



A Step-by-Step Guide for Governments to Prepare Fossil Fuel Subsidy Inventories

IISD GUIDE



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Executive Summary

Every year, governments worldwide spend at least over a trillion US dollars on subsidies to fossil fuels. This spending puts a strain on government budgets, contributes to climate change and air pollution, and distorts the markets in favour of fossil fuels and against other, cleaner energy sources.

As early as 2009, G20 leaders agreed to phase out “inefficient” fossil fuel subsidies over the medium term and have since reaffirmed this commitment annually until last year.¹ At the 26th United Nations Climate Change Conference (COP 26), parties to the United Nations Framework Convention on Climate Change have called for phasing out “inefficient fossil fuel subsidies.” However, these pledges and commitments have not translated into consistent action to remove fossil fuel subsidies.

In response, the Coalition on Phasing Out Fossil Fuel Incentives Including Subsidies (COFFIS) was launched at COP 28 in 2023 and has since seen 17 countries committing to work on fossil fuel subsidy reforms both collectively and through domestic action. In their Ministerial Statement launching the coalition, COFFIS member states committed to providing transparency on their fossil fuel subsidies by publishing an inventory and to work jointly toward developing a comprehensive methodological framework for measuring subsidies.

Creating transparent and comprehensive inventories of fossil fuel subsidies is thus an important step toward reform. Several international organizations work with different subsidy definitions and scopes, producing subsidy estimates that vary widely. Often, this creates confusion among policy-makers about what approaches to adopt when preparing an inventory.

This guidance paper is intended to assist COFFIS members and other governments—including at the subnational level—in producing such an inventory.

Best Practices

Each country should develop and apply an approach that best fits its own particular circumstances, but the definition in the World Trade Organization’s (WTO’s) Agreement on Subsidies and Countervailing Measures (WTO, 1994) represents a useful starting point for what a definition of subsidies should include at a minimum. According to this definition, subsidies include direct budgetary transfers, government revenues foregone, market or price support, and concessional elements of public finance and state-owned enterprise investments.

The use of definitions can be complemented by different ways of presenting and measuring subsidies, including the inventory approach established by the Organisation for Economic Co-operation and Development (OECD). Inventories offer maximum transparency over fossil fuel subsidies. In their Ministerial Statement, COFFIS Members commit to using an inventory approach that they adapt to their needs (see Appendix B).

¹ The 2025 South Africa G20 Leader’s Declaration failed to reaffirm the commitment. <https://g20.org/wp-content/uploads/2025/11/2025-G20-Summit-Declaration.pdf>



In this spirit, COFFIS members agreed to a set of common minimum standards to underlie the drafting of their national fossil fuel subsidy inventories. The agreed-upon common inventory standards are the following:

- define fossil fuels broadly to include both primary commodities (coal, oil, gas, peat) and products derived from them;
- cover subsidies for both consumption and production of fossil fuels;
- cover energy uses of fossil fuels across all relevant sectors, including transportation (including aviation and shipping), agriculture, manufacturing, and buildings;
- take steps toward an assessment of climate and socio-economic impacts of identified subsidies; and
- publish the inventories annually (or at least with year-on-year data).

With this document, COFFIS members acknowledge that they can use different subsidy definitions and methodologies, as long as these enable transparency over subsidies and continued reform progress.

COFFIS Members' Approaches to Inventories

Currently, the Netherlands, Belgium, and Switzerland build their inventories based on the WTO definition. Austria and France have developed their own methodologies based on a green budgeting approach to assess how public policies affect the government's energy and climate goals. In this latter case, the focus of the exercise is broader in scope, capturing policies that go beyond a narrow subsidy definition.

In the EU and some COFFIS member countries, foregone government revenues (fuel, carbon, and other tax and fee rebates) account for a high percentage of total fossil fuel subsidies. Some of these rebates are regulated by international agreements on shipping and aviation—an issue that received special attention in the COFFIS Ministerial Statement. In line with the WTO definition and the OECD inventory approach, most COFFIS members agree on the need to quantify the fiscal impact of government revenue foregone from fossil fuels, but calculation methodologies differ across countries. For example, Belgium's approach is most closely aligned with the WTO's subsidy definition because tax expenditures are quantified against the national tax benchmarks. However, other COFFIS members see the limitation of nominal measurement of government revenue foregone.

Setting tax benchmarks at a high level and then providing exemptions and rebates from these benchmarks—for example, by giving carbon tax exemptions to certain sectors—may result in higher nominal estimates of subsidies, as compared to countries with no carbon taxes in the first place. For this reason, cross-country comparisons of subsidies spending based on quantified tax expenditures should be treated with caution. To overcome the issue of cross-country comparability, several member states, including Ireland, France, and Finland, use effective carbon rates (ECRs) pioneered by the OECD to calculate the value of tax expenditures on fossil fuels. Switzerland follows a similar approach: policy-makers collate information on all measures that fit the subsidy definition but use a separate mechanism for quantifying subsidy amounts based on the calculation of ECRs.



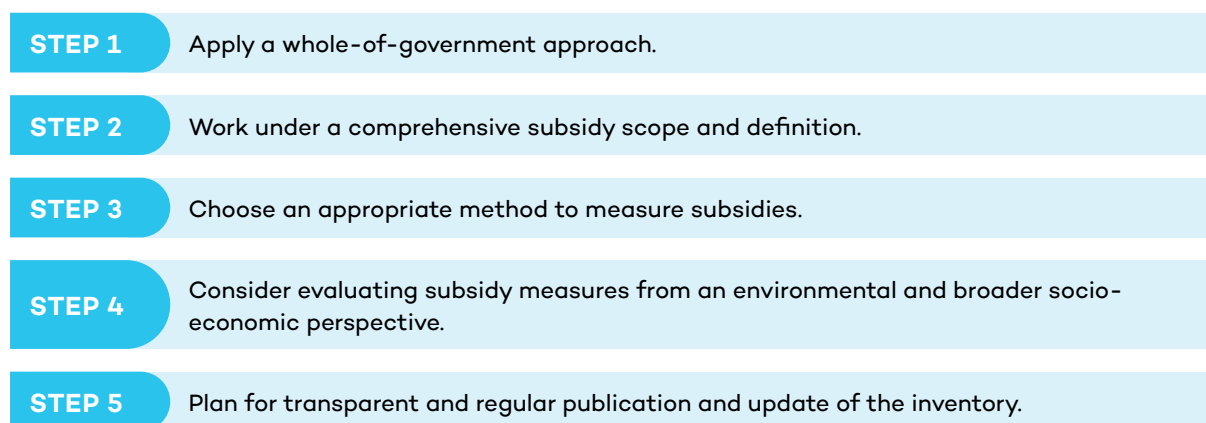
To provide maximum transparency, the Netherlands uses both the inventory and the ECR approaches to estimate the fiscal cost of subsidies. A few countries, including the Netherlands and Austria, evaluate subsidy impacts in terms of greenhouse gas (GHG) emissions and climate alignment.

Where to Start With Inventories

For countries that do not have fossil fuel subsidy inventories yet, compiling one is a low-hanging fruit for improving transparency. There is a diversity of approaches to draw on. Even a simple inventory can trigger important conversations, and an inventory based on the best practices can both unlock pathways for reform action plans and serve as an effective communication tool with different audiences.

This paper outlines the steps that countries should follow to compile their inventory, as highlighted in Figures ES1 below.

Figure ES1. Recommended steps for preparing a fossil fuel subsidy inventory



Source: Authors.



Table of Contents

1.0 Introduction	1
2.0 Step-by-Step Fossil Fuel Subsidy Inventories	2
Step 1. Apply a whole-of-government approach	2
Step 2. Work under a comprehensive subsidy scope and definition.....	3
Step 3. Choose an appropriate method to measure subsidies	9
Step 4. Consider evaluating subsidy measures from an environmental or otherwise broader socio-economic perspective	11
Step 5. Plan for transparent and regular publication and update of the inventory.....	16
3.0 Conclusions and Recommendations	18
References	19
Appendix A. Taxonomy of Fossil Fuel Subsidies	24
Appendix B. Overview of Current Reporting Approaches and Best Practices.....	28



List of Figures

Figure ES1. Recommended steps for preparing a fossil fuel subsidy inventory..... v

List of Tables

Table 1. Different mechanisms of fossil fuel subsidy delivery and their acceptance by experts and governments7

Table A1. Overview of fossil fuel subsidy types by delivery mechanism with examples24

Table B1. Subsidy reporting approaches among selected COFFIS member states28

Table B2. Subsidy reporting approaches under selected international agreements and initiatives 33

List of Boxes

Box 1. Where to start with fossil fuel subsidy inventories?3

Box 2. Article 1.1 of the ASCM..... 4

Box 3. Evaluating subsidies' climate impacts: The case of Austria 12



Abbreviations and Acronyms

ACCTS	Agreement on Climate Change, Trade and Sustainability
ASCM	Agreement on Subsidies and Countervailing Measures
COFFIS	Coalition on Phasing Out Fossil Fuel Incentives Including Subsidies
ECR	effective carbon rates
GHG	greenhouse gas
GSI	Global Subsidies Initiative
HIES	household income and expenditure surveys
IEA	International Energy Agency
IISD	International Institute for Sustainable Development
IMF	International Monetary Fund
IPCC	Intergovernmental Panel on Climate Change
NECP	National Energy and Climate Plan
OCI	Oil Change International
OECD	Organisation for Economic Co-operation and Development
SCRM	Standardised Carbon Rate Measurement
UNEP	United Nations Environment Program
VAT	value-added tax



1.0 Introduction

In their Ministerial Statement launching the coalition (Government of the Netherlands, 2023), Coalition on Phasing Out Fossil Fuel Incentives Including Subsidies (COFFIS) member states committed to providing transparency on their fossil fuel subsidies by publishing an inventory. They also highlighted the need for thorough methodological frameworks to ensure cross-country comparability and comprehensiveness of inventories, covering both direct and indirect subsidies, such as tax breaks, discounts, and underpricing of fossil fuels.

This guidance paper aims to assist COFFIS member states in developing their inventories and further their joint work toward improving inventory methodologies. While the paper is primarily intended for policy-makers developing national subsidy inventories, it may also benefit organizations conducting independent assessments of government spending. The guidance provided in this paper complements the International Institute for Sustainable Development (IISD) publication *From Commitment to Implementation: Guidance for Governments on Fossil Fuel Subsidy Phase-Out Plans*, outlining how governments can move from inventory to action plans for fossil fuel subsidy reforms.

The following sections provide a detailed description of each of these steps. Appendix A then outlines a full taxonomy of fossil fuel subsidies with corresponding examples for each subsidy category. Appendix B summarizes some of the existing practices on fossil fuel subsidy inventories, from COFFIS members and beyond.



2.0 Step-by-Step Fossil Fuel Subsidy Inventories

Step 1. Apply a whole-of-government approach

The first step for officials conducting a fossil fuel subsidy inventory is to have a mandate from their government to conduct the exercise. Preparing detailed terms of reference for the subsidy inventory is useful for outlining a division of tasks among government ministries involved in the inventory process and establishing a timeline. Ideally, the agency leading the inventory preparation process should be the one with policy responsibility for most of the subsidy measures. The process is often coordinated by the ministry of finance, as in the examples of the inventories prepared by the Netherlands and Austria (personal communications with Dutch and Austrian officials, October 30 & 31, 2024), but can also be driven by the ministry of taxation, economy, energy, or environment. For example, France's Green Budget (personal communication with French officials, October 23, 2024), which includes an inventory of the country's fossil fuel subsidies, falls under the responsibility of the Ministry of Economics, Finance and Industrial and Digital Sovereignty. Where subnational governments have a significant degree of responsibility for relevant subsidy measures (for instance, in federal systems), the mandate should also include subnational-level agencies.

The experience of COFFIS members has shown that identifying all subsidies provided to fossil fuels can be challenging. In most cases, government support provided to fossil fuels is more subtle than a direct monetary transfer or an energy price regulation and can be hidden, for instance, in tax exemptions for emission-intensive industries. Many fossil fuel subsidies are introduced to achieve broader social or economic objectives, such as tax concessions for diesel used in agriculture or direct transfers to commuters. In addition, as further outlined under Step 4 of this guide, the leading agency should ideally aim to produce an assessment of environmental, economic, and socio-economic effects of fossil fuel subsidies at the inventory stage. For all these reasons, a whole-of-government approach is crucial for creating a holistic inventory of different types of fossil fuel subsidies.

It is recommended for the leading agency to consult with other relevant government bodies, especially the ministries of trade, transport, agriculture, and social protection, and to involve research institutes and other stakeholders, such as labour or industry representatives. This allows the leading agency to access, collect, and validate data of the highest accuracy.

Finally, the inventory should be compiled within a concrete timeline. The experience of COFFIS countries shows that the first subsidy inventory, when methodological questions and the role of various government agencies need to be clarified, is more time-intensive and challenging than the subsequent updates. Nonetheless, a period of up to 1 year has proven sufficient to prepare the first inventory. To keep track of subsidies over time, the inventory should be updated annually, which typically takes no longer than 3 to 6 months.



Box 1. Where to start with fossil fuel subsidy inventories?

For most countries, some estimates of fossil fuel subsidies already exist in international or national documents.

International Sources

The OECD, the International Energy Agency (IEA) and the International Monetary Fund (IMF) produce international databases of fossil fuel subsidies, updated annually (Black et al., 2023; IEA, 2024; OECD, 2024)—more details about these databases’ underlying methodologies are provided under Steps 2 and 3 of this guide. The Fossil Fuel Subsidy Tracker compiles and analyzes the data provided by the OECD, IEA, and IMF (IISD & OECD, 2023).

Government Sources

Initial overviews and some estimates of fossil fuel subsidies commonly exist in internal government reports and are often published in documents pertaining to the process of budget drafting and execution (both within executive branch and parliamentary processes), tax policy guidelines, clarification notes, and tax expenditure budgets prepared by ministries of finance, reports by the customs service, government audits (reports by auditor general or equivalent), and subsidy notifications at the World Trade Organization [WTO].

Other Sources

In addition, academia and civil society have produced assessments of government support measures in several countries or groups of countries, which are valuable accountability exercises.

Step 2. Work under a comprehensive subsidy scope and definition

A fossil fuel subsidy inventory should apply a comprehensive scope and definition capturing both primary and secondary uses of fossil fuels in all economic sectors.

Definition of Subsidies

While there are some differences in the definitions used by international bodies that track global fossil fuel subsidies, most of them refer to the subsidy definition provided by the WTO’s Agreement on Subsidies and Countervailing Measures (ASCM) (WTO, 1994) and generally agree on the types of measures that qualify as subsidies.

The WTO definition of subsidies under the ASCM was agreed to by 166 signatories.² According to Article 1.1 of the ASCM, government support is considered a “subsidy”

² https://www.wto.org/english/thewto_e/whatis_e/tif_e/org6_e.htm



when there is: (i) a financial contribution (ii) by a government or any public body or (iii) any form of income or price support (iv) which confers a benefit (see Box 2). Importantly, the ASCM is not specific to fossil fuel subsidies, but refers more broadly to all subsidies benefiting producers or consumers of various goods (public support to general infrastructure is excluded from the scope of the ASCM definition). The WTO's definition captures much of the complexity in the range of policies to be tracked, including credit support, tax breaks, and equity infusions (Koplow, 2018).

Box 2. Article 1.1 of the ASCM

Article 1 Definition of a Subsidy

1.1 For the purpose of this Agreement, a subsidy shall be deemed to exist if:

(a)(1) there is a financial contribution by a government or any public body within the territory of a Member (referred to in this Agreement as “government”), 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) 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 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

(a)(2) there is any form of income or price support in the sense of Article XVI of GATT 1994;

and

(b) a benefit is thereby conferred.

International bodies that track fossil fuel subsidies, such as the IEA, the OECD, and the IMF, have their own scope when identifying subsidy measures, which build on the ASCM's definition.

The OECD definition of “government support,” used for compiling the *Inventory of Support Measures for Fossil Fuels* in OECD member states and a selection of partner countries, closely aligns with the ASCM subsidy definition but also includes government support to general services or infrastructure (in addition to that to consumers and producers). (OECD, 2024). This definition covers “budgetary transfers and tax expenditures that provide a benefit or preference for fossil fuel production or consumption” (OECD, 2023b). The use of “support



measures,” as opposed to “subsidies,” allows the Inventory to capture a wide range of policies that can induce changes in the relative prices of fossil fuels (OECD, 2023b).

The IEA’s definition of subsidies is slightly different in scope. The organization defines energy subsidies as any government action that lowers the cost of energy production, raises the prices received by energy producers, or lowers the price paid by energy consumers (IEA, 2006).

The IMF defines fossil fuel subsidies as a combination of “explicit” and “implicit” subsidies.³ “Explicit” subsidies arise when the price paid by consumers is lower than the cost of supply. “Implicit” subsidies arise when the price paid for the consumption of fossil fuels does not reflect environmental, health, and societal externalities associated with fossil fuel consumption, i.e., the costs of climate change, air pollution, and traffic (including road user damage, congestion, and road accidents). The inclusion of externalities in subsidy estimates is known as an external cost approach, and the IMF stands out as the only international organization to adopt this approach.

The IMF’s implicit subsidy concept is partially reflected in the OECD’s work on ECRs and the corresponding database, which the OECD collates and updates every 3 years (OECD, 2023a). According to the OECD definition, ECRs represent carbon prices arising from carbon taxes, emissions trading systems, and fuel excise taxes. Unlike the IMF’s implicit subsidies, ECRs are focused on one particular externality (carbon emissions) rather than multiple externalities, and provide a measure of taxing effort with respect to that externality, without comparing the tax effort to a supposed optimal or benchmark level, as done by the IMF.

Different approaches and scopes result in different subsidy estimates. In 2022, the OECD estimated that global subsidies reached USD 1.4 trillion for 82 OECD and partner economies (OECD, 2023b), declining to USD 1.1 trillion in 2023 (OECD, 2024). In contrast, the IMF estimated global “implicit” subsidies to fossil fuels to be around USD 5 trillion in 2022, and “explicit” subsidies at around USD 1.3 trillion for 170 economies (Black et al., 2023), with 2023 estimates not yet available.

Several G20 countries used a simplified version of the ASCM definition in their peer reviews of fossil fuel subsidies, including the United States and China in 2016 (G20, 2016a, 2016b), Mexico and Germany in 2017 (G20, 2017a, 2017b), and Italy and Indonesia in 2019 (G20, 2019a, 2019b). The European Commission also uses the WTO ASCM definition to report on fossil fuel subsidies in EU member states in the annual *Energy Subsidy Report* (European Commission, 2024). Several non-governmental organizations also base their approach on the ASCM definition but expand upon it to include support for general infrastructure that disproportionately benefits the fossil fuel industry as well as international and domestic public finance for fossil fuels and capital expenditure by state-owned energy enterprises (Gerasimchuk et al., 2024; Whitley, 2015), following the OECD’s methodology (see below). In their guidance on measuring subsidies under SDG indicator 12.c.1, United Nations Environment Program (UNEP), IISD, and the OECD recommend using a combination of the definition of fossil fuels in the IEA’s Statistical Manual and the definition of subsidies under the ASCM (UNEP et al., 2019).

³ From 2021, the IMF started using the terminology “explicit” and “implicit” subsidies to refer to what it used to previously call “pre-tax” and “post-tax” subsidies, respectively.



Among COFFIS countries, the Netherlands, Belgium, and Switzerland build their inventories based on the WTO definition. Austria and France have developed their own methodology based on a green budgeting approach to assess how public policies affect the government's energy and climate goals. In this latter case, the focus of the exercise is broader in scope, capturing policies that go beyond a narrow subsidy definition. Please refer to Appendix B for more details on countries' approaches.

Typologies of Fossil Fuel Subsidies

There are different ways of classifying fossil fuel subsidies: by beneficiaries, fuel types, sectors, or delivery mechanisms. The most commonly used approach is to divide subsidies by beneficiaries, into consumption, production, and general services or infrastructure subsidies. To ensure that the inventory has comprehensive coverage, inventories should go beyond consumer and producer subsidies and include measures benefiting fossil fuel-related general infrastructure (roads, coal and gas terminals, pipelines) that can indirectly increase fossil fuel production and consumption. Following the OECD's approach, it is also recommended to include support for research and development in the fossil fuel sector, as this can drive future fossil fuel use.

Another way to categorize subsidies is by fuel types, i.e., into subsidies directed at primary fossil fuel commodities (e.g., crude oil, natural gas, bituminous, and sub-bituminous coal, and peat) and secondary refined or processed products (e.g., diesel fuel, gasoline, kerosene, liquefied petroleum gas, liquefied natural gas, compressed natural gas, coal, and peat briquettes). Electricity and heat are technically not fossil fuels, but in most countries, a share of energy generation is fuelled with fossil feedstock. Therefore, it is advised to adopt a comprehensive definition of fossil fuels and cover support to electricity and heat generation in subsidy inventories.

Fossil fuel subsidies can also be classified by sectors. Inventories should capture subsidies provided to all sectors that rely on fossil fuels; apart from the power and heating sectors already mentioned, inventories should track subsidies for fossil fuel use in transportation (including aviation and shipping), agriculture, and other energy-intensive industries such as manufacturing and chemical processing. While coal, natural gas, petroleum products, and electricity are usually included in the quantification of subsidies, it is recommended to broaden the scope to non-energy uses of fossil fuels, for instance, in the production of fertilizers and chemical products or metallurgy; this is currently done by the Netherlands, which includes non-energy uses of fossil fuels in its subsidy inventory.

Finally, subsidies can be classified by delivery mechanisms. At a minimum, a comprehensive inventory should include measures that correspond to the WTO's definition of a subsidy delivered through the following mechanisms:

1. direct transfer of government funds (e.g., grants, equity injections etc.);
2. revenue foregone and underpricing of goods and services (e.g., tax credits and rebates, underpricing of government-owned land and other goods or services);
3. induced transfer or price support; and



4. transfer of risk to the government, including through loans and loan guarantees at below-market rates.

Policy-makers with an ambitious reform agenda should also consider other forms of support, such as cross-subsidies—that is, measures that lower energy prices for certain users or sectors by raising them for others.

Ideally, inventories should cover subsidies disbursed through all four support mechanisms listed above, even when no monetary estimate is available (see Step 3 of this guide).

Governments may encounter different challenges when compiling the inventory, depending on data availability and the complexity of the analysis required to produce an estimate (for instance, it might be difficult to obtain data on cost and price benchmarks for calculating the value of induced transfers).

Table 1 summarizes the various delivery mechanisms related to fossil fuel subsidies, focusing on data availability, complexity, and the degree of government acceptance for each. Appendix A provides archetypal examples of government support under each of the four main mechanisms.

Table 1. Different mechanisms of fossil fuel subsidy delivery and their acceptance by experts and governments

Subsidy category	Data availability	Complexity	Acceptance
Direct transfer of funds	Direct budgetary transfers are well documented by governments and often reported in publicly available documents.	Do not need to be estimated by analysts, only reported. Some analysis may be required to allocate the share of whole transfers targeted at fossil fuel-related industries.	Included in all international definitions, accepted by governments.
Induced transfer (price support)	Good, as data on energy prices is available for most countries. Data used to calculate reference prices could be improved.	Moderate and can vary, depending on the size of the market and fuel types.	Price support is widely recognized as a component of total government support in estimates of total support under the WTO Agreement on Agriculture, the OECD's work on support for different sectors, the IEA's and IMF's work on fossil fuel subsidies, and in the economic literature, more generally.



Subsidy category	Data availability	Complexity	Acceptance
<p>Tax expenditures and other government revenue foregone, underpricing of goods and services</p>	<p>Government estimates of tax expenditures relevant to the production of fossil fuels are reported by most developed countries, but not by many others.</p> <p>Data that would allow the valuation of exemptions, reductions, and rebates of consumption-side taxes—value-added tax (VAT) and excise taxes in particular—are obtainable with a moderate amount of effort.</p> <p>Data on other types of government revenue foregone can be opaque.</p>	<p>Tax expenditures: moderately complex to measure.</p> <p>Underpricing of goods and services: relatively non-complex to measure.</p>	<p>Tax expenditures: included in national monitoring in some countries and G20 peer reviews, but not widespread. Can be controversial because differences in national tax systems make cross-country comparisons difficult.</p> <p>Underpricing of goods and services: included in most definitions and accepted, though in practice not widely measured.</p>
<p>Transfer of risk</p>	<p>Only the face values of individual transactions are made public, if they are public at all.</p> <p>Other data needed to produce estimates are hard to obtain.</p>	<p>Complex to measure. Methods for estimating the subsidy element of loans and loan guarantees have been developed, but not systematically applied.</p>	<p>Generally accepted in theory but rarely quantified in practice.</p>
<p>External costs (non-internalization of externalities, e.g., under the IMF implicit subsidy approach)</p>	<p>Determination of external cost benchmarks is sensitive to many assumptions and can be contested.</p>	<p>Complex to measure. Negative external impacts are multidimensional (not only on climate, but also on health, biodiversity, and other social and environmental aspects).</p>	<p>Controversial, but there is increasing acceptance about including specifically the lack of carbon pricing in subsidy calculations, e.g., under the OECD effective carbon rates approach or in the inventories of some COFFIS members.</p>

Source: Adapted and updated from UNEP et al., 2019.



Broader Forms of Support to Fossil Fuels

Due to its overall recognition and high usability, it is recommended that countries use the WTO ASCM as the *minimum basis* for their inventory of fossil fuel subsidy measures.

As the main purpose of inventories is to identify *all measures* that incentivize the production and consumption of fossil fuels, COFFIS members are advised to further widen the scope of their inventories.

The following areas should be considered in the suggested order of priority to increasingly widen the scope of inventories beyond the WTO ASCM:

1. WTO ASCM subsidies (this should be the starting point of all subsidy inventories).
2. Fossil fuel support measures that go beyond the WTO ASCM definition, such as border protection measures and cross-subsidies between consumer groups and across sectors.
3. Full value of public lending and spending by public financial institutions and state-owned enterprises. This should include the total value of loans provided by public financial institutions to fossil-related activities, as well as the total capital expenditure by state-owned enterprises related to fossil fuels. In both cases, the measurement should go beyond the subsidy component, which should be included under the WTO ASCM scope but is often hard to isolate.
4. Uninternalized externalities (this corresponds to what the IMF identifies as implicit subsidies).

Step 3. Choose an appropriate method to measure subsidies

International initiatives for tracking fossil fuel subsidies, described under Step 2, reflect two potentially complementary approaches to measuring the monetary value of subsidies. **These are commonly known as: a) a price-gap approach and b) an inventory approach.**

The price gap approach is used by both the IMF and the IEA (Black et al., 2023; IEA, 2024), and estimates the gap between the domestic retail price and a reference price, typically an international market price. If the domestic price is lower, a consumption subsidy is identified. Estimation is relatively straightforward where there is a readily available international benchmark, such as the average free-on-board gasoline price. However, it can be more challenging for fuels that are less traded internationally, such as piped natural gas or electricity. The calculation of reference prices for electricity is based on the cost of production, transmission, and distribution of electricity in individual countries. This method is also used for fossil fuel-exporting countries, which means the subsidy represents the opportunity cost of selling fuels at below-market prices domestically. Using the price-gap approach alone is useful to compare countries where the main form of support to fossil fuels is through setting fuel prices rather than letting the prices be set by the market, or through export restrictions. On the other hand, a price-gap analysis will not reveal producer subsidies that arise, for example, when energy producers are inefficient and make losses at benchmark prices, nor consumption



subsidies provided through, for example, fuel vouchers, other payments made directly to low-income households, as well as tax exemptions that do not reduce final end-user prices below the benchmark.

The inventory approach is the primary approach used by the OECD (OECD, 2024) and involves constructing an inventory of government support policies that affect the production and consumption of fossil fuels. The types of policies included in the OECD inventory are direct budgetary transfers and tax expenditures, collected in a bottom-up fashion. The rationale behind including these two categories in the inventory is that they both relate to the fiscal costs of supporting fossil fuels, in the form of direct expenditures and in the form of foregone revenue, respectively. In other words, tax expenditures record the extent to which a government does not collect revenue that it would otherwise have in the absence of the measure. The fiscal cost of a tax expenditure measure is therefore quantified as the difference between a preferential tax treatment and a benchmark.

The inclusion of revenue foregone data in subsidy inventories is extremely important to provide a complete picture of fossil fuel subsidies at the national level, especially given the risk that many tax expenditures on the production side would not be picked up by a price gap approach. The key limitation of such inclusion relates to the difficulty of comparing tax expenditure data across countries, due to the limited availability of international taxation benchmarks or consensus around optimal taxation. Countries that set tax benchmarks at a high level and then provide exemptions and rebates from these benchmarks—for example, by giving carbon tax exemptions to certain sectors—may end up having higher nominal estimates of subsidies than countries that do not impose carbon taxes in the first place. For this reason, cross-country comparisons of subsidy spending based on quantified tax expenditures are not straightforward and should be interpreted with caution. Nevertheless, tax expenditure estimates provide a useful reference to understand the overall design and calibration of the tax system within a country and thus should constitute an integral part of a comprehensive subsidy inventory.

To address the issue of cross-country comparability, several countries have proposed to weigh net carbon pricing against a pre-agreed carbon price benchmark. **The focus on net or effective carbon rates is important** because several countries have carbon pricing (e.g., via the European Union’s Emissions Trading Scheme) and provide exemptions for some sectors that result in large subsidy estimates in nominal terms. In the end, it is the net effect of policies that determines consumer prices (therefore demand), investment decisions, and government revenues. The Agreement on Climate Change, Trade and Sustainability (ACCTS), signed at the end of 2024 by Costa Rica, Iceland, New Zealand, and Switzerland (Tipping et al., 2024), for example, has introduced an innovative mechanism using a so-called “Standardised Carbon Rate Measurement” (SCRM), which is the net total price applying to carbon dioxide (CO₂) emissions from a given fossil fuel, considering subsidies, carbon pricing, and some energy taxes (but not VAT). The agreement allows members to commit to a minimum net pricing on fossil fuels. Even if subsidies formally exist following the subsidy definition set out in the agreement, a benefit is deemed to be conferred only when the SCRM falls below that country’s carbon price commitment. So far, only Iceland and Switzerland have chosen to use this mechanism. In its inventory, Switzerland still lists each subsidy measure according to the definition of what counts a subsidy, and then provides two numerical quantifications:



one for the total fiscal cost of this subsidy (e.g., using the common approach for calculating the foregone revenue); another one for the benefit conferred—the total financial impact of the deviation from the committed carbon price under the SCRM mechanism as a result of this subsidy.

The inventory and the price-gap approaches can usefully complement each other. For example, inventories can be created in a measure-by-measure, bottom-up manner (following the OECD’s approach), and the price-gap approach can be used to provide complementary information about the aggregate effects of such policies on prices.

Step 4. Consider evaluating subsidy measures from an environmental or otherwise broader socio-economic perspective

Rationale

After producing a quantitative estimate of fossil fuel subsidies, policy-makers are encouraged to gain a preliminary understanding of how some of the identified measures affect a wide range of policy objectives, from fiscal costs to increasing GHG emissions. A thorough assessment of subsidy reform impacts is part of developing national action plans for subsidy reform, which is the focus of IISD’s *From Commitment to Implementation: Guidance for Governments on Fossil Fuel Subsidy Phase-Out Plans* (Kuehl et al., 2025). However, policy-makers can already start a preliminary assessment of subsidy impacts when working on the inventory. Doing so can facilitate reform as it helps formulate policy priorities using the inventory as a starting point. Incorporating some elements of evaluation into the inventory is thus a bridging step toward successful reform action plans.

Preliminary Assessment of Subsidy Impacts

Fossil fuel subsidies increase fiscal deficits, tend to be economically regressive, and drive climate change, among other negative impacts. Sometimes, “legacy” subsidy schemes are kept in place by inertia, even though their intended policy objectives are outdated, and/or the socio-economic context has shifted since their introduction. Subsidies that are no longer relevant and that generate the most negative impacts should be a priority for reform.

To begin identifying such subsidies, policy-makers can start a preliminary assessment of the measures listed in the inventory. The main purpose of this exercise is to establish a baseline awareness of the fiscal, socio-economic, administrative, and environmental costs of fossil fuel subsidies, along with their intended and actual benefits, in order to prepare the ground for political decisions on reform. Ideally, policy-makers would identify the intended purpose of the most important subsidy schemes and carry out a high-level analysis of their impact on GHG emissions, poverty and inequality, and competition. Such an assessment would help policy-makers highlight (a) obsolete subsidies that serve no visible purpose, (b) subsidies that produce the most environmental harm, e.g., in terms of effects on GHG emissions, and (c) policies that are likely to raise political economy challenges during reform.



This assessment could be structured around the following non-exhaustive list of criteria: a) approximate quantification of carbon emissions; b) socio-economic impacts; and c) impacts on competition.

a) Approximate Quantification of Carbon Emissions

Both production and consumption subsidies reduce prices for fossil fuels, thereby stimulating an increase in the consumption of such fuels and thus leading to higher GHG emissions and air pollution. Additionally, producer subsidies improve the economics of new fossil fuel investment and companies' cash flows, resulting in higher production levels, creating fossil fuel infrastructure that necessitates further fossil fuel investments, and vested interests that defend the provision of subsidies—all resulting in higher carbon emissions (Erickson et al., 2020). Therefore, fossil fuel subsidy reforms could be an effective tool to reduce GHG emissions.

Box 3. Evaluating subsidies' climate impacts: The case of Austria

Some governments are increasingly incorporating climate considerations into the assessment of fiscal and regulatory policies. For instance, the Federal Ministry of Finance in Austria has developed a green budgeting methodology with the aim of evaluating the climate and environmental impacts of budgetary, regulatory, and fiscal measures in the public sector in connection with Austria's goal of becoming climate neutral by 2040. In 2022, policy-makers analyzed over 40,000 lines of public expenditure in the federal budget, characterizing measures as having positive, neutral, or negative impacts on the climate (personal communication with Austrian officials, October 31). The methodology takes into account whether government expenditure leads to (a) increased GHG emissions levels, (b) a reduction in the share of renewable energy in the gross final energy consumption, and/or (c) a reduction in energy efficiency (Federal Ministry of Finance, n.d.), as well as broader impacts on the energy system. Eventually, policy-makers' ambition is to be able to quantify the carbon emissions stemming from subsidies to prioritize spending reforms.

Some other countries are also in the process of analyzing the impact of government policies (including subsidies) on GHG emissions, for instance, France and Germany, among others.

Total GHG emissions globally could be cut by up to 10% if both production and consumption subsidies were to be eliminated (Bassi et al., 2023; Gerasimchuk et al., 2017; IPCC, 2021; Jewell et al., 2018).⁴ Reform could also come with unintended consequences on emissions if cheaper, high-carbon alternatives replace less emission-intensive sources (for instance, switching from gas to coal, or from using liquefied petroleum gas to biomass

⁴ Removing global subsidies for fossil fuel consumption would decrease carbon emissions by 6.4% to 8.2% by 2050, according to some older estimates (Burniaux & Chateau, 2014; Schwanz et al., 2014). Kuehl et al. (2021) estimated the emissions savings from eliminating fossil fuel subsidies to consumption across 32 countries to be 6.09% on average by 2030. In 2017, Gerasimchuk et al. (2017) assessed the CO₂ emissions savings potential from a global phase-out of production subsidies at 37 Gt at the minimum in the 2017–2050 period, or at least 2% relative to the projected baseline. The IPCC estimated the GHG emissions savings potential from the removal of subsidies at 10% (IPCC, 2021).



for cooking). Emission savings are higher if subsidy reforms are undertaken collectively; otherwise, countries might experience carbon leakage, as in the case of some other climate change mitigation measures that have resulted in increased manufacturing costs.

This is one of the reasons why it is important to conduct a preliminary assessment of potential reform impacts on emissions and redirect reform savings to energy efficiency and renewable energy support measures, where possible. Emissions savings from subsidy removals can be amplified by the reallocation of reform savings toward measures supporting energy efficiency and renewable energy uptake (Bassi et al., 2023). Doing so not only reduces emissions directly but also offsets the increased energy prices caused by subsidy removal. This creates a “free” emission reduction, lessening the burden on industries and making overall emission reduction targets easier and cheaper to achieve (Bassi et al., 2023).

Methodological Considerations

National-level emissions savings from fossil fuel subsidy reform would vary depending on the country’s energy system, economic structure, and other factors. Evaluating the potential emissions “savings” is therefore not an easy task. Interactions between subsidies and impacts on fossil fuel use and the broader economy are complex. The impact of producer subsidies on fossil fuel producers’ downstream emissions in other countries (i.e., at the point of consumption) is difficult to account for. Similarly, it is hard to quantify an increase in emissions due to perverse incentives created by producer subsidies, such as a carbon lock-in or influence of vested interests.

A full analysis of potential emissions savings might be a resource-intensive endeavour, and policy-makers might choose to produce a high-level assessment instead, based on their understanding of the energy system, the price elasticity of demand for the targeted fuels, as well as the general logic behind making calculations of subsidy impacts on emissions (see below). The purpose of this exercise is for policy-makers to acquire a basic grasp of any given policy’s impacts on emissions by looking at how it affects the price of a targeted fuel and estimating how the demand for the fuel would change if the subsidy were to be removed.

Researchers use the following methodologies to model the impacts of subsidy removal on GHG emissions: sectoral, partial equilibrium models (e.g., sectoral energy models), or integrated, economy-wide models, which can be built using three different methodologies (i) econometrics, (ii) optimizations (e.g., cost minimization, or welfare optimization such as in computable general equilibrium models), and (iii) simulations, e.g., using system dynamics models (Bassi et al., 2023).

Changes in energy prices and subsequent shifts in energy demand (via conservation of energy and/or fuel switching) are usually the main drivers of projected emissions reduction in such models. One such model is the GSI-Integrated Fiscal model developed for IISD’s Global Subsidies Initiative (Merrill et al., 2015). The model projects energy consumption by sector and source based on expected increases in energy prices due to subsidy removals and then converts this into emissions reductions via GHG emission factors. The model has been run for over twenty countries at a different level of detail. It includes selected customizations at the national level (e.g., Morocco and the Netherlands) and allows the estimation of the impact of redirecting parts of fiscal savings to renewable energy and energy efficiency measures.



Key structural assumptions include energy consumption estimation considering population and economic activity, energy efficiency, energy prices and related conservation and substitution effects. The latter is based on the price of one energy source relative to others, and the potential for substitution based on technologies and their vintage/lock-in.

The underlying estimation methodology remains the same, whether it is employed for assessing the impacts of removing one particular subsidy scheme or all fossil fuel subsidies within the country.



Questions to Consider

- Does the subsidy lead to increased production and/or consumption of fossil fuels?
- How do subsidies affect the country's GHG emissions, and how much would emissions drop if the measure is phased out?

b) Socio-Economic Impacts

While subsidies are often introduced to ensure energy access, remedy energy poverty, or protect the poor in general, research has shown that many so-called “blanket” or untargeted subsidies are regressive, with most benefits, in absolute terms, accruing to the wealthiest groups in society (Coady et al., 2015; Del Granado, et al., 2012), since richer households consume more energy. However, poorer households tend to spend a significant portion of their income on bare necessities, including energy (Bacon et al., 2010; Zinecker et al., 2018). Therefore, in relative terms, certain subsidies might play a crucial role in ensuring energy affordability for the poorest households. In such cases, it is important to analyze the potential impacts of subsidy reforms before their implementation. Reform impacts would differ depending on the size of the national economy, subsidized fuels and sectors, energy access rates, car ownership rates, and other factors (Dufour et al., 2022), and gathering relevant data to understand the interplay between these factors can be carried out during the inventory preparation stage. At this stage, policy-makers can already assess if the reform of certain subsidy schemes needs to be accompanied by targeted policies aimed at protecting vulnerable households and businesses.

Methodological Considerations

Mirroring the research of academics and international organizations, policy-makers can use data from household income and expenditure surveys (HIES) to conduct a preliminary analysis of first-order and short-term impacts of fossil fuel subsidy reform on poverty and inequality (Coady et al., 2015; Couharde & Mouhoud, 2020; Rentschler, 2016). One of the advantages of using HIES is that they are regularly conducted by governments to design and evaluate a wide range of policies, with minimal additional efforts required for data collection.

HIES data can be used to analyze how the benefits of fossil fuel subsidies are distributed among different income groups, helping highlight subsidies that mostly benefit the wealthiest households and those that benefit the poorest households. HIES thus can be used to identify which groups would be most vulnerable to energy price changes if certain subsidies are phased out, and what measures could be used to mitigate such impacts. During the reform design stage, HIES data could also be fed into more sophisticated models (such as the GSI-IF model



mentioned above) to understand reform impacts on economic growth, employment, and other factors that could indirectly affect poverty and inequality rates in the country.

Even if quantitative HIES data is not available, it is useful to consider who the main beneficiaries of the largest subsidy schemes are, the potential socio-economic impacts of reform, and any viable measures to mitigate such impacts.

Questions to Consider

What are the subsidy's socio-economic impacts?

Who are the main beneficiaries of a subsidy scheme?

How does the subsidy affect vulnerable groups, and what would be the impact of its reform?

What is the potential impact on inequality?

c) Impacts on Competition

Government support is often associated with distortionary impacts on competition in the energy sector. Fossil fuel subsidies can increase barriers to entry for renewable energy generators, delaying the energy transition (Monasterolo & Raberto, 2019; Ouyang & Lin, 2014). Phasing out subsidies to fossil fuels that directly compete with renewable energy sources, which provide cheaper energy and reduce dependence on volatile energy markets, should be a priority for climate action.

At the same time, certain industries (especially in more energy-intensive sectors, such as manufacturing, transportation, and agriculture) often rely on cheap energy made available with fossil fuel subsidies and could thus be vulnerable to energy price shocks. Identifying such industries and the measures they benefit from is an important step in preparing a subsidy inventory, since phase-outs could impact the economy's competitiveness in relation to other countries. At the same time, subsidies are often found to be just one of many factors determining the attractiveness of markets for investors and the competitiveness of firms. Even where subsidy phase-outs could hurt industries in the short term, reforms could also spur innovation and incentivize the adoption of energy efficiency measures and a switch to cleaner energy alternatives, increasing competitiveness in the long term (Rentschler et al., 2017). Weighing the risks and benefits of reform for important industries could help anticipate political economy challenges and plan measures to mitigate reform impacts on industries.

Methodological Considerations

Assessments of fossil fuel subsidy reform impacts on industrial competitiveness are not as common as evaluations of socio-economic impacts, but some analyses exist (Bassi et al., 2009), and scholars suggest using similar, model-driven methods to estimate the impacts of price shocks on firms (Rentschler et al., 2017). The starting point for examining reform impacts on industries would be to assess energy expenditure information in firm-level survey data and balance sheets (for larger, publicly listed firms) to estimate direct price shocks from subsidy reforms. Indirect reform impacts should also be taken into account, including effects of energy price changes on input costs throughout the firm's value chain, enterprise profits, revenues, as well as labour cost increases and inflation.



Questions to Consider

What are the subsidy's impacts on competition?

Does it skew the level playing field against certain technologies, e.g., renewable energy?

How is subsidy reform likely to affect production costs and profitability of energy-intensive industries?

Other Criteria and the Way Forward

As mentioned above, the OECD and countries that have conducted reviews of fossil fuel subsidies have noted that certain “legacy” subsidies that were introduced years ago—for instance, in the form of tax breaks—are often carried over in annual budgets without a review due to political inertia and vested interests (Gerasimchuk et al., 2017). Many such measures might no longer serve relevant policy objectives, and thus should be rediscussed and reformed, creating fiscal space for funding other policy goals.

After weighing the costs and benefits of subsidies, policy-makers can review existing measures and their objectives for relevance. If objectives are still pertinent, policy-makers should examine alternative measures that can help achieve them (a) with lower costs, (b) in a more targeted way, and (c) with less damage to the environment.

Evaluating major subsidies against the criteria above can prepare the ground for developing national action plans and roadmaps for subsidy reform.

Step 5. Plan for transparent and regular publication and update of the inventory

To harness the inventory's full potential and maximize its benefits, it is recommended to make it accessible to the public. Doing so has the following benefits:

- Increased transparency creates a factual basis for informed debate and better policy-making and highlights subsidies that are usually hidden from public view. With better transparency, civil society actors, academia, and other stakeholders can enhance their independent assessments of government spending and highlight subsidy measures that are ripe for reform.
- Increased accountability: Publicly available inventories enable active participation of civil society and stakeholders in reform discussions. This fosters accountability as it helps track reform progress over time, ensures policy continuity in case of changes in government, and creates a lever for ensuring that government funds are spent efficiently.
- Enhanced accessibility of information: Better public access to information on fossil fuel subsidies and their impacts, including the costs of subsidies and the benefits of reform, is likely to increase public awareness of subsidies' impacts and help governments build public support for reform.



- **Demonstration of leadership and ambition:** By producing and publishing a subsidy inventory, the government would articulate which measures are considered a subsidy, and signal commitment to reform accordingly.

It is recommended that the inventory be published both in the national language (to ensure that all the relevant domestic stakeholders are included in the discussions on reform) and in English, to facilitate international cooperation and cross-country learning.

To showcase future reform progress, encourage continued accountability and further improve the quality of collected data, it is also recommended that the government make a commitment to update the inventory regularly, preferably every year.

Finally, it is recommended that the inventory be accompanied by clear communication campaigns on the inventory's main findings, including the expected benefits of future reform and any measures to mitigate the reforms' negative impacts.



3.0 Conclusions and Recommendations

Based on the principles of best practices identified and discussed in this paper, fossil fuel subsidy inventories should:

- be led by agencies that can initiate legislative or regulatory proposals for reform and involve all government agencies concerned with fossil fuel subsidies, under a whole-of-government approach;
- be consistent with the subsidy definition in Article 1.1 of the WTO Agreement on Subsidies and Countervailing Measures and include additional elements as appropriate;
- use internationally recognized terminology to categorize subsidy measures, to ensure better communication and knowledge-sharing among countries;
- provide an estimate of the fiscal costs of subsidies to governments, including on government revenue foregone;
- ideally, quantify GHG emission impacts or, if not possible, provide a clear mapping of how subsidies might lead to increased emissions, as well as their links to socio-economic impacts and effects on economic competition;
- be conducted on an annual basis to demonstrate progress and further improve the quality of subsidy data.



References

- Bacon, R., Bhattacharya, S., & Kojima, M. (2010). *Expenditure of low-income households on energy: Evidence from Africa and Asia*. World Bank. https://www.researchgate.net/publication/265884784_Expenditure_of_Low-Income_Households_on_Energy_Evidence_from
- Bassi, A. M., Pallaske, G., Bridle, R., & Bajaj, K. (2023). Emission reduction via fossil fuel subsidy removal and carbon pricing: Creating synergies with revenue recycling. *World*, 4(2), 225–240. <https://doi.org/10.3390/world4020016>
- Bassi, A. M., Yudken, J. S., & Ruth, M. (2009). Climate policy impacts on the competitiveness of energy-intensive manufacturing sectors. *Energy Policy*, 37(8), 3052–3060. <https://doi.org/10.1016/j.enpol.2009.03.055>
- Black, S., Liu, A. A., Parry, I. W. H., & Vernon, N. (2023, August 24). *IMF fossil fuel subsidies data: 2023 update*. International Monetary Fund. <https://www.imf.org/en/Publications/WP/Issues/2023/08/22/IMF-Fossil-Fuel-Subsidies-Data-2023-Update-537281>
- Burniaux, J.-M., & Chateau, J. (2014). Greenhouse gases mitigation potential and economic efficiency of phasing-out fossil fuel subsidies. *International Economics*, 140, 71–88. <https://doi.org/10.1016/j.inteco.2014.05.002>
- Coady, D., Flamini, V., & Sears, L. (2015). *The unequal benefits of fuel subsidies revisited*. International Monetary Fund. <https://www.imf.org/external/pubs/ft/wp/2015/wp15250.pdf>
- Commission Implementing Regulation (EU) 2022/2099. (2022, November 15). *Commission Implementing regulation (EU) 2022/2299 of 15 November 2022 laying down rules for the application of Regulation (EU) 2018/1999 of the European Parliament and of the Council as regards the structure, format, technical details and process for the integrated national energy and climate progress reports*. <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32022R2299>
- Couharde, C., & Mouhoud, S. (2020). Fossil fuel subsidies, income inequality, and poverty: Evidence from developing countries. *Journal of Economic Surveys*, 34(5), 981–1006. <https://doi.org/10.1111/joes.12384>
- Del Granado, F. J. A., Coady, D., & Gillingham, R. (2012). The unequal benefits of fuel subsidies: A review of evidence for developing countries. *World development*, 40(11), 2234–2248.
- Dufour, L., Roth, J., & Picciarelli, A. (2022). *In search of a triple win: Assessing the impacts of COVID-19 responses on the clean energy transition, inequality, and poverty*. International Institute for Sustainable Development and ODI. <https://www.iisd.org/system/files/2022-04/covid-19-impacts-clean-energy-transition-inequality-poverty.pdf>
- Erickson, P., Van Asselt, H., Koplow, D., Lazarus, M., Newell, P., Oreskes, N., & Supran, G. (2020). Why fossil fuel producer subsidies matter. *Nature*, 578(7793), E1–E4. <https://doi.org/10.1038/s41586-019-1920-x>



- European Commission. (2020). *2020 report on the state of the energy union pursuant to Regulation (EU) 2018/1999 on Governance of the Energy Union and Climate Action* (No. COM(2020) 950 final). <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52020DC0950>
- European Commission. (2021). *State of the energy union 2021* [Text]. https://ec.europa.eu/commission/presscorner/detail/en/ip_21_5554
- European Commission. (2022). *2022 report on energy subsidies in the EU* (No. COM(2022) 642 final). <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52022DC0642>
- European Commission. (2023). *2023 report on energy subsidies in the EU* (No. COM(2023) 651 final). <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52023DC0651>
- European Commission. (2024). *2024 report on energy subsidies in the EU*. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2025:17:FIN&pk_campaign=todays_OJ&pk_source=EUR-Lex&pk_medium=X&pk_content=Report&pk_keyword=Energy&pk_cid=EURLEX_todaysOJ
- European Commission. (2025). *2024 report on energy subsidies in the EU* (No. COM(2025) 17 final). European Commission. <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52025DC0017>
- Fossil Fuel Subsidies Tracker. (2022). *Home page*. <https://fossilfuelsubsidytracker.org/>
- Federal Ministry of Finance. (n.d.). *Green budgeting*. Republic of Austria. https://bmf.gv.at/en/topics/climate-policy/green_budgeting_en.html
- G20. (2016a). *China's efforts to phase out and rationalise its inefficient fossil-fuel subsidies. A report on the G20 peer review of inefficient fossil-fuel subsidies that encourage wasteful consumption in China*. <http://www.g20chn.org/English/Documents/Current/201609/P020160919413193754828.pdf>
- G20. (2016b). *The United States' efforts to phase out and rationalise its inefficient fossil-fuel subsidies. A report on the G20 peer review of inefficient fossil-fuel subsidies that encourage wasteful consumption in the United States*. <http://www.g20chn.org/English/Documents/Current/201609/P020160919418466525465.pdf>
- G20. (2017a). *Germany's effort to phase out and rationalise its fossil-fuel subsidies. A report on the G20 peer-review of inefficient fossil-fuel subsidies that encourage wasteful consumption in Germany*.
- G20. (2017b). *Mexico's efforts to phase out and rationalise its fossil-fuel subsidies. A report on the G20 peer-review of inefficient fossil-fuel subsidies that encourage wasteful consumption in Mexico*. <http://www.oecd.org/site/tadffss/Mexico-Peer-Review.pdf>
- G20. (2019a). *Indonesia's effort to phase out and rationalise its fossil-fuel subsidies. A report on the G20 peer-review of inefficient fossil-fuel subsidies that encourage wasteful consumption in Indonesia*. https://www.mase.gov.it/sites/default/files/archivio/allegati/economia_ambientale/indonesia_g20_peer_review_ffs.pdf



- G20. (2019b). *Italy's effort to phase out and rationalise its fossil-fuel subsidies. A report on the G20 peer-review of inefficient fossil-fuel subsidies that encourage wasteful consumption in Italy*. https://www.mase.gov.it/sites/default/files/archivio/allegati/economia_ambientale/italy_g20_self_report_ffs.pdf
- G20. (2024). *G20 Rio de Janeiro leaders' declaration*. <https://www.gov.br/planalto/pt-br/media/18-11-2024-declaracao-de-lideres-g20.pdf>
- G20. (2025). *G20 Johannesburg leaders' declaration*. <https://g20.org/wp-content/uploads/2025/11/2025-G20-Summit-Declaration.pdf>
- Gerasimchuk, I., Wooders, P., Merrill, L., Sanchez, L., Kitson, L. (2017). *A guidebook to reviews of fossil fuel subsidies: From self-reports to peer learning*. International Institute for Sustainable Development. <https://www.iisd.org/gsi/sites/default/files/guidebook-reviews-fossil-fuels-subsidies.pdf>
- Gerasimchuk, I., Bassi, A. M., Dominguez Ordonez, C., Doukas, A., Merrill, L., & Whitley, S. (2017). *Zombie energy: Climate benefits of ending subsidies to fossil fuel production*. International Institute for Sustainable Development. <http://www.iisd.org/sites/default/files/publications/zombie-energy-climate-benefits-ending-subsidies-fossil-fuel-production.pdf>
- Gerasimchuk, I., Laan, T., Do, N., Darby, M., & Jones, N. (2024, December 18). *The cost of fossil fuel reliance: Governments provided USD 1.5 trillion from public coffers in 2023*. International Institute for Sustainable Development. <https://www.iisd.org/articles/insight/cost-fossil-fuel-reliance-governments-provided-15-trillion-2023>
- Government of the Netherlands. (2023, December 9). *Joint statement on fossil fuel subsidies*. <https://www.government.nl/documents/publications/2023/12/09/joint-statement-on-fossil-fuel-subsidies?%3F%3F=>
- International Energy Agency. (2024). *World energy outlook 2023*. <https://www.iea.org/reports/world-energy-outlook-2023>
- International Institute for Sustainable Development. (2024). *COFFIS national inventories*. <https://www.iisd.org/coffis/national-inventories>
- International Institute for Sustainable Development & Organisation for Economic Co-operation and Development. (2023). *Fossil fuel subsidy tracker: Fossil fuel subsidies*. <https://fossilfuelsubsidytracker.org/>
- Intergovernmental Panel on Climate Change. (2021). Summary for policymakers. In *Climate change 2021: The physical science basis. Contribution of Working Group I to the sixth assessment report of the Intergovernmental Panel on Climate Change* (pp. 3–32). Cambridge University Press. <https://doi.org/10.1017/9781009157896.001>
- Jewell, J., McCollum, D., Emmerling, J., Bertram, C., Gernaat, D. E. H. J., Krey, V., Paroussos, L., Berger, L., Fragkiadakis, K., Keppo, I., Saadi, N., Tavoni, M., van Vuuren, D., Vinichenko, V., Riahi, K. (2018). Limited emission reductions from fuel subsidy removal except in energy-exporting regions. *Nature*, 554, 229–233.



- Koplow, D. (2018). Defining and measuring fossil fuel subsidies. In H. van Asselt & J. Skovgaard (Eds.), *The politics of fossil fuel subsidies and their reform* (pp. 23–46). Cambridge University Press. <https://doi.org/10.1017/9781108241946.004>
- Kuehl, J., Bassi, A., Gass, P., & Pallaske, G. (2021). *Cutting emissions through fossil fuel subsidy reform and taxation*. International Institute for Sustainable Development. <https://www.iisd.org/publications/cutting-emissions-fossil-fuel-subsidies-taxation>
- Kuehl, J., Skovgaard, J., & Cavolo, M. (2025). *From commitment to implementation: Guidance for governments on fossil fuel subsidy phase-out plans*. International Institute for Sustainable Development. <https://www.iisd.org/publications/guide/fossil-fuel-subsidy-phase-out-plans>
- Merrill, L., Bassi, A. M., Bridle, R., & Christensen, L. T. (2015). *Tackling fossil fuel subsidies and climate change: Levelling the energy playing field*. <http://norden.diva-portal.org/smash/get/diva2:860647/FULLTEXT02.pdf>
- Monasterolo, I., & Raberto, M. (2019). The impact of phasing out fossil fuel subsidies on the low-carbon transition. *Energy Policy*, 124, 355–370. <https://doi.org/10.1016/j.enpol.2018.08.051>
- Organisation for Economic Co-operation and Development. (2023a). *Effective carbon rates 2023. Pricing greenhouse gas emissions through taxes and emissions trading*. https://www.oecd.org/en/publications/2023/11/effective-carbon-rates-2023_a0dc16cc.html
- Organisation for Economic Co-operation and Development. (2023b, December 1). *OECD inventory of support measures for fossil fuels 2023*. https://www.oecd.org/en/publications/oecd-inventory-of-support-measures-for-fossil-fuels-2023_87dc4a55-en.html
- Organisation for Economic Co-operation and Development. (2024, November 21). *OECD inventory of support measures for fossil fuels 2024*. https://www.oecd.org/en/publications/oecd-inventory-of-support-measures-for-fossil-fuels-2024_a2f063fe-en.html
- Ouyang, X., & Lin, B. (2014). Impacts of increasing renewable energy subsidies and phasing out fossil fuel subsidies in China. *Renewable and Sustainable Energy Reviews*, 37, 933–942. <https://doi.org/10.1016/j.rser.2014.05.013>
- Regulation (EU) 2018/1999. (2018, December 11). Regulation (EU) 2018/1999 of the European Parliament and of the Council of 11 December 2018 on the Governance of the Energy Union and Climate Action, amending Regulations (EC) No 663/2009 and (EC) No 715/2009 of the European Parliament and of the Council, Directives 94/22/EC, 98/70/EC, 2009/31/EC, 2009/73/EC, 2010/31/EU, 2012/27/EU and 2013/30/EU of the European Parliament and of the Council, Council Directives 2009/119/EC and (EU) 2015/652 and repealing Regulation (EU) No 525/2013 of the European Parliament and of the Council.
- Rentschler, J. (2016). Incidence and impact: The regional variation of poverty effects due to fossil fuel subsidy reform. *Energy Policy*, 96, 491–503. <https://doi.org/10.1016/j.enpol.2016.06.025>
- Rentschler, J., Kornejew, M., & Bazilian, M. (2017). Fossil fuel subsidy reforms and their impacts on firms. *Energy Policy*, 108, 617–623. <https://doi.org/10.1016/j.enpol.2017.06.036>



- Schwanitz, V. J., Piontek, F., Bertram, C., & Luderer, G. (2014). Long-term climate policy implications of phasing out fossil fuel subsidies. *Energy Policy*, 67, 882–894. <https://doi.org/10.1016/j.enpol.2013.12.015>
- Tipping, A., Gerasimchuk, I., Larrea, C., Laan, T., Kuehl, J., Sarmiento, F., & Triplicane, S. (2024). *Agreement on climate change, trade and sustainability: A landmark pact for trade and sustainability*. International Institute for Sustainable Development. <https://www.iisd.org/articles/deep-dive/agreement-climate-change-trade-sustainability-accts>
- United Nations Environment Programme, Organisation for Economic Co-operation and Development, & International Institute for Sustainable Development. (2019). *Measuring fossil fuel subsidies in the context of the Sustainable Development Goals*. <https://wedocs.unep.org/bitstream/handle/20.500.11822/28111/FossilFuel.pdf>
- United Nations. (2021). *COP26: Together for our planet*. <https://www.un.org/en/climatechange/cop26>
- Whitley, S. (2015). *Empty promises: G20 subsidies to oil, gas and coal production*. ODI. <https://odi.org/en/publications/empty-promises-g20-subsidies-to-oil-gas-and-coal-production/>
- World Trade Organization. (1994). *Agreement on subsidies and countervailing measures (“SCM Agreement”)*. https://www.wto.org/english/tratop_e/scm_e/subs_e.htm
- Zinecker, A., Sanchez, L., Sharma, S., Beaton, C., & Merrill, L. (2018). *Getting on target: Accelerating energy access through fossil fuel subsidy reform*. Global Subsidies Initiative & International Institute for Sustainable Development. <https://www.iisd.org/system/files/publications/getting-target-accelerating-energy-access.pdf>



Appendix A. Taxonomy of Fossil Fuel Subsidies

Table A1. Overview of fossil fuel subsidy types by delivery mechanism with examples

Type of subsidies	Sub-types	Description	Examples
Direct transfer of funds	Direct spending	Earmarks and agency appropriations	Targeted spending on the sector through the government budget and budgets of individual government agencies.
		Research and development support	Funding for research and development programs.
		Contracts and government procurement of energy at above-market rates	
	Government ownership of energy-related enterprises (on terms of ownership more favourable than they would have been if held privately)	Equity injection in the energy sector from government budgets	Acquisition of shares in a fossil fuel company as part of a bailout mechanism (at above-market rates).
		Government ownership of strategic and other energy assets that otherwise would not be viable	Strategic petroleum reserves, ownership of fossil fuel exploration and extraction companies, electricity plants, transmission and distribution systems for gas, electric power and heat, energy import and export companies.



Type of subsidies	Sub-types	Description	Examples
Tax expenditures and other government revenue foregone	Tax breaks	Tax expenditures	Tax expenditures are foregone tax revenues, due to special exemptions, deductions, rate reductions, rebates, credits, and deferrals that reduce the amount of tax that would otherwise be payable.
		Reduced overall tax burden on industry	Marginal tax rates are lower than for other industries, for instance, non-application of VAT or general sales tax.
		Exemptions from excise taxes/special taxes	Non-application of excise taxes on fuels; special targeted taxes on the energy industry (e.g., based on environmental concerns or “windfall” profits).
	Foregone revenue from government-owned energy resources	Preferential rates/conditions for energy resource leasing	Exclusive extraction/production rights granted to a company without competitive bidding or market-based pricing.
		Royalty relief or reductions in other taxes due on extraction	Reduced, delayed, or eliminated royalties, extraction taxes, and natural resource rents.
	Foregone revenue from non-energy, government-owned natural resources or land	Access to government-owned natural resources, such as water and land, at no charge or for below-market rates	Providing free access to land to coal extraction companies; long-term licences fixed at below-market rates to divert fresh water for oil and gas production.
	Foregone revenue from government-owned infrastructure	Use of government-provided infrastructure at no charge or below-market rate	Low port access tariffs charged on coal exporting companies; government funding of highways and roads in remote locations to promote fossil fuel extraction.
	Foregone revenue from other government-provided goods or services	Government-provided goods or services at below-market rates	Eminent domain approvals and government funding for oil and gas infrastructure.



Type of subsidies	Sub-types	Description	Examples
Induced transfers (income or price support)	Income or price support and market regulations	Consumption mandates and mandated feed-in tariffs	Fixed consumption shares for use of a specific energy type, e.g., mandated share of coal resources in annual capacity installations.
		Border protection or restrictions	Controls (tariff and nontariff measures) on imports or exports leading to unfair advantages.
		Regulated prices set at below-market rates for consumers	Fossil fuel price cap, e.g., below cost recovery rates for fossil electricity or heating paid by households.
		Regulated prices set at above-market rates for producers	Requiring refineries to purchase oil at above global market prices; mandating electricity generators to buy domestically produced coal, at above-market rates.
		Cross-subsidies	One group of consumers (for instance, industry) pays a premium on the price of energy, which pays off the losses that suppliers incur by selling energy at below-cost-recovery rates to a different group of consumers (for example, households).



Type of subsidies	Sub-types	Description	Examples
Transfer of risk to government	Credit support	Below-market lending to energy-related enterprises by state-owned banks, including loans to energy exporters	
		Loan guarantees at below-market rates	
	Insurance and indemnification	Government insurance and indemnification at market or below-market risk-management or risk-shifting services	
		Statutory caps on commercial liability	Statutory caps on commercial liability can confer substantial subsidies if set well below plausible damage scenarios.
	Occupational health and accidents	Assumption of occupational health and accident liabilities	
	Environmental costs	Responsibility for closure and post-closure risks	Facility decommissioning and clean-up; long-term monitoring; remediation of contaminated sites; litigation.
Waste management and environmental damages		Avoidance of fees payable to deal with waste, avoidance of liability, and remediation to make the environment whole.	

Source: Authors, adapted from Gerasimchuk, 2012; Gerasimchuk et al., 2017; Lang, 2010; Organisation for Economic Co-operation and Development, 2013.



Appendix B. Overview of Current Reporting Approaches and Best Practices

Appendix B is current as of October 31, 2025. Please find an up-to-date version [here](#).

Table B1. Subsidy reporting approaches among selected COFFIS member states

Countries	Lead and involved ministries/agencies	Scope and definition	Measurement of fiscal costs	Impact evaluation (emissions, social, competitiveness and other impacts)	Publication and update frequency
The Netherlands	Ministry of Finance leads the process with inputs from stakeholders and research from the Central Planning Bureau and the Netherlands Environmental Assessment Agency.	Own definition of subsidies, building upon the World Trade Organization (WTO) Agreement on Subsidies and Countervailing Measures (ASCM) definition (subsidies deemed to exist when fossil fuel prices do not reflect costs of supply and externalities). Covers direct transfers and tax expenditures. Includes non-energy uses of fossil fuels.	The fiscal cost of subsidies is determined using an inventory approach and effective carbon rates (ECRs).	Emissions impact is evaluated in monetary terms using ECRs. The impact is assessed by comparing the price paid for 1 ton of CO ₂ against the actual societal cost of a ton of CO ₂ .	Annual. Inventory published as part of the national Financial Annual Report under Section 23 “Fossil Schemes.”



Countries	Lead and involved ministries/agencies	Scope and definition	Measurement of fiscal costs	Impact evaluation (emissions, social, competitiveness and other impacts)	Publication and update frequency
Belgium	A whole-of-government approach. Ministries involved: Federal Public Service Finance, Public Health, Food Chain Safety and Environment.	Uses the WTO ASCM definition. Constructed as an extension of reporting on the implementation of the National Energy Climate Plan (NECP).	Direct budgetary expenditures are quantified based on the federal budget (regional budgets are not included). Tax expenditures quantified using the national tax benchmark (not ECR).	No.	Annual. The first inventory published for the EU NECP in 2021.
Ireland	Central Statistics Office prepares the inventory, with contributions from the Department of Finance.	Uses the Organisation for Economic Co-operation and Development's (OECD's) definition of support. Includes direct payments and revenue foregone from the tax system.	The quantification is based on the government budget, effective carbon rates, and net energy taxes.	No.	Updated annually between 2019 and 2022.



Countries	Lead and involved ministries/agencies	Scope and definition	Measurement of fiscal costs	Impact evaluation (emissions, social, competitiveness and other impacts)	Publication and update frequency
Austria	Austrian Federal Ministry of Finance	Green budgeting approach to assess and report on “activities contradicting climate and energy objectives.” Fossil fuel subsidies identified as part of the process, using own definition of subsidies.	No explicit mention of total amounts of fiscal expenditures on fossil fuel support.	Budgetary climate risk is evaluated by rating the extent to which individual budget items contribute to or hinder climate change mitigation, using a scale from -2 to +2. Evaluation of CO ₂ emissions resulting from each measure.	Annual reporting since 2023 as part of the Climate and Environment Budget Report.



Countries	Lead and involved ministries/agencies	Scope and definition	Measurement of fiscal costs	Impact evaluation (emissions, social, competitiveness and other impacts)	Publication and update frequency
France	<p>Whole-of-government approach, with the General Commission for Sustainable Development (Ministry for the Ecological Transition) leading the process.</p> <p>Other agencies involved: Regional Cohesion and the Budget Directorate, Tax Policy Directorate, Directorate General of the Treasury (Ministry for the Economy, Finance and Industrial and Digital Sovereignty).</p>	<p>Green budget reporting on the environmental impact of budget expenditures, including on fossil fuel subsidies.</p>	<p>Quantifying direct budget expenditures unfavourable to the environment.</p> <p>Includes a calculation of ECRs for different energy products, sectors, and economic players, with an implicit disclosure of subsidy levels in determining who pays the least for a ton of CO₂.</p>	<p>Assessment of expenditures against six environmental objectives.</p>	<p>Annual updates since 2021, replacing the green transition financing report.</p>
Finland	<p>Prepared by the Ministry of Finance with support from the Ministry of the Environment</p>	<p>Uses Finland's own definition of subsidies, with a bottom-up inventory approach which covers direct budgetary transfers and revenue foregone from tax exemption measures.</p>	<p>Uses the ECR approach for quantifying subsidies.</p>	<p>No.</p>	<p>Not yet published.</p>



Countries	Lead and involved ministries/agencies	Scope and definition	Measurement of fiscal costs	Impact evaluation (emissions, social, competitiveness and other impacts)	Publication and update frequency
Switzerland	State Secretariat for Economic Affairs	<p>Uses the ACCTS subsidy definition, which expands upon the WTO ASCM definition.</p> <p>Follows the ACCTS definitions and scope, reporting on all measures considered as subsidies (including those subject to the standstill arrangement and other exceptions).</p>	<p>Subsidies are quantified using the Standardised Carbon Rate Measurement mechanism. A subsidy exists when an actual total price applying to CO₂ emissions from a certain fuel is lower than the agreed carbon pricing level, within the scope defined by the Agreement on Climate Change, Trade and Sustainability (ACCTS).</p>	No.	First published in 2025.

Source: Authors, based on personal communications with government officials; Commission Implementing Regulation (EU) 2022/2099, 2022; European Commission, 2025; Tipping et al., 2024; OECD, 2023a.

**Table B2.** Subsidy reporting approaches under selected international agreements and initiatives

International agreements and initiatives	Lead and involved ministries/agencies	Scope and definition	Measurement of fiscal costs	Impact evaluation (emissions, social, competitiveness and other impacts)	Publication and update frequency
ACCTS	<p>Agreement negotiated by trade ministries.</p> <p>ACCTS signatory countries, as of August 2025: Costa Rica, Iceland, New Zealand, and Switzerland</p>	<p>Subsidy definition based on WTO ASCM. ACCTS prohibits all coal subsidies and recognizes tax exemptions for oil and gas exploration and extraction as subsidies, but does not prohibit all tax and royalty exemptions, among other exceptions.</p> <p>Subsidies for the generation of electricity heat and other energy products deemed to exist only when emission intensity goes above certain limits.</p>	Standardised Carbon Rate Measurement applies effective carbon pricing.	n/a	Measures in the standstill category (i.e., subsidies that can be maintained but not expanded) are published in Annex X of ACCTS. The agreement has a notification process, but this is not public.



International agreements and initiatives	Lead and involved ministries/agencies	Scope and definition	Measurement of fiscal costs	Impact evaluation (emissions, social, competitiveness and other impacts)	Publication and update frequency
<p>Fossil fuel subsidy reporting within EU NECPs</p>	<p>Reporting requirement for EU member states stemming from Regulation (EU) 2018/1999, 2018.</p>	<p>Methodology is based on Commission Implementing Regulation (EU) 2022/, 2022. Annex XV lays out common methodological guidance.</p> <p>The guidance uses and expands upon the WTO ASCM definition. Member states to report energy subsidies using the inventory approach. Measures can be categorized as direct transfers, tax expenditures, underpricing of goods/ services, income or price support, consumer/producer price guarantees (cost support or price regulations), etc.</p>	<p>Member States shall report the volume paid in nominal currency value for each subsidy. Effective carbon rate is not used in reporting.</p>	<p>EU 2022/2299, Annex VIII: MS shall provide estimates of “economic and other impacts and report on efforts made to reduce energy poverty.”</p>	<p>10-year NECP to be submitted every 10 years (2019, 2030, 2040, ...). Updated NECP to be submitted every 10 years (2024, 2035, 2045, ...). NECP progress reports to be submitted biannually.</p>



International agreements and initiatives	Lead and involved ministries/agencies	Scope and definition	Measurement of fiscal costs	Impact evaluation (emissions, social, competitiveness and other impacts)	Publication and update frequency
<p>Report on Energy Subsidies in the EU</p>	<p>Led by the European Commission. Based on a report from an external consultancy coordinating with focal points, including ministerial/department officials on member state level.</p>	<p>Uses the WTO ASCM definition of subsidies. All types of energy subsidies are considered, across multiple sectors.</p>	<p>The report captures explicit energy subsidies (similarly to OECD) disbursed through direct budgetary transfers and revenues foregone due to tax exemptions.</p> <p>The 2024 report does not consider freely allocated allowances in the EU Emissions Trading System as a form of subsidy.</p> <p>Subsidy amounts are determined based on information from national budget documents and reports.</p> <p>Subsidy amounts from preferential tax rates and exemptions are measured against baseline tax rates of individual Member States.</p>	<p>The 2023 and 2024 reports include the identification of environmentally harmful energy subsidies.</p>	<p>Reports on Energy Subsidies in the EU released annually since 2022 (European Commission, 2022, 2023, 2025).</p> <p>In 2020 and 2021, subsidy assessments were published as part of the annual State of the Energy Union report (European Commission, 2020, 2021).</p>

Source: Authors, based on personal communications with government officials; Commission Implementing Regulation (EU) 2022/2099, 2022; European Commission, 2025; Tipping et al., 2024; OECD, 2023a.

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