A Guidebook to Reviews of Fossil Fuel Subsidies:

From self-reports to peer learning

International Institute for Sustainable Development

Global Subsidies Initiative

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About GSI

The IISD Global Subsidies Initiative (GSI) supports international processes, national governments and civil society organizations to align subsidies with sustainable development. GSI does this by promoting transparency on the nature and size of subsidies; evaluating the economic, social and environmental impacts of subsidies; and, where necessary, advising on how inefficient and wasteful subsidies can best be reformed. GSI is headquartered in Geneva, Switzerland, and works with partners located around the world. Its principal funders have included the governments of Denmark, Finland, New Zealand, Norway, Sweden, Switzerland and the United Kingdom, as well as the KR Foundation.

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Acknowledgments

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Interviewees:

- Johanna Farelius, Head of Unit, Environmental Economics Unit, Swedish Environmental Protection Agency
- Jose la Rosa, Peru Coordinator of the APEC VPR/IFFSR
- New Zealand Ministry of Foreign Affairs and Trade
- Outi Honkatukia, Chief Negotiator for Climate Change, Ministry of the Environment of Finland

Peer reviewers:

- An Qi, Research Associate at the Energy Research Institute of China's National Development and Reform Commission
- Johanna Farelius, Head of Unit, Environmental Economics Unit, Swedish Environmental Protection Agency
- Outi Honkatukia, Chief Negotiator for Climate Change, Ministry of the Environment of Finland
- Ronald Steenblik, Senior Counsellor, Fossil-Fuel Subsidy Reform, Organisation for Economic Co-operation and Development (OECD)

Purpose and Scope of the Guidebook

This guidebook presents both a briefing and a menu of options related to a new tool of climate and energy governance: self-reviews and peer reviews of fossil fuel subsidies (FFSs) in all economies: developing, emerging and developed.

Self-reviews and peer reviews of FFSs are a tool to promote increasing transparency and accountability in the current commitment of many economies to reform subsidies acting against sustainable development. By undertaking FFS reviews, economies benefit from the transparency and peer learning crucial to establishing the basis and potential progress of reform.

The purpose of the guidebook is to inform a growing community of interested countries about the different elements of such reviews' content and process. The guidebook draws on two sources: (i) the conceptual publications on FFS by the Global Subsidies Initiative (GSI), International Energy Agency (IEA) and Organisation for Economic Co-operation and Development (OECD); and (ii) empirical material: individual countries' self-reports on FFSs, peer reviews of FFSs within the G20 and Asia-Pacific Economic Cooperation (APEC), expert interviews and media reports. The authors have combined these sources into one publication to assist more economies in choosing to undertake self- and peer reviews of FFS and benefitting from them.

The guidebook is structured as follows:

- The Introduction reviews existing country commitments on FFS reform that are supported by self- and peer reviews.
- Chapter 1 describes the main building blocks and methodological options for self- and peer reviews.
- Chapter 2 looks at the existing practices of FFS self-reviews.
- Chapter 3 reflects on the experience of FFS peer reviews under the G20 and APEC.
- The Conclusion summarizes lessons learned from the existing practices and suggests options for economies interested in benefitting from self- and peer reviews of FFSs.

Recommendations on the implementation of FFS reforms remain outside of the scope of this guidebook but are discussed in GSI's long-standing body of work available at www.iisd.org/gsi. This includes *A Guidebook to Fossil-Fuel Subsidy Reform for Policy-Makers in Southeast Asia* and numerous policy briefs and reports focusing on the FFS agenda within the G20, APEC, United Nations Framework Convention on Climate Change, World Trade Organization and at the level of individual countries.

Executive Summary

With a global value of at least USD 425 billion a year, fossil fuel subsidies (FFSs) are often fiscally burdensome, economically inefficient, socially regressive and environmentally harmful. Over 2014–2016, over 50 countries—from Saudi Arabia to Canada, India to Ukraine—increased, or removed government controls, on prices of fossil fuels, directly or partially removing subsidies. These reforms have created fiscal space for repayment of debt and funding development.

Why Self- and Peer Reviews of FFS?

Self- and peer reviews of FFSs are a tool for increasing transparency and accountability for the policies that potentially act against sustainable development. As such, FFS reviews serve both domestic and international purposes and audiences. Domestically, policy-makers who are interested in FFS phase-out can benefit from self- and peer reviews of FFSs as a way to set a transparent baseline for reform, prepare for it and make progress.

Internationally, FFS reviews advance peer learning and hold potential for cross-pollination. International experience contributes to building the case for FFS reform in individual countries by stressing that even though reform circumstances are always national, countries are not alone in undertaking this effort.

FFS Review Champions

The leaders of the G7, the G20, the European Union (EU) (a member of G20) and the Asia-Pacific Economic Cooperation (APEC) committed to "phase out and rationalise over the medium term inefficient FFS" "that encourage wasteful consumption" "while providing targeted support for the poorest" (G20, 2009; G7, 2016; APEC, 2009). To facilitate progress against their commitment, both G20 and APEC leaders decided to use voluntary self-reviews and, later, peer reviews of FFSs.

Non-G20 groupings such as the Friends of Fossil Fuel Subsidy Reform ("Friends") have also promoted FFS reform and FFS reviews for fiscal stability reasons, as well as a tool for climate action. As of August 2017, the Friends included nine countries: Costa Rica, Denmark, Ethiopia, Finland, New Zealand, Norway, Sweden, Switzerland and Uruguay. Over 40 countries supported a Friends' communiqué calling for the phase-out of fossil fuel subsidies in the lead up to the Paris Agreement of 2015.

Some of the FFS reform commitments have a specific deadline. In 2016 (and as reconfirmed in 2017), G7 countries "committed to phasing out inefficient fossil fuel subsidies that encourage wasteful consumption, and encourage all countries to do so by 2025" (G7, 2016; G7 Energy Ministerial, 2017; G7 Environment Ministerial, 2017). Further, under the Europe 2020 Strategy launched in 2010, EU Member States committed to begin developing plans for phasing out environmentally harmful subsidies by 2020.

FFS reform is also a means of implementation of the UN Sustainable Development Goals (SDGs). The SDGs' indicator 12.C.1 sets the basis for countries' reporting on both production and consumption subsidies to fossil fuels from 2020 onwards. FFS reviews can have synergies with reporting on this indicator. For the full list of international commitments and supportive language on FFS see Annex 2.

The Building Blocks of FFS Reviews

Expert organizations such as the Organisation for Economic Co-operation and Development (OECD), International Energy Agency (IEA), International Monetary Fund (IMF), Global Subsidies Initiative (GSI) and several other think-tanks and non-governmental organizations have accomplished numerous reviews of subsidies to fossil fuel production and consumption. In contrast, this guidebook covers the two types of FFS reviews that are driven by countries themselves: self-reviews (or self-reports) and peer reviews (for which self-reports typically serve as a first step).

FFS reviews take different forms depending on the needs of the government in question. It can be helpful to think of different FFS review elements as Lego bricks that can be assembled in various configurations. These elements are: scope of an FFS review, identifying and defining FFS, measurement and description of FFS, their evaluation and, finally, next steps on the FFS under the review. The available options for each of the review elements are mostly combinable and are laid out in Table ES1 below.

FFS self- and peer reviews are not compliance mechanisms. FFS reviews are voluntary and owned by volunteering economies. The economy participating in the peer review decides on how to define the different elements, drawing on the solid body of expert literature. Peer reviews, in particular, are described as "a discussion among equals" (OECD, n.d.c).

The first step is to define the review scope and the underlying subsidy definition, which is normally done in consultations with experts and stakeholders. The subsidy definition contained in the World Trade Organization's *Agreement on Subsidies and Countervailing Measures* is the most widely accepted and used. To ensure consistency of the review, it is strongly recommended to follow one of the common FFS reporting templates (see Annex 4).

Typically, FFS reviews go a step beyond subsidy listings and tend to focus on reform efforts. Some economies extend the scope of their FFS review to discuss the inefficiencies as well as sustainability and pollution issues in their energy sectors more broadly. For example, both Finland and Sweden have benefited from the broader scope of their reviews by examining FFS within the context of potentially environmentally harmful subsidies under the EU commitment to phase these out by 2020. Meanwhile, FFS reviews should specifically analyze the impact of FFS, and their possible reform, on the poorest.

Table ES1. Menu of combinable options for FFS reviews

Element	Selected combinable options
Identifying and Defining FFS	Subject matter: a) Fossil fuels; b) Electricity and heat Definitions: a) WTO (ASCM); b) OECD's "Support"; c) IEA's "change in price or cost"; d) External costs e.g. IMF's "getting the prices right"
Review Scope	Subject matter: a) FFSs; b) FFS reform efforts; c) wider policies on the energy sector and energy-using technologies, e.g. transport; d) environmentally harmful subsidies Agencies involved: government bodies responsible for policies in the spheres of finance, energy, economic and regional development, trade and customs, investment, transport, agriculture, social protection and others as required. Geography: national, subnational and local level
Subsidy Measurement	Data collection with the use of common templates (Annex 4): a) start with the OECD Inventory and other available estimates from IEA, IMF, GSI and other expert and non-governmental organizations; b) ask ministries; c) commission an independent study. Method: The least disputable FFS measurement has always been governments' own estimates of direct budgetary transfers and tax expenditures that also underlie the OECD's inventory as well as the analysis by GSI and several other non-governmental organizations. Complimentarily to this approach, IEA uses price-gap assumptions to estimate price-related subsidies.
FFS Evaluation	"Inefficient": Evaluation and definition of efficiency within the context of each economy with view to a) stated policy objectives; b) availability of more efficient policies and thus the need for reform "Wasteful consumption": review a) unintended beneficiaries and b) unintended and suboptimal uses of energy "Providing targeted support for the poorest": social aspects of FFS and their reform are critical
Next Steps on Subsidies Under Review	a) Identification of need for reform and required action; b) publication and wider discussion with stakeholders. Translation into a national language critical for peer reviews.

Source: Prepared by GSI

Takeaways from Accomplished FFS Reviews

This guidebook discusses each of the elements separately, and then brings them together again by describing the FFS review experiences of China, Finland, New Zealand, Peru and Sweden. The volunteering economies have built a body of FFS review precedents. The top tips from these precedents include:

- **Use the review and its elements to best serve the economy's needs** and focus it on the policies that are considered for reform. Many countries have also benefited from extending the scope of the review to broader energy-policy issues, energy-intensive industries and transport, and environmentally harmful subsidies. FFS reviews should specifically analyze the impact of FFS, and their possible reform, on the poorest.
- **Own the review in terms of government staff involvement** and thorough preparation of briefing materials by the government. Such preparation requires technical expertise and multidisciplinary collaboration of government agencies and other stakeholders.
- **Staff the government team and the reviewers panel with experts** who have technical expertise and experience working on multidisciplinary issues (and, for peer reviews, in different countries). Selection of the panel review team leader is crucial for an effective review process.
- **Allow sufficient time for the review process—at least half a year.** For peer reviews that require translation into the national language, the process can take longer, but such translations are critical for the review's coordination and success.
- **Mobilize sufficient financial resources for covering the cost of the review**, which is particularly important for advancing FFS peer reviews in developing economies. Within the G20, countries are expected to cover the costs of their own reviews, but for developing countries within and outside of APEC, the success of FFS reviews depends on donor assistance.
- **Use the review to support reforms.** FFS reviews can be used to promote transparency and ambition for reform, building political awareness of the issues. They can also draw on best practices of reform in other sectors and countries and provide a baseline for future policies.

FFS reviews encourage more interaction across government agencies on the evaluation and reform of policies supporting energy production and consumption. FFS reviews also serve as a basis for international exchange of FFS reform experience. However, all these benefits can be reaped only if governments invest in FFS reviews and use them to support reforms rather than undertaking them merely as a pro-forma exercise.

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Acronyms

APEC	Asia-Pacific Economic Cooperation
APRM	African Peer Review Mechanism
APRP	APEC Peer Review Panel
ASCM	Agreement on Subsidies and Countervailing Measures
ATAARI	Technical Assistance to Advance Regional Integration
EHS	environmentally harmful subsidies
EWG	Energy Working Group (within APEC)
EU	European Union
FFS	fossil fuel subsidy
Friends	Friends of Fossil Fuel Subsidy Reform
G7	Group of Seven
G20	Group of Twenty
GSI	Global Subsidies Initiative
GST	general sales tax
IEA	International Energy Agency
IISD	International Institute for Sustainable Development
IMF	International Monetary Fund
LPG	liquefied petroleum gas
MBIE	Ministry of Business, Innovation, and Employment (New Zealand)
NGO	non-governmental organization
OECD	Organisation for Economic Co-operation and Development
SDGs	Sustainable Development Goals
VAT	value-added tax
VPR/IFFSR	Voluntary Peer Review of Inefficient Fossil Fuel Subsidy Reforms (within the APEC process)
WTO	World Trade Organization
UN	United Nations
UNEP	UN Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
USAID	U.S. Agency for International Development

Introduction: Why Self- and Peer Reviews of FFS?

Sum and Substance

- Self-reviews and peer reviews of FFS are a tool of increasing transparency and accountability over the policies that potentially act against sustainable development.
- Domestically, policy-makers who are interested in FFS phase-out can benefit from self- and peer reviews of FFS as a way to set a transparent baseline for reform, prepare for it and make progress.
- Internationally, FFS reviews advance peer learning and hold potential for cross-pollination. International experience contributes to building the case for FFS reform in individual countries by stressing that even though reform circumstances are always national, countries are not alone in undertaking this effort.
- FFS reviews are voluntary and owned by volunteering economies. FFS peer reviews are “a discussion among equals” and not a compliance mechanism.

Self- and peer reviews of policies are an increasingly popular governance tool. Examples include policy reviews in such spheres as human rights, trade and investment, environment policies and energy efficiency (see Annex 1).

Fossil fuel subsidies (FFS) are another complex issue that lends itself to policy review. With a global value of at least USD 425 billion a year,[1] FFS are often fiscally burdensome, economically inefficient, socially regressive and environmentally harmful (Merrill et al., 2017). But they are also sometimes an important currency in politics, and therefore their reform can present a challenge for governments (Beaton, et al., 2013; Victor, 2009).

Expert organizations such as the Organisation for Economic Co-operation and Development (OECD), International Energy Agency (IEA), International Monetary Fund (IMF), Global Subsidies Initiative (GSI) and several other think-tanks and non-governmental organizations (NGOs) have accomplished numerous reviews of subsidies to fossil fuel production and consumption. In contrast, this guidebook covers the two types of FFS reviews that are driven by countries themselves: self-reviews (or self-reports) and peer reviews (for which self-reports typically serve as a first step). As the subject matter of this guidebook, an FFS review can be defined as: the systematic examination and assessment of subsidies to fossil fuel production and consumption in a volunteering economy,[2] with the goal of their identification, measurement, evaluation and rationalization through the adoption of best practices. The exact scope and process of an FFS review are determined by the volunteering economy that initiates it, in consultations with stakeholders. The review is owned by the volunteering economy and conducted on a non-adversarial basis either by the volunteering economy itself (in the case of self-reviews or self-reports) or by an invited panel of international experts, particularly from peer economies (in the case of peer reviews).[3]

FFS self- and peer reviews are a tool of increasing transparency and accountability over the policies that potentially act against sustainable development. As such, FFS reviews offer a lot of benefits to the economies that volunteer for such assessments (see Box 1).

Domestically, policy-makers who are interested in FFS phase-out can benefit from self- and peer reviews of FFS as a way to set a transparent baseline for reform, prepare for it and make progress.

Internationally, FFS reviews advance peer learning and hold potential for cross-pollination. International experience contributes to building the case for FFS reform in individual countries by stressing that even though reform circumstances are always national, countries are not alone in undertaking this effort.

1 Chapter 2 and Annex 3 review the available FFS estimates in more detail. FFS estimates depend on the underlying methodology and therefore differ. USD 420 billion is a conservative estimate of both fossil fuel production subsidies (USD 100 billion) and fossil fuel consumption subsidies (USD 325 billion) in 2015.

2 A "volunteer country" would be a more common term, but the APEC's standard is to refer to its members as "economies." For example, the APEC's guidance on voluntary peer reviews of FFS uses the term "volunteering economy" (APEC Energy Working Group., n.d.). Since this guidebook covers different platforms for FFS reviews and discusses the APEC practices in substantial detail, we will use the term "economy" and "volunteering economy" in the sense of "party that is subject to FFS review."

3 This is GSI's own formulation using a definition of peer review from Pagani (2002, p. 4) as well as APEC and G20 statements and documents related to FFS reviews.

Box 1. The benefits of self- and peer reviews of FFS to volunteering economies

Based on both the volunteering economies' testimonials (including interviews conducted for this guidebook) and evidence around policy reviews in general (Gerasimchuk, 2013), the benefits of an FFS review can be described as following:

- **Increased transparency and accountability** with respect to APEC, G20 and other FFS reform commitments as well as UN Sustainable Development Goals' target 12c.
- **Creating a baseline** for discussing, monitoring and rationalizing FFS across agencies within an economy, often within the context of transition to cleaner and low-carbon energy systems.
- **Understanding** where an economy's FFS and low-carbon energy policies are in comparison with those of other economies while rethinking their context and providing different perspectives.
- **Comparing and contrasting** the scale and nature of FFS over time, and tracking their reforms.
- **Increased opportunities to seek expert advice & targeted assistance** for the economy's action plan, including advice and shared experience on politically sensitive issues.
- **Highlighting success and good practice** through positive examples where an economy has recently reformed FFS.
- **Facilitating policy dialogue** to share experience and policy tools among peer economies within the APEC, G20 and more broadly.
- **Creating precedent**s for other economies to follow and establishing a community of practice.

Testimonial: "New Zealand has benefited from engagement in a wide variety of peer reviews in both OECD and APEC contexts... OECD economic surveys are highly valuable for a small country like New Zealand, where the domestic policy advice community is quite small and often quite inward looking. Comparative analytics from the [OECD] Secretariat and strong encouragement from our peers for faster fiscal consolidation and labour-market reforms supported our policy reform process... New Zealand's experience [with the APEC Peer Review on Energy Efficiency] was very positive. The review provided an insightful snapshot of our economy's entire energy-efficiency regime and delivered expert advice for New Zealand's action plan for improving energy efficiency. The review also provided helpful advice on politically sensitive policy issues. The process expanded the policy space and debate in New Zealand. The report added weight to the advice from NZ officials to ministers on energy efficiency policy interventions. The international peer reviewers noted what we do well, including in geothermal energy. Given that the findings were made public, this enhanced New Zealand's reputation and led to business opportunities in a reviewer's country" (as quoted in Gerasimchuk, 2013, p. 4).

New Zealand is also one of the first countries that has completed a voluntary peer review of FFS and characterized this process as a "useful health check" (Friends of FFS Reform, n.d.) (see Box 10 for more detail).

The majority of reviews discussed in this guidebook are voluntary in nature, though they can be made mandatory if countries so choose, as they have, for instance, in the case of the trade policy reviews[4] of the World Trade Organization (WTO). Under any scenario, policy review is not a compliance mechanism, and it may call for reform only if appropriate (OECD 2007, p.2). Moreover, policy review "is not… a substitute for, or comparable to such compliance mechanisms as dispute settlement bodies, MRV (monitoring, reporting, and verification) systems, or courts or other judicial processes" (United Nations Conference on Sustainable Development Secretariat, 2011, p. 1). Peer reviews, in particular, are "a discussion among equals, not a hearing by a superior body that will hand down a judgement or punishment" (OECD, 2007, p. 2).

4 Certain WTO trade policy reviews cover FFS in detail.

Chapter 1. FFS Review Context Within International Committments

Sum and Substance

- The leaders of G7, G20, the EU (a member of G20) and APEC committed to "phase out and rationalise over the medium term inefficient FFS" "that encourage wasteful consumption" "while providing targeted support for the poorest" (G20, 2009; G7, 2016; APEC, 2009). To facilitate progress against their commitment, both G20 and APEC leaders decided to use voluntary self-reviews and, later, peer reviews of FFSs.
- Non-G20 groupings such as the Friends of Fossil Fuel Subsidy Reform ("Friends") have also promoted FFS reform and FFS reviews for fiscal stability reasons, and as a tool for climate action. As of August 2017, the Friends comprised nine countries: Costa Rica, Denmark, Ethiopia, Finland, New Zealand, Norway, Sweden, Switzerland and Uruguay. Over 40 countries supported a Friends' Communiqué calling for the phase-out of FFSs in the lead up to the Paris Agreement of 2015.
- Some of the FFS reform commitments have a specific deadline. In 2016 (and as reconfirmed in 2017), G7 countries committed to phasing out inefficient fossil fuel subsidies that encourage wasteful consumption, and encourage all countries to do so by 2025 (G7, 2016; G7 Energy Ministerial, 2017; G7 Environment Ministerial, 2017). Further, under the Europe 2020 Strategy launched in 2010, EU member states committed to begin developing plans for phasing out environmentally harmful subsidies by 2020.
- FFS reform is also a Means of Implementation of the UN Sustainable Development Goals (SDGs). The SDG indicator 12.C.1 sets the basis for countries' reporting on both production and consumption subsidies to fossil fuels from 2020 onwards. FFS reviews can have synergies with reporting on this indicator. For the full list of international commitments and supportive language on FFS see Annex 2.

Reform of FFS acting against sustainable development lies at the intersection of climate action and improved fiscal and financial governance in general. For this reason, FFS reform and FFS reviews are of interest to multiple forums, groups of countries and government agencies within each country.

1.1 Evolution of Commitments and Calls on FFS Reform

The main, though not the only possible, platforms for FFS reviews are the G20 and APEC. These two global governance forums with overlapping membership (see Figure 1) are synced on the topic. In 2009, both G20 and APEC leaders committed to "phase out and rationalise over the medium term inefficient fossil fuel subsidies [that encourage wasteful consumption] while providing targeted support for the poorest"[5] (G20, 2009; APEC, 2009).

The leaders have reiterated this commitment at every subsequent G20 and APEC summit since 2009. The fact that G20 and APEC memberships overlap has created some economies of scale in the sense that the nine economies that belong to both forums are expected to review and reform inefficient FFSs under the G20 process, which counts against their APEC commitment too.

There is rationale for countries outside of the G20 and APEC to implement FFS reviews as well. From 2009, calls for FFS reform were built into various documents and declarations of the G7, Financing for Development, European Parliament, US-Nordics, Vulnerable 20 (V20), civil society organizations and insurers (see Annex 2). A commitment to phase out environmentally harmful subsidies by 2020 under the Aichi Targets of the UN Convention on Biological Diversity and European 2020 Strategy also apply to FFS (European Commission, 2011; Parties to the Convention on Biological Diversity, 2010).

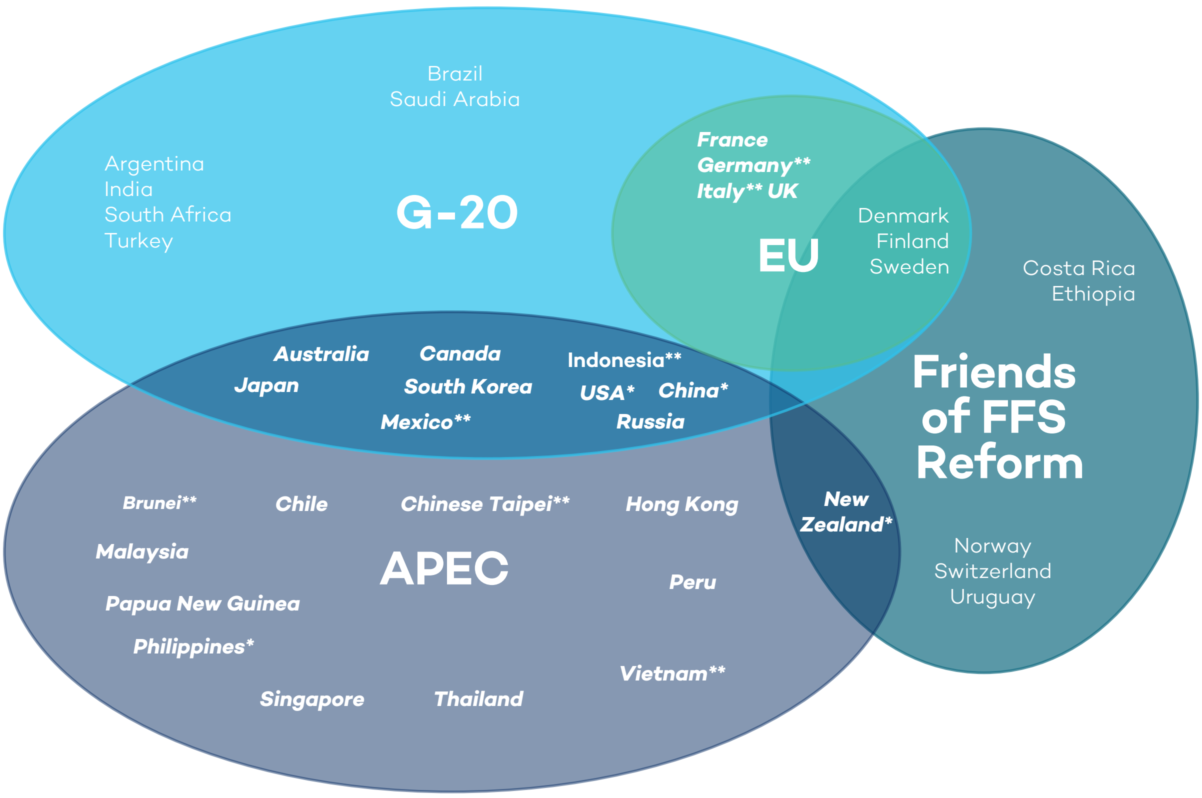


Figure 1. FFS commitments and peer reviews within G20 & APEC

Individual members of G20 and APEC are marked in bold Italic. EU, as a block, is the 20th member of the G20. Countries that have completed their peer reviews of FFS are marked with one asterisk (*). Countries that have volunteered for and are at different stages of peer reviews at the time of writing (August 2017) are marked with two asterisks (**). For the countries that are members of both G20 and APEC, peer reviews are normally undertaken within G20, but can also be used to count for the symmetrical commitment within APEC.

5 Chapter 2 elaborates on each of the elements of this commitment: definition of fossil fuel subsidies, "inefficient," "wasteful consumption," "providing targeted support for the poorest."

In 2010, the Friends of FFS Reform group of countries was formed to support G20 and APEC leaders' commitments. As of June 2017, the Friends included nine countries: Costa Rica, Denmark, Ethiopia, Finland, New Zealand, Norway, Sweden, Switzerland and Uruguay. In 2015 the Friends, together with France and the United States, launched a communiqué calling on the international community to increase efforts to phase out FFSs in light of a global effort to reach an agreement at the United Nations Framework Convention on Climate Change (UNFCCC) Conference of the Parties. The communiqué received considerable support from more than 40 countries and thousands of businesses that recognize FFS reform as an important policy tool to liberate domestic resources for potential investment in sustainable development goals (Friends of Fossil Fuel Subsidy Reform, 2015). A number of the Friends have undergone FFS reviews, including New Zealand (in 2015 under APEC, following Peru's peer review in 2014), Sweden (self-review in 2017) and Finland (self-review in 2015). Sweden and Finland are used as case studies within this guidebook.

The Paris Agreement on climate change does not mention FFSs, although scope for addressing them through voluntary early and cooperative action exists under Article 6. Several countries—namely China, Ethiopia, Egypt, Ghana, India, New Zealand, Mexico, Morocco, Sierra Leone, Singapore, Vietnam and United Arab Emirates—included FFS and energy pricing reforms within their Intended Nationally Determined Contributions toward implementation of the Paris Agreement (Merrill, Harris, Casier, & Bassi, 2015).

1.2 The Challenge of FFS Transparency

The calls for FFS reform include the urge for more transparency and reporting on FFS. In particular, the G20 and APEC commitments were accompanied by the leaders' request to the member countries' energy and finance ministers to prepare self-reports on FFSs so that the leaders can "review progress" at the next summits.

The OECD, the IEA and several other expert organizations, such as the GSI, have supported these calls and commitments by focusing on transparency over FFS. The expert community developed and applied several methodologies to measure FFS in the G20, APEC and some other countries (GSI, 2011; IEA, 2017; OECD, 2011) (see Section 3 for more detail).

Technically, from early on, FFS reporting efforts could draw on the information at least partially available through either governments' reporting on budgetary transfers, tax expenditures and other forms of support (especially for FFS inventories) or market data (especially for price-gap estimates of FFS). Since the early days of the G20 and APEC commitments, limited FFS estimates were also available through the countries' trade policy reviews to the WTO (see Box 2) and, for the EU member states, assessments of environmentally harmful subsidies (EHS) (Withana et al., 2012).

A number of countries have already submitted their FFS reports in preparation for the subsequent G20 summits, while others—for example, Finland and Sweden—undertook similar assessments outside of these forums (see Boxes 6 and 7 in Section 4).

Meanwhile, certain countries[6] have chosen to report back to the G20 that they have no "inefficient fossil-fuel subsidies that encourage wasteful consumption" or "subsidies that lower the price of fossil fuels below international market price levels" (G20 Working Group on Energy and Commodity Markets, 2012). Further, some G20 members noted that "efficient reporting" on reform progress was, despite early attempts to come up with a consistent methodology for the G20, "hindered by the fact that for the moment the term 'energy subsidies' and the way to calculate them have not been clearly identified and generally agreed, which leads to unstandardized reporting from G-20 members" (G20 Working Group on Energy and Commodity Markets, 2012).

6 Namely: Brazil, China, France, Italy, Japan, Russia, Saudi Arabia, South Africa and the UK.

A similar dissonance within the G20 was later caused by attempts to agree on "a date certain" by which countries should phase out inefficient FFS "over the medium term." This effort succeeded within a smaller group of countries, namely G7: in 2016 its leaders stated that they "remain committed to the elimination of inefficient fossil fuel subsidies and encourage all countries to do so by 2025" (G7, 2016). In 2017, both energy ministers and environment ministers of the G7 countries reconfirmed the 2025 deadline, though it was not mentioned in the Leaders' Statement following the G7 summit in May 2017 (see Annex 2 for more detail).

Recognizing that member economies vary in their ambitions and needs, G20 and APEC leaders agreed to set up a voluntary peer-review mechanism for FFS in 2012 and 2013 respectively (APEC, 2013; G20, 2012, 2012). This approach has created another route to progress, as it enabled member economies to move in the same direction of FFS reform, but each at their own pace, allowing them to take account of domestic politics and social and economic sensitivities and concerns.

In Figure 1, asterisks mark the countries that have already volunteered for FFS peer reviews. As explained in more detail in Chapter 4 and Table 4, within APEC, Peru, New Zealand and the Philippines were the first to complete peer reviews, while these assessments were at different stages of completion for Chinese Taipei, Vietnam and Brunei as of June 2017. China and the United States were the first to undergo peer reviews under the G20 umbrella, reporting in 2016, while reviews of Germany and Mexico are pending in 2017, to be followed by the same exercise for Indonesia and Italy (Steenblik, 2016). In other words, as of June 2017, almost a third of G20 members and nearly a half of APEC members have committed to undergo FFS peer reviews.

FFS self-reviews and peer reviews need not be confined to the G20 and APEC, though these two forums remain the two main platforms for FFS reviews. In 2015 the issue was included within the Sustainable Development Goals (SDGs) as part of Goal 12 on sustainable consumption and production patterns, namely as a means of implementation, to "rationalize inefficient fossil fuel subsidies that encourage wasteful consumption" (UNSTATS, 2016). SDG indicator 12.C.1 sets the basis for countries' reporting on both production and consumption subsidies, with a methodology planned to be developed by March 2018 and national data reporting to start in 2020 (Sustainable Development Goals, n.d.) (see Annex 3 for more detail). FFS reviews can have synergies with reporting on this indicator.

Transparency over FFS remains a challenge, but one that can be overcome through the integration of FFS reporting into standard practices of government accountability (e.g., publishing tax expenditure budgets) and national statistics, as well as more research—as manifested by OECD, IEA and NGO publications.

Chapter 2. The Building Blocks of an FFS Review

Since FFS reviews are voluntary and "economy-owned," they take different forms depending on the needs of the government in question. It can be helpful to think of different FFS review elements as LEGO® bricks that can be assembled in various configurations. This section discusses these elements one by one: identifying and defining FFSs, scope of an FFS review, measurement of FFSs, their evaluation and, finally, use of the review. The available options for each of the review elements are mostly combinable and are laid out in Table 1 below.

Chapters 3 and 4 illustrate how governments assemble these elements of an FFS review in practice.

Table 1. Menu of combinable options for FFS reviews

Element	Selected combinable options
Identifying and Defining FFS	**Subject matter:** a) fossil fuels; b) electricity & heat **Definitions:** a) WTO (ASCM); b) OECD's "Support"; c) IEA's "change in price or cost"; d) External Costs e.g. IMF's "getting the prices right"
Review Scope	**Subject matter:** a) FFSs; b) FFS reform efforts; c) wider policies on the energy sector and energy-using technologies, e.g. transport; d) environmentally harmful subsidies **Agencies involved:** government bodies responsible for policies in the spheres of finance, energy, economic and regional development, trade and customs, investment, transport, agriculture, social protection and others as required. **Geography:** national, subnational and local level
Subsidy Measurement	**Data collection** with the use of common templates (Annex 4): a) Start with the OECD Inventory and other available estimates from IEA, IMF, GSI and other expert and non-governmental organizations; b) ask ministries; c) commission an independent study. **Method:** The least disputable FFS measurement has always been governments' own estimates of direct budgetary transfers and tax expenditures that also underlie the OECD's inventory as well as the analysis by GSI and several other NGOs. Complimentarily to this approach, IEA uses price-gap assumptions to estimate price-related subsidies.
FFS Evaluation	**"Inefficient":** evaluation and definition of efficiency within the context of each economy with view to a) stated policy objectives; b) availability of more efficient policies and thus the need for reform **"Wasteful consumption":** review a) unintended beneficiaries and b) unintended and suboptimal uses of energy **"Providing targeted support for the poorest":** social aspects of FFSs and their reform are critical
Next Steps on Subsidies Under Review	a) identification of need for reform and required action; b) publication and wider discussion with stakeholders. Translation into a national language critical for peer reviews.

Source: repared by GSI

2.1 Defining and Identifying FFS

Sum and Substance

- The volunteering economy identifies FFSs, drawing on various sources of information and the solid body of methodological literature.
- Subsidy definition contained in the WTO Agreement on Subsidies and Countervailing Measures is the most-widely accepted and used.
- It is strongly recommended to follow one of the common FFS reporting templates (see Annex 4).

Defining fossil fuel subsidies is a product of, first, defining fossil fuels, and, second, defining subsidies. It is critical for reviewers to be consistent in the use of the chosen FFS definition throughout the process, and to have access to clearly provided information on the reviewed policies. To ensure such consistency, it is strongly recommended to follow one of the common FFS reporting templates. Annex 4 provides examples of templates used by the APEC and G20 countries as well as the GSI template.

2.1.1 A Checklist of Fossil Fuels

Fossil fuels include both 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 (LPG), liquefied natural gas, compressed natural gas, and coal and peat briquettes. Primary fuels include in particular those fossil fuels that are extracted from both conventional and unconventional sources. The latter include, for example, oil extracted from bituminous sands, shale-based natural gas and coal-bed methane (OECD, 2015a).

Electricity and heat are not technically fossil fuels, but in many countries, a proportion of generation is fuelled with the fossil feedstock. Therefore subsidies to electricity and heat generation are a natural fit for FFS reviews in such economies. The IEA includes subsidies to fossil-fuel-fired electricity into its price-gap estimates of FFSs. Meanwhile, there are non-energy uses of fossil fuels, for instance in chemistry or metallurgy, that are much more rarely subject to FFS reviews.

In physical terms, subsidies can also be provided at different stages of fossil fuel production and consumption, such as gaining access to reserves, their exploration and appraisal, field development, extraction, transportation of fossil fuels, construction and operation of electricity and heat generation units, refineries, electricity transmission and distribution, consumption in the public sector, industry and household use as well as decommissioning of fossil fuel facilities.

2.1.2 Subsidy Definition

There is no guidance from either the G20 or APEC on what FFS definition should be used.

The most widely recognized definition of a subsidy originates in the Agreement on Subsidies and Countervailing Measures (ASCM) of the WTO (see Box 2), which has been signed by 164 countries. The ASCM subsidy definition is very close to the definition of **"government support"** used by the OECD in its inventories (see Box 3). The GSI and several other NGOs also use the ASCM definition. The terms "subsidies" and "government support" can be considered as interchangeable synonyms and are used as such in this guidebook.

However, the ASCM has not developed guidance or interpretation to address the issues specific to the energy industry such as, for instance, different taxation benchmarks in different countries as well as the natural resource rent that governments seek or fail to capture from the extractive companies, especially in the oil and gas sector. Importantly, the ASCM has been developed to discipline subsidies that have trade-distorting effects and that are specific to certain recipients (i.e., are not given generally). Organizations such as the GSI use only articles 1(a)(1) and 1(a)(2) to identify subsidies, and do not apply clauses 1.1(b) nor 2.1, which are used to assess if a subsidy can be challenged under the WTO.

The **IEA's subsidy definition** is simpler, but narrower, and it has no legal power. The IEA defines energy subsidies as any government action that lowers the cost of energy production, raises the price received by energy producers or lowers the price paid by energy consumers (IEA, 2006). It therefore misses a lot of subsidies that do not have an impact on energy prices in short and medium terms, including, for example, certain tax breaks and cross-subsidies (see Annex 7).

Another useful concept is that of **"preferential treatment"**: if a government preferentially treats one customer better financially than others, or prefers one firm financially within an industry, or prefers one industry financially compared to others, this is likely to provide evidence of subsidy.

Meanwhile, in parallel to international concepts on subsidies, there are also regional (e.g., the EU concept of "state aid") and national legal and conceptual frameworks on energy pricing and taxation. These national contexts determine how the term "subsidy" is formally defined and understood in each country. For example, in Indonesia, the term "subsidy" is deeply associated with regulated prices for consumers and is of limited use to address government support to the production of fossil fuels.

Box 2. Commonly used definitions and measurement of FFS: WTO

The **WTO's ASCM** is binding for its 164 Members (as of June 11, 2017). It applies to all subsidies and has no provisions specific to the energy sector.

From Article 1: Definition of a Subsidy (emphasis added by this document's authors):

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)****(1);*

(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.

Article 2: Specificity

2.1 In order to determine whether a subsidy, as defined in paragraph 1 of Article 1, is specific to an enterprise or industry or group of enterprises or industries (referred to in this Agreement as "certain enterprises") within the jurisdiction of the granting authority, the following principles shall apply: "

To date, the WTO's involvement in FFS has been limited. In part, this is because many WTO members do not sufficiently notify on their FFSs, whether because of a lack of data and understanding of energy subsidies and their trade effects, current shortfalls in the ASCM notification questionnaire or a lack of mechanisms to enforce notification. In the absence of case law and targeted research, there is also a lack of legal clarity on the extent to which different types of FFS can be disciplined by the ASCM. Meanwhile, since subsidy analysis is a core expertise of trade experts, FFS reviews can significantly benefit from the inclusion of trade ministry representatives on the review teams.

Sources: WTO, n.d.; Wooders & Verkuijl, 2017

Box 3. Commonly used definitions and measurement of FFS: OECD

The OECD has produced an inventory of support measures for fossil fuels in the OECD countries and a selection of partner countries for the past several years (OECD, 2015a, n.d.a). Thus the OECD's large body of work and publications includes a table of types of support measures for around 40 countries and can be used as a launchpad for an FFS review. That was exactly the approach of New Zealand, which took the OECD inventory as a starting point and evaluated all FFSs identified by OECD in its voluntary peer review under the APEC process (APEC, 2015).

The OECD's approach involves constructing an inventory of government support policies affecting the production or consumption of fossil fuels. Its approach derives from the Producer Support Estimate and Consumer Support Estimate (PSE-CSE) framework that the OECD initially developed for agriculture. This framework allows for the estimation of transfers that are observable through deviations in internal prices from international reference prices. However, given that the prices of fossil fuels in most OECD countries are at least as high as an international reference price, the inventory does not currently include estimates of market transfers (see Box 4 on top-down approach [price-gap]).

The number of measures applied across its membership and partner economies is large, and OECD had to make choices about where to set the boundaries. Currently, for example, the OECD Inventory includes only budgetary transfers and tax expenditures. It is developing a method for estimating risk transfers (such as those provided through loan guarantees and concessional loans and insurance), and the subsidy element of equity capital injected into state-owned enterprises. These improvements are expected to increase the overall magnitude of reported subsidies. In contrast with the work done by other organizations, the OECD has also included a number of measures applied by subnational jurisdictions. The OECD's estimates are derived mainly from publicly available data reported by the respective governments. Tax expenditures benefitting consumers refer mainly to reductions or exemptions from value-added and fuel excise taxes.

The OECD describes what it finds as "government support" measures rather than subsidies. In practice, there is a wide overlap between OECD "support" and WTO "subsidy," and the two would typically yield a similar set if inventories were produced against them. However, certain support measures, for example, market price support arising from import tariffs, may not be termed subsidies under the WTO definition.

Source: OECD, 2015a; GSI, 2014

The definition of subsidies is easiest to explain through concentric circles (OECD, 2010). This lends itself to an analogy with a Russian nesting doll as presented in Figure 2. At the centre is direct budgetary transfers to producers and consumers of energy. This category also includes liabilities for such direct transfers as a result of transfer of risks from energy producers or consumers to governments. Such cases include, for instance, the provision of loan or loan guarantees at below-market rates or governments assuming the costs of preventing and remediating environmental damage.

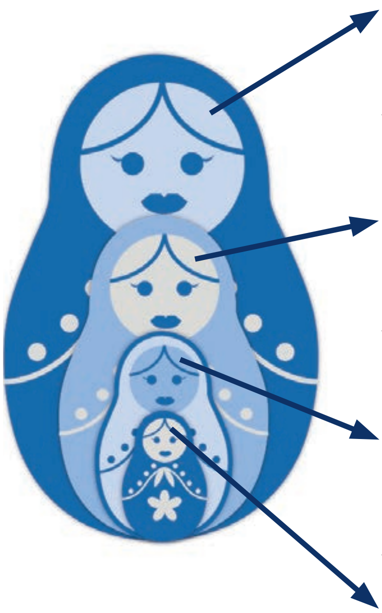
The second biggest "doll" encompasses all government revenue forgone in terms of uncollected or under-collected levies on energy production and consumption. In other words, the value of this support equals the deviations from the national benchmarks of the respective corporate profit tax, property and land tax, royalties, fees on infrastructure use for producers, and reduced rates and exemptions with respect to value-added tax (VAT), excise and other possible taxes on energy sold to consumers.

These two inside "nesting dolls" capture the types of subsidies that have been subject to recent reforms in many countries and where the G20 and APEC commitments concentrate as well. The main reason is the apparent cost of such measures to the budget. The two inner nesting dolls—direct budgetary transfers and government revenue foregone—are also the subject of quantification of OECD's renowned Inventory of Support Measures for Fossil Fuels (OECD, n.d.a).

The third "nesting doll" includes induced transfers to producers or consumers of energy through price or market regulations. In this case, there is no direct transfer from government budgets, and the cost of subsidies is pushed on energy-supplying companies (though the latter can also be compensated by the government for the losses they incur this way). This is by far the most sizeable category in the IEA estimates of consumer subsidies conferred as a result of selling energy below market rates. However, this category can also include cross-subsidies (uncaptured by IEA, see Annex 7). In the case of 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).

The fourth, outside "concentric circle" is subject to most debates as it compares the national taxation benchmarks with those in other countries or those that would be reflective of externalities and the social cost of energy—for example, a normative carbon tax. International organizations such as the IEA and the IMF have come up with certain regional and global benchmarks, in particular, for fossil fuel consumer taxes, but these have not been included in any of the commonly quoted global or national estimates. The OECD has also discussed these issues in its flagship publication *Taxing Energy Use* (OECD, 2015b). However, when it comes to externalities, determining the financial values becomes much more challenging. In particular, the OECD has largely excluded externalities from its subsidy quantification work, except for the non-imposition of a carbon tax at the legislated rates in those countries that tax carbon. In contrast, the IMF argues that failure of governments to internalize externalities confers a subsidy, and it is the inclusion of this fourth nesting doll that explains why the IMF consumer post-tax subsidy estimate of USD 5.3 trillion in 2015 is so much higher than the IEA's estimate of USD 325 billion and the IMF's own estimate of pre-tax subsidies at USD 333 billion for the same year (IEA, 2016; IMF, 2015). It should also be noted that externality estimates are far less certain and much more sensitive to assumptions than financial subsidy estimates.

The reviews accomplished within the G20 (China, United States) and APEC (Peru, New Zealand and the Philippines) have focused on the inner three nesting dolls: direct budgetary transfers and liabilities, government revenue foregone and induced transfers. However, some countries, at least in their self-reports, may find it useful to discuss externalities and comparisons with international tax benchmarks.



Consumer Energy Subsidies	Producer Energy Subsidies
Energy exempt from social cost of externalities (non-internalized externalities)	
Energy sold below regional or international tax levels	Government tax and regulation levels below regional or international levels.
Price controls, including cross-subsidies: energy sold below the cost of production, imports and international benchmark price to certain categories of consumers	Income or price support (above market rate prices for producers such as feed-in tarrifs).
Energy fully or partially exempt from VAT, GST and excise tax on consumption	Government revenue forgone (reduced and exempt tax rates).
	Government provided or purchased goods and services (above or below market rates).
Direct transfers or potential direct transfers of funds to consumers.	Direct transfers or potential direct transfers of funds to producers.

Figure 2. The nesting doll of energy subsidy definitions

Source: IISD-GSI based on Gerasimchuk, Bridle, Beaton, & Charles, 2012; Gerasimchuk, 2014; IMF, 2015; OECD, 2013.

2.1.3 Typologies of FFS

There exist different typologies of FFS. The most commonly used approach splits subsidies into those benefitting consumers and those benefitting producers of energy. Another straightforward approach breaks down subsidies by fuel. For example, the IEA provides subsidy estimates for oil, natural gas, coal and electricity produced by burning fossil fuels, though it does not have such estimates for heat produced by burning fossil fuels.

Other classifications build off the type of the subsidy mechanism, which is mostly symmetrical to the categories in the WTO ASCM definition and the discussion of "nesting dolls" of the subsidy definition above. The OECD and GSI typologies of FFSs further break down the high-level categories into more specific groups of FFSs. Such breakdowns are helpful for discussing the commonalities and differences between individual subsidies subject to review. For more detail on the OECD and GSI typologies of FFSs see Annex 6.

2.2 Scope and Terms of Reference for an FFS Review

Sum and Substance

- The scope of the review is determined by the volunteering economy typically represented by a lead ministry or coordination agency, in consultation with stakeholders in the country and, in the case of peer reviews, international partners.
- At least some FFS reviews go a step beyond subsidy listings and focus on reform efforts.
- Many economies extend the scope of their FFS review to discuss the inefficiencies as well as sustainability and pollution issues in their energy sectors more broadly.

The scope of the review is determined by the volunteering economy typically represented by a lead ministry or coordination agency. Depending on the country, for FFS reviews this is typically the ministry of finance, economy, planning, energy or similar. For the reviews with the broader scope of environmentally harmful subsidies, a lead ministry is typically the Ministry of Environment.

The coordination agency consults with other relevant government bodies, especially the ministries of transport, agriculture, social protection and regional development, energy enterprises, research institutes and other stakeholders. In the case of peer reviews, the volunteering economy can also request support from international partners—for instance, the Energy Working Group of APEC, the FFS team at the OECD, or other governments.

Many countries view FFS reviews as an opportunity to discuss barriers to improving the efficiency and sustainability of their energy sectors with particular focus on air pollution and carbon footprint. Therefore the scope of FFS reviews tends to be broader than just a technical discussion on measures of government support to fossil fuel production and consumption. Rather, the discussion of FFS with the use of templates featured in Annex 4 is just the absolute minimum building block of an FFS review.

At least some FFS reviews go a step beyond of the baseline FFS identification and measurement exercises by focusing on reform. The APEC process explicitly uses the term Voluntary Peer Review of Inefficient Fossil Fuel Subsidy Reforms (VPR/IFFSR). The G20 documents refer to "voluntary peer reviews of inefficient fossil fuel subsidies," but the titles of the actual peer review documents are China's and the United States' "efforts to phase out and rationalise" inefficient FFS (G20, 2016c).

The broad scope of FFS reviews has, on occasion, been extended to different sectors such as transport and energy-intensive industries. There are also interlinkages with the even broader scopes of subsidy reporting within the definition of EHSs linked to the UN Convention on Biological Diversity (this approach is used in the EU) and under the WTO economy-wide notifications (OECD, 2017).

Another dimension of the scope is whether FFS reviews cover subnational and local subsidies and not just national ones. In federal economies such as Australia, Canada, Germany, India and the United States, FFSs provided at the subnational level can be significant, and sometimes exceding those provided by the central government.

Meanwhile, the sprawling of scope can also be a challenge to reviews. Most countries, therefore, tend to refocus the scope by limiting the number of subsidies put forward for review. A typical starting point is a reference to the OECD inventory (OECD, n.d.a).

However, OECD inventories exist only for around 40 countries, and are not available, for instance, for many APEC economies. Countries may also add other support measures to the OECD list, or drop some subsidies. In the existing reviews discussed in Secitions 4 and 5, there is a tendency to concentrate on subsidies that governments have already decided to rationalize or those subject to ongoing policy debates over efficiency.

The scope of FFS reviews, especially peer reviews, usually includes possible recommendations and best practices of inefficient FFSs. The APEC template (see Annex 4) and China's FFS peer review under the G20 (see Box 8 in Seciton 5) also require an evaluation of FFS and indication of their reform plans and timeline. Recommendations for reform should also have an important focus on protecting the vulnerable groups from the possible negative impacts of FFS phase-out.

2.3 Measuring FFS

Sum and Substance

- FFS measurement forms an integral part of their reviews. An FFS review team typically derives its quantitative estimates of the economy's support measures to fossil fuel production and consumption via three combinable options: a) available FFS estimates, b) direct requests of information from relevant government agencies; c) an independent analysis.
- The most straightforward FFS measurement has always been governments' own estimates of direct budgetary transfers and tax expenditures that also underlie the OECD's inventory as well as the analysis by GSI and several other NGOs. Complimentarily to this approach, IEA uses price-gap assumptions to estimate price-related subsidies.
- In practice, not all FFSs that are identified are quantified due to a lack of available data, time and financial resources for the review teams. Failure to quantify certain FFSs need not preclude their inclusion in FFS reviews because qualitative evaluation can be useful as well.

FFS reviews aim at understanding the order or magnitude of different support measures and, therefore, the degree to which they put a strain on government budgets; distort energy markets; and lead to inefficiencies, waste and adverse impacts on the environment. Thus measurement forms an integral part of their reviews. FFS measurement is also required for countries' reporting on the SDG indicator 12.C.1 and is expected to start from 2020 (see Annex 3).

An FFS review team typically derives its estimates of the economy's support measures to fossil fuel production and consumption from three combinable options: a) available FFS estimates, b) direct requests of information from relevant government agencies and c) an independent analysis.

The most straightforward FFS measurement has always been governments' own estimates of direct budgetary transfers and tax expenditures. These are exactly the type of sources informing the OECD inventory (Text Box 4) as well as the analysis by GSI and several other NGOs.

In the case where quantitative estimates are not available from government sources, reviewers will need to make assumptions and calculate their own quantitative estimates. To this end, FFS reviews can use different methods of FFS quantification that are combinable. A thorough overview of different methods is available in *Subsidy Estimation: A Survey of Current Practice* (Jones & Steenblik, 2010). One such method, suitable for the measurement of price-related subsidies, is the so-called price-gap underlying the IEA estimates of FFS (see Text Box 5).

Different FFS estimation methods need not be viewed as alternatives. Rather, they complement each other and the use of multiple methods also helps to triangulate the obtained estimates. There are two aspects to keep in mind:

- For aggregation of several subsidies, there is a risk of double-counting some measures of support. For instance, many countries require energy-marketing companies to supply electricity or fuels to vulnerable groups of consumers at below-market rates and incur losses. This policy confers a subsidy to consumers. But governments may also compensate marketing companies for the incurred losses through direct budgetary transfers, which can be viewed as a subsidy to producers. An FFS inventory will reveal both measures and enable an informed discussion of their efficiency. However, the monetary value of such support should only be counted once.
- Not all FFSs that are identified are quantified due to a lack of available data or time and financial resources for the review teams. Failure to quantify certain FFSs need not preclude their inclusion into FFS reviews because qualitative evaluation can be useful as well. FFS reviews typically consider a mixture of subsidies that have been assigned a monetary value and those that remain identified, but not quantified.

Due to the difference in scopes of their analysis (different countries and types of subsidies) and reliance on different methods, there is a discrepancy between the most commonly cited FFS estimates by the OECD, IEA, OECD and the reports produced by NGOs, such as Bast et al. (2015). Annex 5 elaborates on the most commonly used estimates of FFS and their underlying approaches.

Box 4. FFS measurement: OECD inventory

OECD's first inventory of FFSs in its member countries was first published in 2011. Since then, OECD has been constantly updating, improving and expanding the inventory, which now covers over 40 countries, including six major economies outside of the OECD: Brazil, China, India, Indonesia, Russia and South Africa. The OECD estimates that government support to fossil fuel consumption and production in the OECD countries and six key emerging economies amounted to USD 160 billion to 200 billion per year (OECD, 2015c; OECD, n.d.a). The further updated and expanded version of the OECD inventory is expected to be released in November 2017.

In preparation of the OECD inventory, the first step is always filling in a template with the main subsidy characteristics (see Annex 4). In this exercise, the OECD always limits the sources of estimates to the numbers available from official sources only. Official estimates of FFS commonly exist in internal documents and are often reported in publicly available documents pertaining to the process of budget drafting and execution, 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), WTO subsidy notifications, etc.

However, in many cases, government agencies do not publicly report subsidy values. In this case, quantification will rely on several methods mostly derived from the Producer Support Estimate and Consumer Support Estimate (PSE-CSE) framework that OECD initially developed for the agricultural sector. In each particular case, guidance can be taken from the manuals and publications dedicated to this work (namely OECD, 2010, 2013; Jones & Steenblik, 2010).

Box 5. Measuring price-related FFSs: IEA

Price-gap is the default method for energy subsidy quantification for both the IEA FFS database and the IMF's pre-tax estimates. This measurement estimates the gap between domestic energy prices and reference prices for unsubsidized energy. If the domestic price is lower, a consumption subsidy is deemed to exist. For net importers of fossil fuels, the IEA and IMF base reference prices of fossil fuels on the import parity price: the price of a product at the nearest international hub, adjusted for quality differences if necessary, plus the cost of freight and insurance to the net importer, plus the cost of internal distribution and marketing and any VAT. Other taxes, such as excise duties, are not included in the reference price. For net exporters of fossil fuels, reference prices are based on the export parity price: the price of a product at the nearest international hub, adjusted for quality differences if necessary, minus the cost of freight and insurance back to the net exporter, plus the cost of internal distribution and marketing and any VAT. For energy exporters, the quantified subsidy represents the opportunity cost of selling fuels at below-market prices domestically, rather than a measure of direct expenditure.

The calculation of reference prices for electricity is based on the assumed cost of production, transmission and distribution, but no other costs, such as allowances for building new capacity. To avoid over-estimation, the IEA caps electricity reference prices at the levelized cost of a combined-cycle gas turbine plant (IEA, n.d.).

Using the price-gap method is useful in order to enable comparisons among countries where the main form of support is through administrative pricing or export restrictions. However, assumptions underlying reference prices are often disputed (Koplow, 2009). For example, some governments of net energy exporting countries assert that the opportunity cost of exporting fuels to the world market cannot be used as a reference price, and if domestic prices cover production costs, there is no subsidy. For net importers of fossil fuels, VAT rates, costs of freight, insurance, distribution and marketing in the reference price assumptions can all be challenged. Cost-recovery assumptions for electricity can also be subject to debate. Further, a price-gap analysis will not reveal producer subsidies that arise when energy producers are inefficient and make losses at benchmark prices, nor cross-subsidies (see Annex 7) and consumption subsidies provided through, for example, fuel vouchers or other payments made directly to low-income households (Koplow, 2009). Similarly, if applied at the level of the entire market rather than individual groups of consumers, the price-gap approach can fail to capture the value of possible cross-subsidies among, for example, industry and households.

Using the price-gap approach, the IEA provides a global estimate of subsidies to fossil fuels at USD 325 billion in 2015, which is limited only to consumer subsidies, and only to developing and emerging countries (IEA, 2016, p. 97). For comparison, IEA estimates worldwide subsidies to renewables at USD 150 billion in the same year (IEA, 2016, p. 97).

Sources: IEA, n.d.; IMF, 2015; Koplow, 2009

2.4 Evaluating FFSs

Sum and Substance

- Identifying which specific FFSs are "inefficient" and "encourage wasteful consumption" requires understanding the circumstances of each country.
- Key to "inefficiency" evaluation is the assessment against the following lines: a) a broad analysis of an FFS's fiscal, administrative, social and environmental costs; b) whether an FFS delivers against its stated policy objectives; c) whether an FFS can be replaced with more efficient policies that are more targeted, reduce the fiscal and administrative costs, and are less harmful to the environment, d) whether an FFS is potentially obsolete.
- "Wasteful consumption" refers to the use of energy that would not occur had there been no FFS. Research estimates that removing FFSs globally by 2050 would generate around 10 per cent carbon dioxide emission savings relative to the baseline. To identify cases of "wasteful consumption," an FFS review needs to analyze: a) possible unintended beneficiaries of FFS and b) possible unintended and suboptimal uses of energy resources.
- FFS reviews should specifically analyze the impact of FFSs on the poorest and vulnerable, and their possible reform. This can extend to vulnerable or sensitive parts of the economy.

Identifying which specific FFSs are "inefficient" and "encourage wasteful consumption" requires understanding the circumstances of each country, and the impact of the different subsidies in use (IEA, OECD, Organization of Petroleum Exporting Companies & World Bank, 2010).

FFS evaluation is time-sensitive and should be carried out periodically. Results of such assessments are typically valid for a short term. Over the medium or long term, the economy's circumstances typically change—for example, energy consumption can increase significantly, making untargeted subsidies very costly even if at the time of the introduction there were not a significant fiscal burden. Countries' climate policies and commitments provide another time-sensitive framework for FFS reviews.

2.4.1 "Inefficiency"

The notion of "efficiency" or "inefficiency" is a continuum: any subsidy or policy can be on an axis between 0% efficient and 100% efficient. Therefore the practical criteria for "efficiency" are:

- **Cost-benefit analysis of an FFS**. Such analysis should consider whether the fiscal, administrative, social and environmental costs of an FFS outweigh its purported benefits.
- **Whether an FFS meets stated policy objectives.** In particular, many subsidies are provided to protect the vulnerable groups, yet a large share of them is captured by the middle and upper classes of society (Coady et al., 2010).
- **Evaluation of whether there exist alternative policies that can meet the same stated policy objectives with more efficiency:** that is: a) in a more targeted way, b) with smaller fiscal and administrative costs and c) with less damage to the environment.
- **Potential obsoleteness of an FFS.** Some FFSs on the OECD's inventory have been in place for decades, and the economy's circumstances have changed dramatically since the moment when the subsidy was introduced.

The APEC guidance on its members' FFS peer reviews, rather than focusing on definitions of "inefficiency," suggests the following principles (see Annex 8 for more detail):

Each economy's progress on rationalizing and phasing out inefficient fossil fuel subsidies will be dependent on the economy's circumstances; the process will be economy-led and economy-owned. However, to increase the effectiveness of reporting across APEC economies, the voluntary reports are intended to consider the degree to which economies have followed these principles regarding fossil fuel subsidy reform, taking into account their national circumstances:

- **Reduce wasteful fossil fuel consumption**—To heighten energy security capability and reduce greenhouse gas emissions.
- **Allocate resources efficiently**—To improve market efficiency and allow scarce resources to be channelled to uses that are more productive in the long term.
- **Target help to those in need of essential energy services**—To support the removal of inefficient fossil fuel subsidies, targeted policies should be developed where appropriate to protect the poorest populations.
- **Support sustainable economic growth**—Removing subsidies should be done in a way that does not hamper long-term sustainable growth and development and is attentive to macroeconomic impacts.

2.4.2 "Wasteful Consumption"

"Wasteful consumption" suggests consumption that is untargeted, unnecessary or excessive. By reducing the cost of energy to end-consumers, both production and consumption subsidies lead to more combustion of fossil fuels and thus more emissions. Research estimates that the removal of global fossil fuel subsidies to fossil fuel consumption would lead to a global decrease in carbon emissions of between 6.4 and 8.2 per cent by 2050 (Schwanitz et al., 2014; Burniaux & Chateau, 2014). In addition, a removal of global subsidies to fossil fuel production would save 37 Gt of carbon dioxide emissions over the same timeline (Gerasimchuk et al., 2017). Thus, the elimination of all subsidies to fossil fuel production and consumption globally will reduce emissions by roughly 10 per cent.

To identify cases of "wasteful consumption," an FFS review needs to analyze: a) possible unintended beneficiaries of FFS (e.g. middle- and upper-class households instead of low-income users) and b) possible unintended and suboptimal uses of energy, typically resulting from market distortions and negative environmental impacts (e.g., subsidization of coal for electricity generation can act as a barrier to a switch to renewables and a source of additional greenhouse gas emissions).

Targeting and especially capping an FFS based on a fixed amount of energy consumed can have a much smaller effect on consumption volumes than an open-ended (or "blanket") subsidy. This is the case of block tariffs for electricity that provide subsidized electricity to households than consume less than 50 kWh per month (or similar). Another example is conditional and unconditional targeted cash transfers to low-income households, sometimes stimulating a switch to cleaner fuels, for instance from kerosene to LPG. In Peru, an APEC peer review found a similar scheme of conditional vouchers for purchasing LPG to be "efficient" (see Box 9 on Peru in Section 5).

2.4.3 "Providing Targeted Support for the Poorest"

Any FFS review needs to pay special attention to the role of FFS in protecting vulnerable groups. For subsidies that were put in place with a specific objective of protecting eligible beneficiaries, this can be addressed by policy evaluation against its stated policy objectives (see above). For FFS not targeted at vulnerable groups—for instance, fossil fuel production subsidies—the analysis should take into account indirect impacts such as those through price effects. Ideally, an FFS review needs to identify and address social impacts at least at a high level, and government agencies of social protection should form an integral part of the discussions.

In most cases, since subsidies are an inefficient economic and social assistance policy, it should be possible to establish mitigation measures that are more effective and cost less. The GSI's *Guidebook to Fossil Fuel Reform for Policy Makers in South East Asia* (Beaton et al., 2013) elaborates more on this topic.

Importantly, savings from FFS phase-out can be redirected to support social safety nets. For example, in 2014, Indonesia abandoned its gasoline subsidies, which accounted for roughly 10 per cent of the government's total expenditure. As a result, Indonesia saved IDR 211 trillion (USD 15.6 billion). These savings in 2015 were reallocated to major investments in social welfare and infrastructure through increased budgets for ministries (IDR 148.2 trillion), state-owned enterprises (IDR 63.1 trillion) and transfers for regions and villages (IDR 34.7 trillion) (Pradiptyo, et al., 2016).

2.5 Next Steps on FFSs

Sum and Substance

- If an FFS review identifies inefficiencies and wasteful energy consumption, it can warrant consideration of: a) redesigning such policies (including improving the targeting of benefits to intended beneficiaries); b) replacing the policy with an alternative; or c) phasing out the policy.
- FFS reviews can be used to build support for reform through intragovernmental cooperation to ensure policy coherence and through consultations with stakeholders outside the government. To this end, translation of FFS reviews in the national language is essential.

FFS reviews are conducted to support the needs of each volunteering economy and are often part of its preparation of FFS reform. Depending on the needs, reviews draw on relevant international best practices and provide recommendations on the reform of reviewed FFS.

If FFS review identifies inefficiencies and wasteful energy consumption resulting from the reviewed FFS, it can warrant consideration of: a) redesigning such policies (including improving the targeting of benefits to intended beneficiaries); b) replacing the policy with an alternative; or c) phasing out the policy.

2.5.1 "Rationalize and Phase Out"

In their guidelines about dealing with inefficient FFSs, both G20 and APEC commitments use the words "rationalize and phase out, over the medium term." "Rationalize" can be interpreted as meaning that a subsidy could be better targeted or otherwise better designed. "Phase-out" implies that best practice would see subsidies gradually eliminated.

2.5.2 "Medium Term"

The medium term is typically considered to be 5–15 years. The G20 and APEC commitments were made in 2009, which raises the question about the so-called "date certain" for FFS rationalization. At their summit in Ise-Shima in 2016, G7 leaders specified this "date certain" by stating: "we remain committed to the elimination of inefficient fossil fuel subsidies and encourage all countries to do so by 2025"—a commitment reconfirmed in 2017 (G7, 2016; G7 Energy Ministerial, 2017; G7 Environmental Ministerial, 2017).

2.5.3 Building Support for Reform

FFS reviews can be used to build support for reform through intragovernmental cooperation to ensure policy coherence and through consultations with stakeholders outside the government. In this respect, FFS reviews can be best used if made public and known both within different agencies and wider audiences. To this end, translation of international FFS peer reviews in the national language are essential.

Over 2014–2016, over 50 countries—from Saudi Arabia to Canada, India the Ukraine—increased or removed government controls on prices of fossil fuels, directly or partially removing subsidies (Merrill et al., 2017). These reforms have created fiscal space for repayment of debt and funding development. International experience contributes to building the case for FFS reform domestically and holds potential for cross-pollination through FFS peer reviews.

Chapter 3.
How It Works in Practice: FFS Self-Reports

Sum and Substance

- FFS review is an opportunity to increase transparency and improve policy coherence and coordination across various government agencies.
- One of the agencies takes the lead and acts as the FFS review coordinator.
- Both Finland and Sweden compiled inventories of FFS and referred to the relevant EU and OECD guidance.
- Both Finland and Sweden have benefited from the broader scope of reviews. Both countries examined FFS within the context of potential EHSs under the EU commitment to phase these out by 2020. The self-reviews provided the information on which governments can make decisions as to the reform of subsidies.

This chapter highlights examples of existing FFS self-reports and seeks to avoid duplication with the preceding part of the guidebook; however, all of the background and analysis of Chapters 1 and 2 holds true for FFS self-reports. Self-reports are typically the first stage in FFS reviews, and therefore this chapter serves as a springboard for their subsequent discussion.

FFSs are a crosscutting issue and typically span across the competence of various government agencies that do not necessarily have an existing dialogue on FFS. Therefore, FFS review is an opportunity to increase transparency and improve policy coherence. To this end, FFS review requires participation of ministries and other government agencies responsible for budget drafting and fiscal policies (usually ministries of finance and offices of auditor general), energy policies (ministries of energy or industry, depending on the country), macroeconomic planning and trade (ministries of economy, planning, trade, customs service), protection of vulnerable groups (ministries of agriculture, social protection and regional development), environmental and climate policy (usually ministries of environment and natural resources), and other bodies. For instance, offices of the president or prime minister, or relevant parliamentary committees can also be involved in the review.

One of these agencies needs to take the lead and act as the FFS review coordinator. The coordinator's responsibility is to determine the scope of the FFS review, prepare briefing materials, liaise with other government agencies and stakeholders, and oversee the review's timeline, publication and communication strategy. To this end, the coordinator may either entirely rely on its own staff, or supplement their efforts by soliciting the support of a technical consultant. Meanwhile, it is essential that staff in charge of the review have different competencies, including those from economics, energy, law as well as sectoral knowledge.

Boxes 6 and 7 outline the experiences of self-reviews conducted by Finland and Sweden, two members of the Friends of Fossil Fuel Subsidy Reform group of countries. Both Finland and Sweden have benefited from the broader scope of reviews beyond specifically FFSs. Both countries examined FFSs within the context of potential EHSs under the European Union commitment to phase these out by 2020. For both countries, these subsidy reviews started as a process of periodic or ongoing monitoring rather than a one-off exercise.

Box 6. Finland's self-reviews of subsidies in 2013 and 2015

Finland conducted FFS reviews under two exercises. The 2013 review was linked to the Programme of Prime Minister Jyrki Katainen's Government (Ministry of the Environment, Finland, 2013; Prime Minister's Office, Finland, 2011).

The second was carried out in 2015 with a focus on biodiversity and the Aichi targets under the Convention on Biological Diversity (Ministry of the Environment, Finland, 2015). In both exercises, FFSs were examined under the sectoral approach that the reviews took with respect to such sectors as transport, energy and agriculture.

All relevant ministries and government agencies were engaged in the 2013 and 2015 reviews, including finance, environment, economy and employment, agriculture and forestry, and transport. Business associations and NGOs were also involved in the 2015 review. The scope of the 2015 review was to include all support measures (around 400) to form an inventory (see Box 4) and then to narrow these down, with the review focusing on and analyzing 50.

Continued

Box 6. Finland's self-reviews of subsidies in 2013 and 2015 *(Continued)*

Information sources included tax reports and budgetary expenditures from ministries. The reviewers made use of methodologies such as the OECD assessment tool for screening subsidies (see Annex 6) and also on broader Finnish research as to the evaluation and effectiveness of government business support from the Vatt Institute for Economic Research (Rauhanen, Gronberg, Harju and Matikaa, 2015).

As in the case of Sweden (see Box 7), many subsidies that exist take the form of tax exemptions, because both Finland and Sweden have high regulatory and tax levels. Indeed an overall review of government support to businesses, which led to the 2015 review, estimated that 75 per cent of total support to businesses took the form of tax breaks.

In the 2013 review, Finland used a "traffic light system" to grade the impact of various subsidies. However, there was difficulty with this approach, for example between red and yellow labelling, and a more nuanced approach was needed. Therefore, for the 2015 review, Finland developed a "support cloud" approach to show gradations of impact and provide more nuance.

The reviews, in Finnish, enabled the government to quantify and explain the various support measures in place and across four to five years. Finland used a template similar to the ones listed in Annex 6 with in-depth questions that dealt with policy objectives, clear focus, impact, cost effectiveness, fit for purpose, administrative burden, time limit and trends reflecting assessments across a number of years to show trends.

Finland's experience found that government ministries/agencies are, in fact, best placed to compile subsidy data and prepare the first draft of the review, as they have better access to budget information and tax support measures. Such research cannot be outsourced easily, as the information is held within and understood by governments. However, the capacity and resources are needed within the government to be able to deliver the review. An estimate for resource implications is one full-time analyst working on the review for a year.

In terms of stakeholder consultations, Finland's experience favoured involving politicians, NGOs and interest groups later in the process, after the gathering of technical information. In 2015, external stakeholders were engaged in the Finnish review from the outset. However, this slowed the process down considerably, with many questions asked around the initial mandate and scope of the review.

Finland's review had a broad mandate, which was found to be helpful to assess subsidies against wider economic, social and environmental impacts. Based on the review experiences, Finland also developed Principles of Good Support (see Table 3) with the idea that each euro of public support should have the maximum value to society.

Source: IISD interview with Outi Honkatukia, Chief Negotiator for Climate Change, Ministry of the Environment Finland

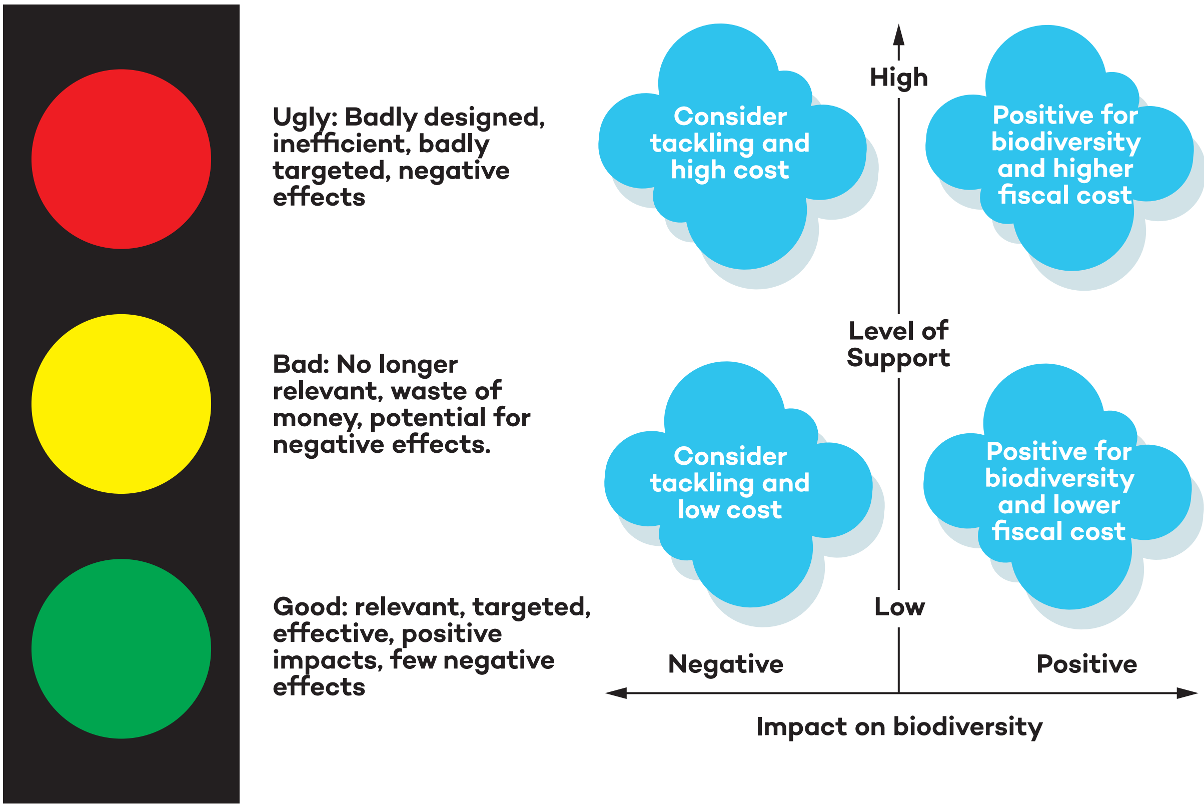


Figure 3. Finland's EHS evaluation migrated from a traffic light system in 2013 to a cloud system in 2015

Source: Ministry of Finance, Finland, 2016; Ministry of Environment, Finland, 2015

Table 2. Guiding questions for Finland's assessment of subsidies

Initial screening	Assessment Tool	Wider Assessment	Reform Opportunities
1. Does the subsidy exist? 2. Does it affect the environment? 3. Sectoral importance? 4. Economic and social importance? 5. Reform barriers? 6. Data availability?	1. Does support increase production? 2. Do other policies limit environmental impacts? 3. Are more environmentally friendly options available or being developed?	1. Policy objectives? 2. Are the set objectives met? 3. Is it cost effective? 4. What are its economic, social and other impacts? 5. What are the long-term impacts?	1. What can be done? 2. Costs and benefits of different options? 3. Who loses? Is it possible to compensate? 4. Factors affecting success

Source: Presentation from the Ministry of Finance, Finland (2016)

Table 3. **Finland's principles of good support**

Relevant objective: A clearly defined and commonly pursued objective such as business reform, business competitiveness, climatic and environmental objectives, mitigation of structural changes, regional development or security of supply.
Alignment: Support is directed at promoting a proliferation of positive externalities or a clearly identifiable market failure, as well as for actors and activities of particular importance to correct market foreclosure.
Effectiveness: The aid has been assessed on the basis of research data and does not override the company's own funding. The starting point of the effectiveness study is to find out whether the supported project/investment should be implemented without support. In this case, the aim is to compare the situation after support to an alternative situation without support. Simply statistical monitoring or interviews do not explain how explicit support has affected, for example, growth, productivity and employment.
Great benefit at small costs: Support can be impressive, but very expensive, so it's not cost-effective. Cost effectiveness should guide the choice between other policy instruments and direct/indirect support based on the most accurate estimate of the costs and benefits.
Appropriate: Support is based on a strong analysis as a necessary policy action instead of or in parallel with other policy measures. Prior to the introduction of direct payments, the potential for promoting the functioning of the market through indirect impacts on demand or other means of control, such as legislation, should be assessed. If direct payments are to be made, it should be assessed whether free and refundable forms of support are used.
Administrative burdens for beneficiaries are low: The range of grants and the search and follow-up processes related to individual aid should be simple, transparent and consistent in order to minimize administrative burden on applicants. At the same time, this reduces the administrative burden on subsidies.
Undesirable effects: The subsidy does not cause unreasonable negative effects on competition (e.g., barriers to entry, abuse of a dominant position and trade between member states) or other social costs.
Temporary: Grants and individual grants must be of a fixed duration and must include a clear exit plan. At the end of the deadline, the necessity and effectiveness of the aid should be assessed before a possible further decision. The necessity and effectiveness of long-term support programs and individual support decisions should be evaluated, for example, every 4–5 years.
Support automated: Where direct payments are regularly reviewed in the state budget and framework processes, most tax payments will continue automatically unless the tax code is changed. In addition, the amount of tax aid is usually increased when taxes are increased. In order to prevent the automatic growth of tax aid, tax increases should be made in connection with tax increases.

Source: Ministry of Employment and the Economy, Finland (2014)

Box 7. Sweden's ongoing review of potential EHSs

Sweden launched its third self-review of EHSs in 2017 (Swedish Environmental Protection Agency, 2017). This followed on from previous self-reviews, the first of which was published in 2005 and then updated in 2010/11 (Naturvårdsverket, 2013). All three reviews are published in Swedish.

The two main drivers for the 2017 review were linked to the EU's commitment to phase out EHSs by 2020 (European Commission, 2011, p. 9) and specific recommendations from the OECD Environmental Performance Review of Sweden (OECD and Ministry of the Environment Sweden, 2014). The OECD review included a recommendation to regularly review the environmental effects of subsidies such as tax breaks.

Sweden's 2017 EHS review covers a wide array of policy instruments deemed potentially harmful to the environment, above and beyond a single focus on FFSs. Reviews of four main sectors, namely transport, energy, agriculture and fisheries, identified various subsidies. Some of these subsidies are linked to market regulations in the EU's agricultural policy, or tax breaks within agriculture sector, and similar to those found in other OECD countries.

Similarly to Finland (see Box 6), Sweden has a high level of taxation and environmental protection, and therefore subsidies can manifest in the form of tax breaks and exemptions. Against this background, countries with lower overall taxation, for example, on gasoline, may subsequently display lower subsidies as a result of tax breaks.

Sweden found it helpful to undergo a comprehensive review of all policy instruments with the potential to be environmentally harmful rather than limiting the review to subsidies alone. Sweden classified potentially harmful subsidies and clarified the broader scale of the damage to society (i.e., externalities), as well as the pure fiscal cost to the government.

The 2017 review also covered both negative and positive environmental effects of policy instruments, as well as direct and indirect impacts.

Based on this analysis, the government can then take political decisions as to which subsidies to prioritize for phase-out. The broad focus of including all policy instruments and all potential EHSs provides a technical working document from the Environmental Protection Agency and from which the government can then base discussions as to the next steps.

The government assigned the mandate to undertake the self-review to the Swedish Environmental Protection Agency; however, many other agencies were involved in the review, including the Board of Agriculture, the Energy Agency, the Tax Agency, and the Agency for Economic and Regional Growth.

(Continued)

Box 7. Sweden's ongoing review of potential EHSs *(Continued)*

Sweden based their review on methodologies available from the OECD, definitions based on the WTO and from sources from within the Ministry of Finance such as an annual report on tax reductions. Many other sources were utilized to outline instruments that were not tax related, such as annual reports of other agencies and evaluations of policy instruments. Sweden allocated around a quarter of the report to discussing the basis for the review and definitions. Sweden compiled an EHS inventory (see Box 4) taking in a very wide range of measures. Each instrument or subsidy reviewed was presented in a template similar to those featured in Annex 6.

One benefit of the review was identifying and reviewing the purpose behind some of the support instruments that exist, and this often is not clear. Another benefit was associated with quantifying EHS. With greater transparency around these policies and their fiscal and wider costs, the government is better equipped to allocate its resources more efficiently from both fiscal and environmental perspectives.

Furthermore, Sweden's 2017 report provides information on the 10 subsidies that have been phased out, for example, the eliminated reduction on the carbon tax for industrial heating. In this sense, the review also provides a record of progress

Source: IISD's interview with Johanna Farelius, Head of Unit, Environmental Economics Unit, Swedish Environmental Protection Agency.

Chapter 4. How It Works in Practice: FFS Peer Reviews

Sum and Substance

- FFS peer reviews draw on countries' own self-reviews, which form the first stage.
- The first years of G20 and APEC FFS peer reviews saw the establishment of the following precedent: the economy hosting the G20 or APEC summit also volunteers for an FFS peer review.
- Within the G20, FFS peer reviews are undertaken in economy pairs (China–USA, Germany–Mexico, Indonesia–Italy), though the pairing may not be a requirement for future peer reviews. The OECD chairs and acts as a de facto secretariat of G20 peer reviews of FFS.
- Within APEC, FFS peer reviews are effected without economy pairing, with representatives other APEC governments participating in the panel. In 2013 APEC's Energy Working Group established a VPR/IFFSR Secretariat with a 5-year grant from the U.S. Agency for International Development (USAID).
- FFS peer reviews require substantial technical and financial resources. Within the G20, volunteering economies are expected to cover the cost of their peer reviews.
- Translation of FFS peer reviews into the national language extends the processes but is essential to success.

FFS peer reviews build off self-reports (see previous Chapter 3) and rely on the same commitments that were discussed in Chapters 1 and 2. To avoid repetition, this final chapter focuses on the developments specific to peer reviews.

One such development is the greater involvement of international cooperation bodies as well as government officials involved in their countries' participation in G20, APEC and other relevant forums such as the Friends. The first years of G20 and APEC FFS peer reviews saw the establishment of the following precedent: the economy hosting the G20 or APEC summit volunteers for FFS peer review.

As discussed in Chapter 1, G20 and APEC remain the two main international platforms for voluntary peer reviews of FFS. Table 4 summarizes the status of FFS peer review under both the G20 and APEC as of August 2017. Meanwhile, FFSs are organized slightly differently within the G20 and APEC, and the remainder of the chapter discusses these practices separately.

However, FFS peer reviews can also potentially be undertaken outside of these two platforms, though relying on the precedents that they have created.

Table 4. Guiding questions for Finland's assessment of subsidies

Context	Country	Report released	Main findings
APEC	Peru	2015	Three subsidy reviews focused on their efficiency, concluding that two of them had to be phased out and that the third one, the FISE (provides targeted LPG subsidies to the poor), was an efficient subsidy that should be expanded to other areas.
APEC	New Zealand	2015	The APEC panel reviewed eight measures that are considered to support the fossil fuel sector, but none of them was identified as inefficient FFSs that lead to wasteful consumption.
APEC	Philippines	2016	Out of the five policy measures identified, two were no longer in effect, two were not subsidies (but created market distortions) and one was a subsidy. A list of recommendations was submitted with the review.
APEC	Chinese Taipei	2017	Listed five subsidies of which three were related to energy use in agriculture. The peer review team concluded that all five subsidies have inefficiencies, though small in magnitude, and provided recommendations for the rationalization of these policies
APEC	Vietnam	Expected release in 2017	Not yet available
APEC	Brunei	Pending	Not yet available
G20	China	Sept 2016	Listed nine subsidies worth USD 14.5 billion and included a reform plan and timeline, identifying subsidies for phase-out in the near future.
G20	United States	Sept 2016	Identified 16 inefficient FFSs benefitting upstream activities and one subsidy for fossil fuels used in the residential sector, with a cost estimated at USD 8.2 billion per year.
G20	Mexico	Expected release in 2017	Not yet available
G20	Germany	Expected release in 2017	Not yet available
G20	Indonesia	Pending	Not yet available
G20	Italy	Pending	Not yet available

Sources: Steenblik, 2016; APEC, 2015a, 2015b, 2016b

4.1 G20 Peer Reviews of FFSs

Within the G20, FFS peer reviews are undertaken in economy pairs (China–USA, Germany–Mexico, Indonesia–Italy), but the selection of the peer-review panel is the call of the economy under review. As of August 2017, G20 peer-review panels included only representatives of other G20 governments and intergovernmental organizations such as the OECD and the IMF. OECD also acts as a de facto secretariat of the G20 FFS peer reviews. Within the G20, members are expected to fund their own reviews.

Figure 4 outlines the G20 peer-review process. Box 8 showcases China's experience of its FFS review under the G20 process.

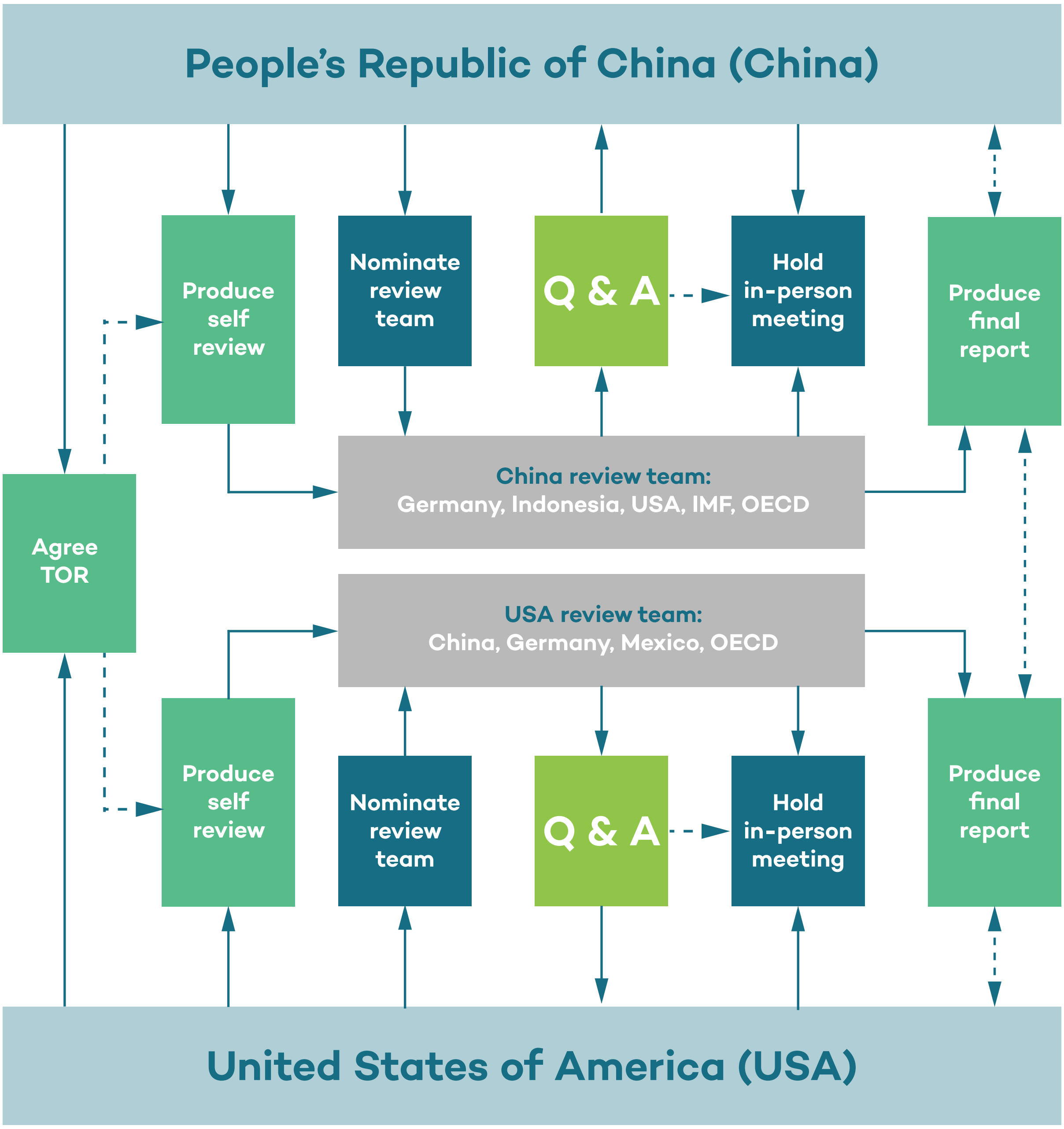


Figure 4. **China–USA peer-review process under the G20**

Source: Steenblik (2016)

Box 8. G20 Peer Review of FFS in China

In 2013, and following agreement at the highest level of government, China and the United States agreed to participate in a peer review of their efforts to phase out inefficient FFSs. This peer review was to take place under the auspices of the G20, with China and the United States being the first members of that forum to volunteer for a review process. At the same time, since both China and the United States are members of the APEC, the results of the review would also honour the requirements of both forums.

The motivations for Chinese participation in the FFS peer review were wide-ranging. On the one hand, there was the external prompt from the G20 and APEC commitments. On the other hand, the peer review fitted with Chinese ambitions for economic reform in the energy sector and across the economy, aiming at reducing pollution and transitioning to a low-carbon economy.

The overall process took about two years and involved extended engagement from the Chinese side. It followed several stages:

1. **Setting the terms of reference** between China and the United States, a stage that took about six months.
2. **Conducting a self-review as a first stage for the peer review.** This took place over 12 months with the aim of identifying subsidies to take forward into the following stage. Under this stage, the China team worked to identify a range of subsidies applying in the energy sector in the categories of direct budgetary support, tax-code provisions, government provision of good and services at below-market rates and requirements that non-government entities provide particular services to fossil fuel producers at below-market rates, or that require non-government entities to purchase above-market quantities of fossil fuels or related services.
3. **Sharing as part of the peer review.** At this stage, the United States and China, together with a panel of expert reviewers (including representatives from the IMF, OECD, the German and Indonesian governments) made joint visits to each country to carry out consultations (including site visits) and review the self-reports. The Chinese self- and peer reviews were translated into English, and the U.S. self- and peer reviews were translated into Chinese; all documents have been published in two languages.

In identifying and estimating subsidies for the self-report and peer-review report, the China team drew upon a range of sources including external and internal estimates of subsidies. *(Continued)*

Box 8. G20 Peer Review of FFS in China *(Continued)*

The review identified nine subsidies worth USD 14.5 billion and relating to both consumption and production of fossil fuels:

- A consumption-tax policy of "refund after payment" for refined oil produced by oil (gas) field enterprises for own use.
- A policy of exempting China National Petroleum Corporation (CNPC) from land use tax.
- A policy of land use tax exemption for China National Offshore Oil Corporation (CNOOC).
- A policy of consumption-tax exemption for oil consumed by refined oil manufacturing enterprises for own use.
- A policy of exempting thermal power stations from land use tax in cities and towns.
- A policy of VAT exemption for heating fees of heat supply enterprises for individual residents.
- A policy of exempting heat-supply enterprises from real-estate tax and urban land use tax.
- A series of subsidies derived from petroleum fuels price and tax reform.
- A preferential tax-rate VAT policy on coal gas and liquefied petroleum gas.

China's peer-review report is notable for including a reform plan and timeline, and identifying subsidies for phase-out in the near future. Some of the reviewed FFS are already being reformed.

The peer-review exercise improved understanding of FFS in China, providing a case for reform and supporting government action in this area as well as improving transparency. In addition, the peer review (rather than just a self-review) had specific benefits such as learning from peers and expert organizations such as the IMF and OECD, and having the opportunity to understand potential future policy directions and challenges. Moreover, the benefits are not just restricted to participants: other countries learned from the experience of measuring and evaluating subsidies and developing subsidy reform packages.

Sources: G20, 2016b, 2016c

4.2 APEC Peer Reviews of FFS

Within the APEC, peer reviews do not require pairing with another volunteering economy. The selection of the peer review panel is the call of the economy under review, but assisted by the APEC's Energy Working Group and the dedicated VPR/IFFSR Secretariat. APEC peer-review panels have included representatives of other APEC governments, intergovernmental organizations such as the IEA and the OECD, expert NGOs such as the GSI and academic experts. However, the experts on APEC VPR/IFFSR panels are expected to have a comprehensive understanding of FFS and their reforms. The APEC panels need to be diverse and representative of the APEC region (APEC Energy Working Group., n.d.b). Meanwhile, members of the panel are expected to volunteer their time since this is a voluntary peer review—a requirement that may be a barrier to recruiting the best talent on the panel.

APEC peer reviews of developing economies have required financial assistance from donors. In 2013–2017, such financial assistance was provided by USAID within the Technical Assistance To Advance Regional Integration (ATAARI) project. Under ATAARI, the APEC facilitated peer reviews through its Energy Working Group (EWG) and a dedicated VPR/IFFSR Secretariat. As of June 2017, it was unclear if this assistance will continue.

As demonstrated by the case studies on peer reviews within the APEC (see Text Boxes 9 and 10 on New Zealand and Peru) and the G20 (see Text Box 8 on China), FFS reviews and particularly peer reviews require both technical and financial support. ATAARI's total budget was USD 27 million under a 5-year contract to Nathan Associates Inc., though only a portion of it supported peer reviews and the VPR/IFFSR Secretariat (Office of USAID Inspector General, 2017). Some assumptions on the cost of FFS reviews can be made based on the experience of another peer-review processes. The African Peer Review Mechanism (APRM), which does not cover FFSs but covers many other policies, shows the scale of resources involved:

> The APRM national reviews are normally funded by participating governments, with assistance from a trust fund managed by UNDP to which bilateral and other donors can make voluntary contributions. The costs of implementing APRM reviews have varied: the Government of Kenya, for example, indicated that the total cost of the self-assessment was about USD 1 million. To that must be added the costs of the APRM Secretariat and of technical partners to prepare the country review reports, initially estimated at USD 15 million for the first three years. Countries that have signed up for review are required to contribute a minimum of USD 100,000; some have contributed more, while many others are in default (African Peer Review Mechanism, 2016).

Table 5 outlines the APEC peer-review process. Boxes 9 and 10 summarize the experiences of Peru and New Zealand in their FFS review within the APEC.

Table 5. Menu of combinable options for FFS reviews

Stage	Activity	Responsibility
1	Economy identifies funding for VPR/IFFSR.	Economy
2	Economy participates in an APEC technical workshop on identifying, evaluating and reforming inefficient fossil fuel subsidies if needed.	Economy
3	Economy identifies the Lead Ministry/Department for IFFSR and may also create an Inter-Ministerial Coordination Body to ensure appropriate coordination among government ministries and authorities.	Economy
4	Economy volunteers for the peer review.	Economy
5	EWG endorses the economy volunteering for peer review.	EWG
6	IFFSR Secretariat provides the volunteering economy with a register of APEC-based technical consultants to support the economy in developing its IFFSR analyses for the pre-briefing information (if requested).	IFFSR Secretariat and Economy
7	Economy prepares for and submits to IFFSR Secretariat pre-briefing information.	Economy
8	IFFSR Secretariat and economy representatives plan the peer review using VPR/IFFSR guidelines.	Economy and IFFSR Secretariat
9	Peer review team proposed in consultation with the APEC economy volunteering to be reviewed.	Economy and IFFSR Secretariat with assistance from the EWG Secretariat
10	Peer review team confirmed.	Economy and IFFSR Secretariat
11	Economy plans peer review visit in discussion with IFFSR Secretariat.	Economy and IFFSR Secretariat
12	• IFFSR Secretariat provides briefing information and peer review visit agenda to review team. • IFFSR Secretariat and review team may submit specific questions on the briefing information and its approach to IFFSR to the economy. • IFFSR Secretariat with review team may provide comments on the review visit agenda.	IFFSR Secretariat and Review Team

Source: APEC Energy Working Group., n.d.

Box 9. APEC Peer Review of FFS in Peru

Peru was the first country to undergo the APEC VPR/IFFSR. The review took place in 2014.

The process was led by the APEC EWG through the APEC Peer Review Panel (APRP) with technical and logistical support from the newly-established VPR/IFFSR Secretariat. The APRP was uniquely composed for Peru's peer review of FFSs and included five experts who came from Indonesia, Cambodia, New Zealand and the United States.

The scope and activities of the VPR were defined by the APEC EWG and Peru's Ministry of Economy and Finance, which was the lead government agency in the review. The ministry provided the necessary initial information. The APRP organized meetings with technical staff and senior officials from other relevant ministries, subsidy beneficiaries and industrial stakeholders. The APRP was also responsible for drawing conclusions in the final report. The total process took seven months, from the definition of the review scope until the completion of the report.

Peru selected three policies for evaluation by the APRP in terms of their "effectiveness." The "effectiveness" was defined according to the policies' success in achieving their stated objectives. The definition of effectiveness also considered the fiscal cost of the policies, the impact on greenhouse gas emissions and the implications for Peru's dependence on fossil fuels. None of the selected policies referred to fossil fuel production; all three were related to fossil fuel consumption only:

- The Preferential VAT Exemption, which was promulgated to promote economic development in Peru's Amazon Region.
- The Fuel Stabilization Fund (Fondo para la Estabilización de Precios de los Combustibles Derivados del Petróleo), established in 2004 to smooth international price volatility of gasoline, diesel, LPG and fuel oil.
- The Social Inclusion Fund (Fondo de Inclusión Social Energético [FISE]), a targeted LPG voucher scheme designed to protect Peru's most vulnerable groups and improve their access to cleaner fuels.

(Continued)

Box 9. APEC Peer Review of FFS in Peru *(Continued)*

The APRP concluded that the VAT exemption and the Fuel Stabilization Fund were not effective and should be removed for two reasons. First, these two policies increased wasteful and inefficient use of fossil fuels. Second, higher-income population groups tended to benefit more than the poor, who should be the targeted beneficiaries. The APRP agreed on 17 recommendations for the reform of these inefficient fossil fuel subsidies. The recommendations did not specify programs and investments, considering that Peru authorities would be best positioned to determine appropriate compensation packages.

However, the APRP found that the third policy, FISE, was effective, because it was meeting its goal of providing the targeted Peruvian households with access to cleaner fuels without substantively increasing their consumption. The APRP concluded that FISE was a good model for other similar government programs.

For Peru, the peer review was a useful document to influence public politics. It helped to define and review the inefficient policies. In the case of FISE, the peer review served to "strengthen what [FISE] could do and what it could not do," helping in the identification of the program's benefits for further reviews (IISD Interview with Jose la Rosa, Coordinator of the Peru VPR/IFFSR, 31 May 2017). The peer review also facilitated the dialogue in Peru's Congress on the measures that had been subject to discussion about their reform options in the past, for example, the preferential VAT in the Amazon. The final report also highlighted the importance of translating the final report into the national language.

Sources: IISD interview with Jose la Rosa, Coordinator of the Peru VPR/IFFSR, May 31, 2017; APEC, 2015

Box 10. APEC peer review of FFS in New Zealand

New Zealand was the second country to undertake the APEC VPR/IFFSR, starting their review in March 2015.

A new, bespoke APRP was convened for New Zealand with support from the APEC VPR/IFFSR Secretariat. The APRP consisted of seven members who came from China, the Philippines, Indonesia, Thailand, the United States and the OECD. The Government of New Zealand worked closely with the APEC EWG Lead Shepherd to provide technical and logistical support.

New Zealand's Ministry of Business, Innovation, and Employment (MBIE) was the lead government's agency in the review. MBIE produced a pre-briefing package (or "self-review") for the APRP and coordinated the peer-review meetings. The pre-briefing study was very detailed and described each of the reviewed policies using the recommended APEC template (see Annex 6), which specified information on the following issues: underlying legislation and regulation sources; policy's history; duration; beneficiaries; its estimated financial value; potential impacts; government agencies involved; stakeholders; evaluation of the policy's efficiency or inefficiency; expected policy changes and planned actions; options, benefits and time frames of the policy's potential reform. New Zealand identifies a complete pre-briefing report as one of the critical factors ensuring a success of the peer review by facilitating the work of the review panel and the consequent discussions. A thorough self-report saves the time of everyone involved in the peer review and standardizes its process: assisted by an exhaustive self-report, the APRP completed the peer review within around two months.

In coordination with the APEC EWG Lead Shepherd, New Zealand selected eight different policies for evaluation by the APRP in the areas of both consumption and production of fossil fuels. These were the same eight policies that the OECD identified as New Zealand's fossil fuel subsidies in its inventory. The focus of the APRP was on the efficiency of these policies. Efficiency was assessed against the following three criteria:

1. Whether the policy reduces production costs, encouraging an increase in fossil fuel production.
2. Whether such an increase in fossil fuel production led to lower global prices for fossil fuels.
3. Whether such lower global prices for fossil fuels resulted in an increase in domestic fossil fuel consumption in New Zealand.

(Continued)

Box 10. APEC peer review of FFS in New Zealand *(Continued)*

The eight policies reviewed were:

- **Non-resident offshore drilling rig and seismic ship tax exemption:** A temporary five-year exemption for non-resident offshore drilling rig and seismic ship operators from paying tax on their profits.
- **Tax deductions for petroleum-mining expenditures:** Tax measures for petroleum exploration and development expenditures, which are designed to reflect specific characteristics unique to the petroleum industry, while remaining broadly consistent with taxation of other sectors in the economy.
- **Temporary reduction in royalty rates:** A temporary reduction of the royalty rate for natural gas discoveries made between 2004 and the end of 2009 at the Maui gas field. This measure terminated at the end of its effective period.
- **R&D funding for the oil industry:** The funded program acquires seismic and technical data on New Zealand frontier basins, and makes these data available at no cost to all categories of users.
- **Financial restructuring of Solid Energy:** Following a drastic decline in world coal prices, the government facilitated the restructuring of Solid Energy New Zealand Limited, the state-owned enterprise in charge of the development and supplies of coal in New Zealand and internationally.
- **Indemnity for mining land reclamation:** An indemnity was provided to Solid Energy with respect to the company's costs of environmental remediation.
- **Motor spirit excise duty refund:** A refund of the motor spirit excise tax is allowed for eligible off-road vehicles, including off-road agricultural and commercial vehicles and marine transport.
- **Funding of international treaty obligations to hold oil stocks:** This annual funding serves as a principal mechanism for mitigating international oil supply disruptions.

The APRP concluded that none of the eight instruments reviewed was an "inefficient subsidy that encourages wasteful consumption." In the follow-up to the review, the New Zealand government identified the need for consistent monitoring and review of the policies examined by the APRP, with the objective of making changes when required. The APRP report serves as a reference document, for stakeholders and all those interested in the issues of FFS reform.

Sources: APEC, 2015a; IISD interview with New Zealand's Ministry of Foreign Affairs and Trade, June 2, 2017

Conclusions and Take Aways

Between 2014 and 2016, over 50 countries—from Saudi Arabia to Canada, India to Ukraine — increased or removed government controls on prices of fossil fuels, directly or partially removing subsidies (Merrill et al., 2017). These reforms have created fiscal space for repayment of debt and funding development.

This guidebook has summarized the commitments, frameworks and existing experiences of FFS reviews. The volunteering economies have built a body of FFS review precedents. The top tips from these precedents include:

- **Use the review and its elements to best serve the economy's needs** and focus it on the policies that are considered for reform. Many countries have also benefited from extending the scope of the review to broader energy policy issues, energy-intensive industries and transport, and EHSs. FFS reviews should specifically analyze the impact of FFSs, and their possible reform, on the poorest.
- **Own the review in terms of government staff involvement** and thorough preparation of briefing materials by the government. Such preparation requires technical expertise and multidisciplinary collaboration of government agencies and other stakeholders.
- **Staff the government team and the reviewers panel with experts** who have technical expertise and experience working on multidisciplinary issues (and, for peer reviews, in different countries). Selection of the panel review team leader is crucial for an effective review process.
- **Allow sufficient time for the review process—at least half a year.** For peer reviews that require translation into the national language, the process can take longer, but such translations are critical for the review's coordination and success.
- **Mobilize sufficient financial resources for covering the cost of the review**, which is particularly important for advancing FFS peer reviews in developing economies. Within the G20, countries are expected to cover the costs of their own reviews, but for developing countries within and outside of APEC, the success of FFS reviews depends on donor assistance.
- **Use the review to support reforms.** FFS reviews can be used to promote transparency and ambition for reform, building political awareness of the issues. They can also draw on best practices of reform in other sectors and countries and provide a baseline for future policies.

FFS reviews are essential for increasing transparency over policies that act against sustainable development. Within the G20 and APEC, FFS peer reviews also serve the leaders' commitment "to phase out, over the medium term, inefficient fossil fuel subsidies that encourage wasteful consumption" "while providing targeted support for the poorest." FFS reviews can also create a baseline for reporting on SDG indicator 12.1.C that countries are required to start from 2020.

FFS reviews encourage more interaction across government agencies on the evaluation and reform of policies supporting energy production and consumption. FFS reviews also serve as a basis for international exchange of FFS reform experience. However, all these benefits can be reaped only if governments invest in FFS reviews and use them to support reforms rather than undertaking them merely as a pro-forma exercise.

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Annex 1. Examples of Peer Review Processes in International Forums

Less formal organizations with focus on mutual learning and "co-ordinated unilateralism"

More formal organizations with focus on accountability against "hard law" rules

Codification

Number of Participating Countries

20–50

> 100

APEC Individual Action Plans Peer review—**voluntary** for 21 member economies

APEC Peer review of Energy Efficiency—**voluntary** for 21 member economies

G20 Mutual Assessment Framework operationalized by the Financial Stability Board and its peer reviews—**mandatory** for 24 member jurisdictions

APEC peer review of FFS reform—voluntary for 21 member economies

G20 peer review of FFS — voluntary for 19 countries and the EU

African Peer Review Mechanism—**voluntary**: about 20 members of the African Union have been peer reviewed

Financial Action Task Force (FATF)—Mutual Evaluation Reports—**mandatory** for 24 member jurisdictions

IEA Energy Policy Reviews of 29 member countries—**mandatory**, every five years

OECD Economic Surveys: **mandatory** for 35 member states every 18 months; external countries can join on a **voluntary** basis

OECD Environmental Performance Reviews—**mandatory** for 35 member states (every 7–9 years) + external countries on a **voluntary** basis. Around 70 reviews completed.

OECD Investment Policy Reviews—**voluntary** for 35 member states + external countries

OECD Reviews of Innovation Policy—**voluntary** for member and non-member countries

Global Forum on Transparency and Exchange of Information for Tax Purposes—**mandatory** peer reviews of 142 members

UNCTAD Investment Policy Review—**voluntary**, 42 members have been reviewed out of the total 194

UNCTAD Peer review of Competition Law and Policy—**voluntary**, reports for 23 countries have been made public

EU's open method of coordination applied in many policy areas—**mandatory** for 28 members states

Energy Charter Treaty's Energy Efficiency Reviews—**voluntary** for member states (54 members, but with different ratification status)

WTO Trade Policy Reviews—**mandatory** for 164 member countries, frequency depends on the share of global trade

IMF Surveillance—**mandatory** for 189 IMF members

UN Universal Periodic Review of human rights' situations—**mandatory** for all members of the UN, every four years

Source: Updated from Gerasimchuk (2013) based on the information from the organizations' respective websites.

Annex 2. International Commitments and Supportive Language on FFS Reform

<table>
<tr><th>Venue</th><th>Language</th><th>Progress</th></tr>
<tr><td>G20</td><td>
“We also reaffirm our commitment to rationalize and phase-out inefficient fossil fuel subsidies that encourage wasteful consumption over the medium term, recognizing the need to support the poor. We welcome G20 countries’ progress on their commitments and look forward to further progress in the future. Further, we encourage G20 countries to consider participating in the voluntary peer review process” (G20, 2016a, para 24).
At the G20 Summit in 2017, the G20 Hamburg Climate and Energy Action Plan for Growth (2017), annexed to the Leaders’ Declaration, elaborated on the commitment in the following way:
<blockquote>
F.2. Inefficient Fossil Fuel Subsidies that Encourage Wasteful Consumption
Inefficient fossil fuel subsidies (IFFS) that encourage wasteful consumption distort energy markets, impede investment in clean energy sources, place a strain on public budgets, and incentivise unsustainable infrastructure investments. Providing those in need with essential energy services, including the use of targeted cash transfers and other appropriate mechanisms, however, is still important. The US-Chinese peer review on IFFS was concluded, the German Mexican peer review is ongoing and Indonesia and Italy have announced the continuation of their respective voluntary processes.
G20 Actions
- We reaffirm our commitment to rationalise and phase out, over the medium-term, inefficient fossil fuel subsidies that encourage wasteful consumption, recognising the need to support the poor and we will endeavour to make further progress in moving forward this commitment.
- We encourage all G20 members that have not yet done so to initiate a peer review of inefficient fossil fuel subsidies that encourage wasteful consumption as soon as feasible.
- We take note the OECD/IEA progress report and its options on how to further develop and improve the G20 peer-review process based on recent experience and how to facilitate the phase out of inefficient fossil fuel subsidies that encourage wasteful consumption.
</blockquote>
</td><td>
G20 first introduced a similar statement in 2009.
Peer reviews available for the United States and China, and expected from Germany, Mexico, Italy and Indonesia.
</td></tr>
</table>

Venue	Language	Progress
APEC	"We reaffirm our aspirational goals to reduce aggregate energy intensity by 45 percent by 2035 and double renewable energy in the regional energy mix by 2030. We reaffirm our commitment to rationalize and phase out inefficient fossil fuel subsidies, welcome ongoing peer review and capacity building activities, and encourage further efforts to facilitate subsidy reform" (APEC, 2016a).	G20 first introduced a similar statement in 2009. Peer reviews available for Peru, Philippines and New Zealand, and expected from Vietnam, Chinese Taipei and Brunei.
G7	In 2016, G7 countries "committed to phasing out inefficient fossil fuel subsidies that encourage wasteful consumption, and encourage all countries to do so by 2025" (G7, 2016). In April 2017 at the level of Energy Ministers, this commitment was confirmed (G7 Energy Ministerial, 2017). In May 2017 G7 leaders did not mention this commitment in the final statement against the backdrop of disagreement and uncertainty over the climate policy of the new U.S. administration (G7 Leaders Declaration, 2016a). However, in June 2017, the commitment was again reaffirmed at the level of Environment Ministers (G7 Environment Ministerial, 2017) who stated the following: **7. Environmental Fiscal Reform and Sustainable Development** *50. We recognize and support effort by G7 and other countries interested in examining and removing incentives, particularly inefficient fossil fuel subsidies, not coherent with sustainability goals.* *51. We recognize the benefits of monitoring progress in the phasing out of incentives, including subsidies, not coherent with the sustainability goals, such as inefficient fossil fuel subsidies which encourage wasteful consumption and we support existing initiatives underway such as the G20 voluntary peer review process.* *52. We take note of the OECD work on these issues, and we recognize that OECD is considering further work for improving understanding of incentives, including subsidies.* *53. We support G7 and all countries interested in exploring approaches to better align fiscal systems with environmental goals. In particular we intend to contribute to the implementation of the commitment of our Heads of State and Government adopted in Ise-Shima in 2016 for the elimination of inefficient fossil fuel subsidies that encourage wasteful consumption by 2025."*	G7 (then G8) leaders first called "for a reduction of subsidies that artificially encourage carbon-intensive energy consumption" at their summit in 2009. The G7 has reiterated this commitment at every subsequent summit. In 2016 the G7 moved from the commitment to FFS reform with no "date certain" to the mention of 2025.

Venue	Language	Progress
Sustainable Development Goals	In 2015 the issue was included within the Sustainable Development Goals as part of Goal 12 on sustainable consumption and production patterns as a Means of Implementation, again to "rationalize inefficient fossil fuel subsidies that encourage wasteful consumption" (UNSTATS, 2016).	All countries to voluntarily report against the following indicator: "Amount of fossil-fuel subsidies per unit of GDP (production and consumption) and as a proportion of total national expenditure on fossil fuels" (UNSTATS, 2016).
OECD	In 2009, the ministers representing all OECD member countries signed a declaration to "encourage domestic policy reform, with the aim of avoiding or removing environmentally harmful policies that might thwart green growth, such as subsidies: to fossil fuel consumption or production that increase greenhouse gas emissions; that promote the unsustainable use of other scarce natural resources" (OECD, 2009).	
Parties to the Convention on Biological Diversity	In 2010 Parties to the Convention on Biological Diversity agreed on the Strategic Plan for Biodiversity Conservation that includes Aichi Targets. Target 3 states: "By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions" (Parties to the Convention on Biological Diversity, 2010).	
Financing for Development (FfD)	In 2015, the issue was included within the Addis Ababa Action Agenda, namely "to rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption" (United Nations, 2015).	
European Commission	In 2011 the European Commission determined the following: "Milestone: By 2020 environmentally harmful subsidies will be phased out, with due regard to the impact on people in need." Thus the scope is broader than just FFS and includes all environmentally harmful subsidies.	
European Parliament	Paragraph 13: "Calls on the Member States to ban fossil fuel subsidies that lower the cost of fossil fuel energy production, with a view to discouraging the exploitation and use of fossil fuels" (European Parliament, 2017).	As part of an integrated EU policy for the Arctic

Venue	Language	Progress
United Nations Framework Convention on Climate Change (UNFCCC)	The Paris Agreement is silent on the issue of fossil fuel subsidies directly but includes language on "Making finance flows consistent with a pathway towards low greenhouse gas emissions and climate resilient development" (Article 2) and "recognizes the important role of providing incentives for emission reduction activities, including tools such as domestic polices and carbon pricing' and 'Regular Technical Experts meetings focusing on specific policies, practices and actions" (pre-2020 action).	14 countries included the issue in their Nationally Determined Contributions. A Technical Expert Meeting covered the issue in 2016.
Friends of Fossil Fuel Subsidy Reform	At UNFCCC's COP 21 in Paris, John Key, the Prime Minister of New Zealand, presented an international communiqué endorsed by countries, including Canada, Chile, France, Germany, Italy, Malaysia, Mexico, New Zealand, Peru, the Philippines, the United Kingdom and the United States (from the G20 and APEC). The success of the communiqué has been driven by the Friends of Fossil Fuel Subsidy Reform, an informal group of nine non-G20 countries working to build political consensus on the importance of fossil fuel subsidy reform. (www.fffsr.org)	Over 40 countries and business associations representing over 90,000 businesses.
U.S.-Nordic Leaders' Summit Joint Statement	In May 2016 the leaders of Denmark, Finland, Iceland, Norway, Sweden and the United States stated that they "intend to promote access to affordable, reliable, sustainable and modern energy for all by encouraging the reduction of fossil fuel subsidies, promoting renewable energies and fuels, and enhancing energy efficiency" (U.S.-Nordic Leaders' Summit Joint Statement, 2016).	
Civil society organizations	In 2016 a statement delivered to G20 Finance Ministers ahead of the Energy Ministerial Meeting, more than 200 civil society organizations (CSOs) urged G20 governments to take action on fossil fuel subsidy reform. (Oil Change International, 2016)	200 civil society groups calling for action.
Insurers	Released a statement in 2017 calling for the G20 (Overseas Development Institute, 2017) "To catalyse real progress on phasing out fossil fuel subsidies, the German G20 communique should include clear language that: • Sets a clear timeline for the full and equitable phase-out by all G20 members of all fossil fuel subsidies by 2020, starting with the elimination of all subsidies for fossil fuel exploration and coal production. • Sets a clear timeline for the phase-out of domestic and international public finance for oil, gas and coal production by 2020. • Commits all G20 members to complete fossil fuel subsidy peer reviews by the end of 2018, building on the leadership of China and the United States in 2016."	Insurers investing more than USD 2.8 trillion in assets called on the G20 to phase fossil fuel subsidies out by 2020.

Venue	Language	Progress
Vulnerable 20 (V20)	"Noting the V20 commitment to working to establish pricing regimes, we will consider and share experiences on ways of effectively and fairly using such instruments. We strive to eliminate high-carbon investments and harmful subsidies, including through enhancing enabling environments both at the international and national levels so as to decarbonise the global economy rapidly" (Climate Vulnerable Forum, 2016). Signed at the V20 ministers' meeting in 2017, the communiqué states: "We call for market distorting **fossil fuel production subsidies** to be removed immediately and no later than 2020, and urge the G20 to set such a clear timeframe for fossil fuel subsidy elimination. Fossil fuel **consumption subsidies** need to be checked rigorously whether they provide an actual benefit to the poor, and subsequently should be replaced worldwide without harm to those relying on them for their basic energy needs" (V20, 2017).	40 countries under the Vulnerable 20 group called for the elimination of harmful subsidies.

Annex 3. FFSS and Sustainable Development Goals

Reporting on FFS is mandated by the UN Sustainable Development Goals (SDGs) under Goal 12, "Ensure sustainable consumption and production patterns" (Sustainable Development Goals, n.d.). One of SDG 12 targets is to:

> Rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities.

The corresponding indicator by which the FFS target will be measured is 12.C.1:

> Amount of fossil-fuel subsidies per unit of GDP (production and consumption) and as a proportion of total national expenditure on fossil fuels.

As of June 2017, this indicator is classified as 'Tier III' for the United Nations' statistical purposes, which implies a lack of an agreed methodology for measuring it.

UN Environment (UNEP) is a custodian of this indicator and is responsible for leading its methodological development. The proposed methodology should be approved by United Nations member states. Following the indicator's approval, UNEP will also be responsible for compiling and reporting data on the indicator for the Secretary General's progress report on the SDGs.

As a custodian, UNEP has established a technical expert group to support the development of a methodology to measure the SDG 12C indicator. The technical expert group includes delegates from selected government ministries, intergovernmental organizations such as OECD and IEA, UN Environment and the Global Subsidies Initiative. The technical expert group held the first consultation meeting in June 2017.

Additional countries and organizations will be further identified and engaged in the following consultation process on the methodological development as well as the data collection process including the World Bank, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), the Inter-America Development Bank among others.

Milestones and timeline for development of methodology:

- June 2017: First expert group consultation meeting (virtual meeting)
- September 2017: First draft of methodology
- October 2017: Second expert group consultation meeting
- October–November 2017: Review of draft methodology by select group of country experts and representatives from G20 and APEC Peer Review processes
- December 2017: Revised draft methodology circulated for review to Inter-Agency and Expert Group on the SDG Indicators (IAEG-SDG) and wider group of countries
- March 2018: Final methodology published
- April–September 2018: Pilot data collection in select countries/country case studies
- Later in 2018: First meeting of expanded expert group including partners for data collection
- 2020-2030: Data collection for all UN member countries

Annex 4. Templates for FFS Reporting: APEC, G20 & GSI

Existing FFS inventories and reviews rely on the use of templates for FFS identification, quantification and, if required, evaluation. The main elements of these templates concur, but depending on the scope and purposes of the review, some elements can slightly differ.

Table A1. APEC template for evaluation of inefficient fossil fuel subsidy reforms

Subsidy Title	
Description	
Weblink to Legislation/Regulation (page #)	
Subsidy Type	Producer / Consumer / General / Other
History:	
Recipients:	
Duration:	
Financial Value:	
Potential Impacts:	
Affected Government Ministries/ Departments:	
Affected Stakeholders:	
Inefficient? If so, why?:	
Options for Reform:	
Benefits of Reform:	
Expected Changes Regarding Value and Recipients:	
Planned Action (if any):	
Timeframe:	
Current Status:	

Table A2. Template used by China in its self-report under the G20 peer-review process

Policy name: An excise tax policy of "refund after payment" for refined oil produced by oil (gas) field enterprises for own use
Policy number: T-c-2
Overview of the subsidy program: For refined oil, which is purchased by oil (gas) field enterprises at home for the consumption of crude oil exploitation, the excise tax amount of refined oil temporarily paid upon actuality shall be rebated in full amount.
Description of policy effect: The policy allows "refund after payment" for refined oil produced by oil (gas) field enterprises for their own use, thus reducing the costs for crude oil exploitation and refined oil production. However, on the contrary, it has caused the wasteful use of crude oil and refined oil to a certain extent, so it belongs to inefficient fossil fuel subsidies.
Relevant ministries or government bodies involved in implementing the subsidy program: MOF, SAT
Eligible subsidy recipients: oil (gas) field enterprises
Duration of the subsidy program: since 2009
Annual cost estimates: CNY 2.7 billion
Policy basis: *The Notice of the Ministry of Finance and the State Administration of Taxation on the "Refund after Payment Policy of Excise Tax on Oil Produced by Oil (Gas) Field Enterprises for Their Own Use (Cai Shui [2011] No.7)*
Information sources: websites of MOF and SAT

Source: G20, 2016b

Table A3. GSI template for identification and quantification of fossil fuel subsidies

Subsidy Category	E.g. direct transfer of funds or tax expenditure
Stimulated Activity	E.g. exploration, extraction, transportation or consumption Also specifies subsidized fuel type
Subsidy Name	In English and national language
Jurisdiction	E.g. national (federal) or subnational
Legislation/Endorsing Organization	E.g. executive or legislative branches of authority
Policy Objective(s) of Subsidy	According to the underlying legislation or other government documents, but also relevant statements by policy makers
End Recipient(s) of Subsidy	E.g. companies or households
Time Period	When was the subsidy introduced? Was it terminated?
Background	E.g. what is the funding mechanism for the subsidy? How has the subsidy evolved over time?
Amount of Subsidy Conferred	In both national currency and USD
Information Sources	E.g. legislation, government reporting, national and international statistics, media reports

Source: GSI, n.d.

Annex 5. Comparison of OECD, IEA, IMF & GSI Approaches to Defining & Measuring FFS

	OECD[8]	IEA[9]	IMF[10]	GSI[11]
Headline Estimate:				
Estimate (USD billion; dates)	**160–200** (Annually during 2010–2014)	**325** (2015)	Pre-tax: **333** (2015) Post-tax: **5,300** (2015)	Country and sector specific
Reference	*Inventory of support measures for fossil fuels*	*World Energy Outlook 2016*	*How Large Are Global Energy Subsidies?*	Various: www.iisd.org/gsi
Coverage – countries:				
Countries included	34 OECD member countries + Brazil, China, India, Indonesia, Russia, South Africa[12]	40 countries, only emerging and developing	176 countries	Study dependent
Coverage – energy carriers:				
Petroleum products	✔	✔ [13]	✔ 176 countries[14]	✔
Coal	✔	✔	✔ 56 countries	✔
Natural gas	✔	✔	✔ 56 countries	✔
Electricity[15]	✘ (unless exclusively fossil-fuel generated)	✔ (non-fossil power subsidies excluded)	✔ 77 countries	✔
Coverage – subsidy and support incidence:				
Producer	✔ (including General Services Support Estimates, GSSE)	✘	✔ (including OECD Producer Support estimates, excluding GSSE)	✔ For specific countries
Consumer	✔	✔	✔	✔

8 OECD, 2013
9 IEA, 2013
10 IMF, 2013
11 GSI, 2010
12 Work is underway to expand coverage to major emerging economies.
13 Gasoline, diesel, kerosene, liquefied petroleum gas (LPG) and heavy fuel oil.
14 Gasoline, diesel and kerosene petroleum products.
15 Subsidies to renewable and nuclear energy are excluded in all cases. Estimates of subsidies to other energy types are made separately.

	OECD[8]	IEA[9]	IMF[10]	GSI[11]
What is included within the benchmark against which subsidies or support are estimated:				
Fossil fuel reference prices	International price	International prices (in-country average cost prices)	International price or cost-recovery price in the case of electricity	International price
Consumption-based taxes	✔ VAT (Value-added Tax) or GST (Goods and Service Tax), excise	✔ VAT or GST	✖ Pre-tax ✔ Post-tax: VAT actual and estimated (at regional rate)	✔ VAT or GST, excise
Non-internalized negative consumption externalities	✖(includes exemption of applied carbon taxes)	✖	✖ Pre-tax ✔ Post-tax: various[16]	✖ (non-application of environmental legislation)
Methods for defining and measuring subsidies and support				
Definition	Government, producer and consumer support mechanisms.	Government actions that result in prices paid by end users below the full cost of supply (based on international benchmarks)	Pre-tax: price paid by consumers below a benchmark price, producers above the benchmark. Post tax: pre-tax plus taxes below efficient levels	World Trade Organization Agreement on Subsidies and Countervailing Measures (WTO ASCM), Article 1.1
Method	Inventory approach. Two thirds of subsidy mechanisms currently identified are preferential tax treatment.	Price-gap (fuels); average cost plus transport & distribution, capped at cost of a combined-cycle gas turbine power plant (power).	(i) Price-gap approach for consumer subsidies and (ii) inventory approach for producer subsidies.	Inventory approach. WTO ASCM interpreted as around 30 energy subsidy types.
Data sources	Based on official government data, with inputs from experts.	IEA and secondary data sources, and an annual survey identifying countries that set energy prices below the full cost of supply.	Based on IMF, IEA, and OECD data. Wider sources for post-tax estimates.	Official data as far as possible. In-country research with experts.
Units of measurement (country data)	Reported by country currency, line by line for each subsidy item	Average subsidization rate (as a proportion of the full cost of supply) % USD/person % share of GDP USD by fuel type	% of government revenue % of GDP by country and region	Country total in USD and national currency

Source: updated from: GSI, 2014

16 Global warming (USD 34 per tonne of carbon dioxide in [2007] [US IAWG, 2013]), health impacts linked to local air pollution and road accidents, and other externalities linked to traffic congestion and road damage.

Annex 6. FFS Typologies: OECD and GSI

Table A4. OECD matrix of support measures with examples

Transfer Mechanism (how a transfer is created)	Statutory or Formal Incidence (to whom and what a transfer is first given)								
	Production							Direct consumption	
	Output returns	Enterprise Income	Cost of intermediate inputs	Costs of production factors					
				Labour	Land and natural resources	Capital	Knowledge	Unit cost of consumption	Household or enterprise income
Direct transfer of funds	Output bounty or deficiency payment	Operating grant	Input-price subsidy	Wage subsidy	Capital grant linked to acquisition of land	Capital grant linked to capital	Government R&D	Unit subsidy	Government-subsidized life-line electricity rate
Tax revenue foregone	Production tax credit	Reduced rate of income tax	Reduction in excise tax on input	Reduction in social charges (payroll taxes)	Property-tax reduction or exemption	Investment tax credit	Tax credit for private R&D	VAT or excise-tax concession on fuel	Tax deduction related to energy purchases that exceed given share of income
Other governm ent revenue foregone			Under-pricing of a government good or service		Under-pricing of access to government land or natural resources; Reduction in resource royalty or extraction tax		Government transfer of intellectual property right	Under-pricing of access to a natural resource harvested by final consumer	
Transfer of risk to governm ent	Government buffer stock	Third-party liability limit for producers	Provision of security (e.g., military protection of supply lines)	Assumption of occupational health and accident liabilities	Credit guarantee linked to acquisition of land	Credit guarantee linked to capital		Price-triggered subsidy	Means-tested cold-weather grant
Induced transfers	Import tariff or export subsidy	Monopoly concession	Monopsony concession; export restriction	Wage control	Land-use control	Credit control (sector-specific)	Deviations from standard IPR rules	Regulated price; cross subsidy	Mandated life-line electricity rate

Source: OECD, 2015a

Table A5. GSI typology of energy subsidies

Direct transfer of funds	Direct spending	**Earmarks and agency appropriations:** Targeted spending on the sector through government budgets of different levels 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 if on terms and conditions more favourable for business than in case of private ownership	**Equity injection in the energy sector from government budgets** **Government ownership of strategic and other energy assets that otherwise would not be viable:** e.g. strategic petroleum reserve, fossil fuel exploration and extraction companies, electricity plants, transmission and distribution systems for gas, electric power and heat, energy import and export companies
Tax expenditure 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 by 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 energy industry (e.g., based on environmental concerns or "windfall" profits)
	Foregone revenue from government-owned energy resources	**Process for energy resource leasing**: auctions for larger sites; sole-source for many smaller sites **Royalty relief or reductions in other taxes due on extraction:** reduced, delayed or eliminated royalties. **Process of paying royalties due:** allowable methods to estimate and pay public owners for energy minerals extracted from public lands
	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 rate
	Foregone revenue from government-owned infrastructure	**Use of government-provided infrastructure:** at no charge or below-market rate
	Foregone revenue from other government-provided goods or services	**Government-provided goods or services at below-market rates**

Induced transfers (income or price support)	Income or price support and market regulation	**Consumption mandates and mandated feed-in tariffs:** fixed consumption shares for use of a specific energy type. **Border protection or restrictions:** controls (tariff and non-tariff measures) on imports or exports leading to unfair advantages. **Regulated prices set at below-market rates:** for consumers (including where there is no financial contribution by government) **Regulated prices set at above-market rates:** for producers **Cross-subsidies in the electricity sector**
Transfer of risk to government	Credit support	**Government loans:** below-market lending to energy-related enterprises, including loans to energy exporters **Loan guarantees:** at below-market rates
	Insurance and indemnification	**Government insurance and indemnification:** market or below-market risk-management or risk-shifting services **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: adapted from Gerasimchuk, 2012; Lang, 2010; OECD, 2013

Annex 7. Cross-Subsidies in the Energy Sector

A "normal" subsidy sees government (in some form) transfer financial benefit to a private interest. Cross-subsidies involve one private interest transfer financial benefit to another private interest. A typical case in energy is when one group of customers of a fuel or electricity is granted a reduction in the price they pay because one or more other groups of customers pay an increased price.

For example, some countries have fuel-price stabilization funds that are funded with a premium on certain types of fuel, especially during the periods of low oil prices on the world market. The funds can then be used to subsidize prices for other fuels, especially those critical for vulnerable groups and during periods of high oil prices. Such stabilization funds are often criticized for their efficiency and reduced transparency, therefore they are likely candidates for policy reviews. Indeed, Peru, the Philippines, Chinese Taipei and Vietnam have all made price stabilization funds subject to their voluntary peer reviews of inefficient fossil fuel reforms reforms under the Asia-Pacific Economic Cooperation process.

Other examples pertain to the electricity sector. Many countries cross-subsidize electricity in this way, between classes of customers (e.g., increasing industrial electricity prices in order to reduce those for residential or agricultural consumers) or within a class of customers (e.g., by increasing prices to customers who consume high volumes of electricity in order to reduce prices below cost for customers who consume very low volume). Producer tariffs can also be arranged in a way that pays a price premium to certain categories of producers at the expense of the others.

Because cross-subsidies reduce the cost to one group of consumers or producers at the expense of another, the impact they have on consumption will almost always be much lower than for a "normal" subsidy: the group with lower price will be incentivized to consume or produce more, while the opposite is true for the other group. Meanwhile, cross-subsidies result in a general reduction in economic efficiency as this tool moves energy market agents away from economic decision making.

Annex 8. APEC Guidelines on a Voluntary Peer Review for Reform of Inefficient Fossil Fuel Subsidies that Encourage Wasteful Consumption (VPR/IFFSR) (Exerpts)

Full texts available at:

APEC Energy Working Group (n.d.). *Guidelines on a Voluntary Peer Review for Reform of Inefficient Fossil Fuel Subsidies that Encourage Wasteful Consumption (VPR/IFFSR)*. Retrieved from: https://www.ewg.apec.org/documents/FINAL_VPR-IFFSR_Guidelines.pdf

APEC Progress on Rationalizing and Phasing Out Inefficient Fossil Fuel Subsidies: Proposed Voluntary Reporting Mechanism, EGCFE, APEC 2012/EWG43/043 Agenda Item: 15b. http://www.iisd.org/gsi/sites/default/files/g20lib_apec_2012_volreportmechanism.pdf

Introduction

APEC leaders, meeting in Yokohama in November 2010, reiterated and expanded their previous commitment on fossil fuel subsidy reform by stating they would "rationalize and phase out inefficient fossil fuel subsidies that encourage wasteful consumption, while recognizing the importance of providing those in need with essential energy services, and review[ing] progress toward this goal on a voluntary basis."

The APEC Energy Working Group (EWG) is establishing this voluntary reporting mechanism in response to Leaders' direction. Completion of this annual voluntary report is intended to assist APEC members in assessing and reporting inefficient fossil fuel subsidies that currently exist in their economies; to share lessons learned regarding reform of inefficient fossil fuel subsidies; and to build toward the best practices in this area.

APEC economies are asked to complete this report on an annual basis and submit the report to the EWG. The EWG will compile all submissions on an annual basis and provide a summary report to APEC Senior Officials for their consideration before the Concluding Senior Officials Meeting (CSOM) each year. APEC Senior Officials will report progress toward meeting APEC's commitments to Leaders each year.

Principles

Each economy's progress on rationalizing and phasing out inefficient fossil fuel subsidies will be dependent on the economy's circumstances; the process will be economy-led and economy-owned. However, to increase the effectiveness of reporting across APEC economies, the voluntary reports are intended to consider the degree to which economies have followed these principles regarding fossil fuel subsidy reform, taking into account their national circumstances:

- **Reduce wasteful fossil fuel consumption**—To heighten energy security capability and reduce greenhouse gas emission.
- **Allocate resources efficiently**—To improve market efficiency and allow scarce resources to be channelled to uses that are more productive in the long term.
- **Target help to those in need of essential energy services**—To support removal of inefficient fossil fuel subsidies, targeted policies should be developed where appropriate to protect the poorest populations.
- S**upport sustainable economic growth**—Removing subsidies should be done in a way that does not hamper long-term sustainable growth and development and is attentive to macroeconomic impacts.

To be most effective, economies' strategies for rationalizing and phasing out inefficient fossil fuel subsidies should:

- Have clear objectives, success criteria and timeframes;
- Be appropriately sequenced in order to support an effective transition;
- Include a coherent strategy for communicating the benefits of reform;
- Plan for building and deploying technical and administrative capacity where required;
- Monitor and assess implementation in a timely and transparent manner.

In developing the strategies for rationalizing and phasing out inefficient fossil fuel subsidies, economies may find it beneficial to receive advice from relevant international institutions that have expertise in particular areas relating to subsidy reform.

Proposed Reporting Form

In view of the importance of reducing and phasing out inefficient fossil fuel subsidies, while protecting the poor, a voluntary reporting mechanism on fossil fuel subsidies is proposed for the Energy Working Group's consideration. A draft format for such a reporting mechanism is attached, which focuses on identification and assessment of efficient and inefficient subsidies, fossil fuel subsidies, plans for future subsidy reduction, and mechanisms for monitoring and evaluating the effectiveness of fossil fuel subsidy reduction. The Energy Working Group is asked to consider the Voluntary Reporting Form on Inefficient Fossil Fuel Subsidies Reduction with a view toward approving a voluntary reporting mechanism that can be announced by APEC Leaders in November 2011.

VOLUNTARY REPORTING FORM ON REDUCING AND TARGETING INEFFICIENT FOSSIL FUEL SUBSIDIES IN APEC

1. What inefficient fossil fuel subsidies that encourage wasteful fossil fuel consumption does your economy currently have?
    a. Please describe the subsidies, including the programme names, implementing government agencies, direct recipients and duration of the subsidies,
    b. Please describe how the subsidies are paid out,
    c. Provide an estimate of their financial value, and
    d. Explain their policy purpose and/or justification.
2. What measures has your economy taken to specifically target inefficient fossil fuel subsidies toward providing those in need with essential energy services?
    a. Please describe the policy rationale for each action taken, including any transitional support mechanisms, and how long they have been in place,
    b. Describe which segments of the population receive subsidies as a result of the policy, and
    c. How this subsidy targets essential energy services for this population.
3. What measures has your economy taken to identify and reduce inefficient fossil fuel subsidies?
    a. Please describe the policy actions taken, including any legislation or regulatory reform, when they were taken, and timeframes,
    b. How the inefficient subsidies were identified,
    c. Indicate which subsidies were affected by the policy action,
    d. How policy changes were communicated to the public and other stakeholders, and
    e. Whether there were any lessons learned your economy would be willing to share.
4. If your economy has undertaken reform of inefficient fossil fuel subsidies, please answer the following regarding the reform:
    a. What was the estimated amount/size of subsidy per unit before reform?
    b. What is the total budgetary impact of reform?
    c. Who was eligible for subsidies before the reform?
    d. Who was eligible for subsidies after the reform?
    e. Describe how this reform benefits vulnerable populations or provides essential energy services to those in need.
    f. When was the reform undertaken, and has it maintained?
5. What "lessons learned" would your economy be willing to share with APEC members regarding fossil fuel subsidy reform?
6. What are your plans for implementing the APEC Leaders' commitment in the coming year? Please describe those plans – along with estimated impacts, if possible, as per questions 3 and 4.
7. How will your economy monitor the implementation of subsidy reform; measure the effectiveness of its subsidy reduction; and monitor for undesirable secondary effects of subsidy reduction? Please describe the indicators used and lessons learned in this area.

Global Subsidies Initiative