FTAs) allow for departure for certain justifications.<sup>70</sup> For the first category, these consist of subsidies granted to remedy a serious disturbance in the economy, such as those granted as compensation for carrying out public service obligations and to the coal industry. The second exception consists of subsidies granted when they are necessary to achieve an objective public interest, and when the amounts of the subsidies involved are limited to the minimum needed to achieve this objective plus the effect on trade of the other party is limited. These exceptions are known from EU State Aid Law as per Article 107 of the Treaty on the Functioning of the European Union and include language on promoting "economic development in areas where the standard of living is abnormally low or where there is serious unemployment", or subsidies to "companies entrusted with the operation of clearly defined services of general economic interest, provided the subsidies are limited to the cost of providing such services". Note that unlike the ASCM, the EU-Vietnam FTA and the EU-Singapore FTA extend the application of subsidies disciplines to services.

Once a subsidy has been identified as such and it has not been found to be prohibited due to trade contingencies as described above, one needs to determine whether it is specific within the meaning of Article 2 SCM Agreement. Non-prohibited subsidies are shielded from action unless they are "specific to an enterprise or industry or group of enterprises or industries". Whether a TE is considered specific hinges critically upon its design: a broadly available and objectively advertised subsidy may not be considered to be specific, whereas the selection criteria of export exposure could render it more likely to be deemed specific, as fewer industries are export oriented. Furthermore, specificity need not be *de iure*, but can also be determined based on a *de facto* assessment, taking into account factors such as the concentration of companies benefiting from a subsidy, or disproportionately large amounts of a subsidy towards certain enterprises (Article 2.1(c)). The SCM Agreement hence leaves quite some leeway for a panel to decide whether a subsidy is specific or not. The determination of specificity is important, because it decides whether action can be brought against a subsidy.

Until the year 2000, non-prohibited specific subsidies could also be considered nonactionable. These included subsidies with environmental, research and development, as well as regional development objectives (Article 8). However, this provision has been discontinued, which implies that today's SCM Agreement does not consider policy objectives (other than export promotion or import substitution), whether economic or not, in determining the legality of a given subsidy. This stands in contrast to aforementioned subsidy rules in EU FTAs, which do explicitly provide for some policy leeway, including on regional development or environmental grounds. Under the current SCM Agreement, all non-

<sup>70</sup> Borlini and Dordi (2016).

prohibited subsidies that have been found to be specific, are in principle actionable, where the kind of permissible action depends on tests relating to the extent that other producers are being hurt.

Broadly, actionable subsidies may be subject to challenge under the multilateral track at the WTO Dispute Settlement Body (DSB) or subject to countervailing duties – the unilateral track – if they prove to have *adverse effects* on the interests of another member.

Much more common than the multilateral track is the unilateral track under Part V of the SCM Agreement. These provisions allow governments to circumvent the sometimes lengthy multilateral process by imposing countervailing duties on the subsidized imports, i.e. "a special duty levied for the purpose of offsetting any subsidy bestowed directly or indirectly upon the manufacture, production, or export of any merchandise..."<sup>71</sup>, after an investigation has shown the existence of a specific subsidy that causes material injury to a domestic industry producing a like product. In the energy context, it is important to note that the SCM Agreement explicitly allows for countervailing duties on imports that use subsidized inputs, such as energy (Art 15.1 ASCM). Hence a tax scheme that constitutes an actionable subsidy to e.g. the energy generating sector may be countervailed without necessitating direct trade in energy – provided it is deemed to be specific.

Countervailing duty investigations are generally initiated upon complaints by importcompeting industry and WTO rules do not require governments to consider economy-wide effects – negative or positive – in determining material injury. As pointed out by Charnovitz (2014), the SCM Agreement effectively "delegates the initiation of such cases to the affected domestic industry", and "a government could reflexively impose a CVD against subsidized green imports even though the government would prefer not to do so".

#### BOX 4: SUBSIDIES AND THE KOREA-EU FREE TRADE AGREEMENT

The EU-Korea Free Trade Agreement (KOREU) had been described as "the most comprehensive free trade agreement ever negotiated by the EU".<sup>72</sup> Its provisions on subsidies are no exception. According to Borlini and Dordi (2017, p. 571) "it is noteworthy that Korea and the EU – two among the most frequent targets of the SCM Agreement – have committed to more stringent subsidy disciplines."

KOREU extends the notion of prohibited subsidies to additional cases where authorities guarantee debt and liabilities of companies without limitations, as well as subsidies (including tax exemptions) to insolvent or ailing enterprises without a credible restructuring plan (Article 11.11 KOREU). However, unlike in the SCM Agreement, prohibition is contingent on an injury condition, i.e. there need to be adverse effects on

<sup>&</sup>lt;sup>71</sup> ASCM Footnote 36.

<sup>&</sup>lt;sup>72</sup> EC (2010).

trade of the other party. These adverse effects need not be restricted to either economy of the partners, but may be felt in third countries. The agreement also lists some exceptions to these prohibitions, namely subsidies to Small and Medium Enterprises (SMEs), compensation for carrying out public service obligations, and subsidies to the coal industry. More generally, the rules on subsidies in KOREU apply only to goods, with the exception of agriculture and fisheries. However, a *rendez-vous* clause provides for the elaboration of disciplines on subsidies for services in the future. Perhaps the most notable novelty of KOREU disciplines on subsidies relative to the SCM Agreement is its transparency mechanism. Under the SCM Agreement, the contracting parties are required to notify any existing subsidies to the Committee on Subsidies and Countervailing Measures once a year. Given lack of effective sanctions, the compliance record is relatively poor.<sup>73</sup> In KOREU, Article 11.12 sets up a transparency mechanism that is assisted by the agreement's dispute settlement system, which is expected to facilitate enforcement.

# 5 CONCLUSION AND POLICY IMPLICATIONS

Energy taxes are a widely used source of government revenues as well as one of the most cost-effective policy instruments to reduce energy consumption and cut down GHG emissions. At the same time, energy tax schemes are very often implemented together with a myriad of TEs such as tax exemptions to mitigate their effects on businesses, households as well as regions, and to reduce taxes on specific fuels.

As is the case for other taxes with mobile tax bases (e.g. corporate income taxes), international competitiveness plays a crucial role in the design of energy taxes as they may induce energy intensive firms to relocate to jurisdictions with lower or no energy taxation. Such relocations would reduce the corporate tax base and trigger a "leakage effect" that jeopardizes the objective to reduce global GHG emissions.

Against this background, measures to mitigate potentially adverse effects of energy taxes on firms appear warranted. At the same time, studies on existing energy TEs for specific industries and firms indicate that their effects on competitiveness are limited. While this does not draw into question their usefulness per se, it points to the important role of thorough analysis in their design – in particular with regard to applicable eligibility thresholds in terms of energy and emission intensity.

Similarly, energy TEs for households may make sense where they safeguard access to energy for poorer households. However, non-targeted energy tax exemptions and deductions for all households go far beyond that goal and jeopardize the effectiveness of the tax regarding

<sup>&</sup>lt;sup>73</sup> Borlini and Dordi (2017).

both revenue generation and environmental objectives. The same is true for indiscriminate energy TEs for specific fuels.

The crucial role of international competitiveness and the ubiquity of harmful energy TEs in the design of energy tax systems call for international cooperation. Clearly, a harmonized energy tax across key economies would go a long way in addressing competitiveness concerns, free-riding and leakage effects. However, the political economy around energy taxation makes this first best strategy a distant one. Setting regional minimum energy tax rates, e.g. as in the EU Directive on the taxation of energy products and electricity, is a step in the right direction. Increasing transparency on energy TEs to allow for comprehensive assessments of these schemes, including both effectiveness as well efficiency analyses, is another critical building block.

Global trade rules can provide critical support in that context. While falling short of being an international platform for policy coordination, the WTO framework provides a crucial element of global governance disciplining the use of TEs, setting the foundation for an internationally level playing field. Nevertheless, the predominant focus notably in the SCM Agreement on the reduction of trade distortions and maximization of producer efficiency turns a blind eye on sometimes legitimate public policy objectives of TEs, rendering such measures vulnerable to legal challenge at the WTO. Lacking general exceptions such as in GATT Article 20, these rules render the design of conforming measures a challenging task, which - while not impossible - may make countries reticent to implement much needed policies for environmental or social objectives. The latest generation of free trade agreements represents an attempt to modernize these rules, yet it remains unclear to what extent these are in conflict with norms stipulated in the WTO Agreements. Hence, while international trade law puts restraint on the use of TEs that affect cross-border economic interests, it also deprives countries of necessary flexibility to grant fiscal concessions in specific cases where these make for good policies. Squaring this circle is a daunting task that policymakers will have to address in the near future.

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