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Options for Taking Forward a Potential Voluntary Standstill Commitment on Inefficient Fossil Fuel Subsidies

APEC Committee on Trade and Investment

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Executive Summary

As specified in the joint statement made by the Asia-Pacific Economic Cooperation (APEC) Ministers Responsible for Trade on 5 June 2021, "market-distorting subsidies undermine a level-playing field."[1] The Ministers also noted increasing concern about subsidies that have a negative environmental impact. APEC member economies made a commitment in 2009 to rationalise and phase out fossil fuel subsidies (FFSs) that encourage wasteful consumption; subsequent restatements of this commitment by APEC member economies added the qualifier "inefficient" in front of FFSs. Building on this background, APEC Ministers Responsible for Trade tasked APEC officials to explore "options, for those members that are in a position to do so, to undertake a potential voluntary standstill on inefficient fossil fuel subsidies."[2]

This study is intended to support the exploration of standstill options, including a review of existing standstill commitments, identification of potential options for a standstill on inefficient FFSs, considerations for ensuring that a standstill process is just, and the potential implications of a standstill on APEC member economies.

Any standstill commitment would apply only to inefficient subsidies. The publicly available, multi-economy inventories of the fossil fuel support measures and FFSs[3] that have been used within this study do not make any distinction between FFSs that are efficient and those that are inefficient. It is therefore impossible to say what share of the subsidies are inefficient and, therefore, to what share of FFSs a standstill commitment could apply in any APEC member economy or for a group of such economies. The scale of FFSs and the impacts of their reform presented in this study are therefore a maximum case—by considering all FFSs that could be subject to reforms, it is implicitly assumed that all FFSs could be classed as inefficient. In practice, it would be up to APEC member economies to decide—individually, or potentially as a group—which of their subsidies would be considered inefficient and potentially subject to a voluntary standstill commitment and which economies are in a position to use this tool.

The scale of all FFSs—both efficient and inefficient—within APEC and their contribution to greenhouse gas (GHG) emissions are significant. Recent research and modelling by the Global Subsidies Initiative (GSI) of the International Institute for Sustainable Development (IISD) indicates that for a nine-member cross-section of APEC member economies[4] covered by the study, the emission reductions that could be achieved through gradually removing all efficient and inefficient FFSs over the period 2021–2025 would be around 2% of economy-wide CO_2 emissions on average from 2025 and around 2.2 $GtCO_2$ cumulatively over the 10-year period 2021–2030. This would represent a useful contribution to reducing GHG emissions, but a wider portfolio of measures would be needed to move economies towards meeting Paris Agreement or net-zero commitments.[5] Removing all efficient and inefficient FFSs could create much-needed fiscal space for such investments, especially while economies continue to suffer from the COVID-19 pandemic. For example, the cumulative

[1] APEC. "APEC Ministers Responsible for Trade Meeting Joint Statement 2021," (June 2021), https://www.apec.org/Meeting-Papers/Sectoral-Ministerial-Meetings/Trade/2021_MRT
[2] Ibid.
[3] The major inventories used are from the IEA, IMF and OECD, combined by the OECD and the IISD into www.fossilfuelsubsidytracker.org.
[4] Australia, Canada, People's Republic of China, Indonesia, Japan, Mexico, Russia, the United States and Viet Nam.
[5] If sufficient alternative GHG reduction measures were available, targets and commitments could be met without recourse to FFS reform (FSSR). But FFSs generally have the advantage of also generating fiscal savings for the economy as a whole and thus represent an attractive GHG mitigation option if adverse impacts on poor and vulnerable parts of society and the economy can be mitigated.

fiscal savings would account for around USD 1.2 trillion over the period 2021–2030 for the nine APEC member economies covered by the study. A standstill on inefficient subsidies has the benefit of creating a voluntary agreement amongst APEC economies in a position to do so to ensure that inefficient subsidies do not increase and exacerbate any adverse impacts. A voluntary standstill can also complement existing individual efforts that APEC economies are undertaking to support inefficient fossil fuel subsidy reform.

With these environmental and fiscal implications in mind, a standstill can present an avenue for addressing inefficient FFSs and mitigating their impacts. Standstills have an international track record of use in trade in particular, but also in other forums, including environmental and sustainable development agreements. Standstills can be inventory- or value-based. An inventory approach is focused on an inventory (list) of an economy's inefficient FFSs, with economies that are able to committing to not adding any new items to the inventory. A value-based approach would be focused on prohibiting the value of inefficient FFSs from increasing compared to a set baseline. Such a standstill would entail a voluntary commitment from participating economies to not increase their total inefficient FFSs.

Based on the research conducted as well as feedback from a workshop held on 19 August 2021, the following options could be explored to undertake a potential voluntary standstill on inefficient FFSs for APEC member economies that are in a position to do so:

a. *Adopt an inventory-based voluntary standstill commitment*. In this case, a standstill would be based on an inventory (list) of an economy's inefficient FFSs. Such an inventory would be self-identified, based on the economy's self-definition and scope. It could be informed by a previous peer review but does not have to be—it could equally be drawn from other information sources and processes, potentially in combination with any previous peer review. Economies that are in a position to do so would commit to not adding any new items to the inventory.[6] Further, a voluntary commitment could be made that any inefficient FFSs within the inventory that already had a specified end date would not be extended beyond that expiration date.[7] While an *inventory-based* approach would increase transparency—itself an important driver for debate that could lead to reform—it would generally not cover regulated consumer prices held below free-market values. In some economies, these are the largest class of inefficient FFSs that are generally covered by existing policies and measures, which are further generally not time-limited. The impact on economic, climate and other goals would depend on whether the economy was planning to add new inefficient FFSs and whether there were inefficient FFSs with expiry dates.

b. *Adopt a value-based voluntary standstill commitment*. In this case, a standstill would prohibit the financial value of inefficient FFSs from increasing compared to a set baseline (e.g., a particular year or an average over a period).[8] Alternatively, it could also be set at a more disaggregated level. For example, the value of inefficient FFSs to fossil fuel-generated electricity could be capped at some historical value. The

[6] In certain economies, there may be a rationale for increasing FFSs to vulnerable populations in the short term, particularly when there are no other alternatives available. Such increases in FFSs would ideally be under exceptional circumstances and transitory in nature.
[7] A further variant could be that any inefficient FFSs removed from the inventory could either be replaced by one having lower impacts on GHG emissions or other indicators or reformed such that it reduces one or more of these impacts. This variant would be more complex, could lead to some methodological difficulties and would likely be less ambitious.
[8] Again, in certain economies, there may be a rationale for increasing FFSs to the vulnerable population in the short term.

commitment would not cover unquantified inefficient FFSs, which could be significant in certain economies. These could be added to the (historical) baseline against which the standstill is assessed as and when they are quantified. Weaknesses of the *value-based* approach include: some inefficient FFSs in certain economies are not quantified and may not be for several years (although the baseline could be revised as and when they were); the baseline value itself may be challenging to quantify, at least in the short term; governments may not be able to control the value of certain inefficient FFSs (for example, those that result in tax expenditure); and it may be difficult in practice for some economies to limit the value of inefficient FFSs, since fossil fuel prices, like many commodities, can increase significantly over short time periods.[9] The impacts on economic, climate and other goals would depend on whether the value of inefficient FFSs would be expected to increase in the future, for example, because world fuel prices increase or because the volume of inefficiently subsidised fuels increases.

c. *Adopt a hybrid standstill commitment*. This could be *inventory-based* for certain categories of inefficient FFSs and *value-based* for others. Noting the weaknesses of the purely *inventory-based* and *value-based* approaches (options A and B above), one option would be to use an *inventory-based* approach for inefficient FFS categories[10] like direct transfer of funds; tax expenditure, other revenue foregone and under-pricing of goods and services; and transfer of risk. A *value-based* approach could be used for the induced transfer (price support) category. This category covers regulated consumer prices held below free-market values, which in some economies are likely to be the largest class of inefficient FFSs.[11] A hybrid commitment would be more complex and resource-intensive to implement than either of the options in isolation.

The impacts of a standstill commitment are difficult to quantify and depend on a range of assumptions. First among these is the type of commitment (as per the options presented above). Second, there are no data sets covering inefficient FFSs, and therefore the analysis in this study has been based on inventories of all FFSs (efficient and inefficient) from three major intergovernmental organisations (IGOs)—the International Energy Agency (IEA), the International Monetary Fund (IMF) and the Organisation for Economic Co-operation and Development (OECD)—with modelling (and its inherent assumptions) from studies by the IISD. Furthermore, the impact of a standstill commitment would depend on unknowns, notably APEC member economies' plans to introduce new inefficient FFSs and changes in world fuel prices (notably for oil). Results are therefore illustrative or indicative only and would be improved by further analysis and modelling.

Noting these assumptions and uncertainties, the study shows that, based on past relationships between all FFSs and the global oil price, an increase in the global oil price of USD 25/barrel would be expected to increase all FFSs in the APEC region by USD 24.5 billion (adding approximately one third to the average total of all FFSs within APEC member economies in the period 2015–2019[12]). Were this FFS increase to be avoided, we could expect annual CO_2 savings of around 49 $MtCO_2$ and roughly 437 $MtCO_2$ in reductions cumulatively in the period 2022–2030. Higher oil price increases would increase these figures, with lower oil prices

[9] A voluntary commitment to reform those subsidies, potentially over a period of years, could also be added.
[10] Categories are those used within the SDG Indicator 12.c.1 methodology: United Nations Environmental Programme, "Measuring Fossil Fuel Subsidies in the Context of the Sustainable Development Goals" (2019), https://www.unep.org/resources/report/measuring-fossil-fuel-subsidies-context-sustainable-development-goals
[11] Again, a voluntary commitment to reform those subsidies, potentially over a period of years, could also be added.
[12] The average for the period 2015–2019 for all subsidies—efficient and inefficient—was USD 74.63 billion.

decreasing them. The share of these savings that could be realised by a standstill commitment would further depend on how many APEC member economies were in a position to, and chose to, make the commitment, what share of subsidies was classed as inefficient, and what the impact could be from unquantified inefficient subsidies (approximately one quarter of all FFSs in APEC member economies may be unquantified at present).

Impacts from a standstill commitment should also be seen in light of economies' analysis of whether the FFSs they have are inefficient and how reform could positively affect their economic, environment and social indicators. A standstill commitment would be likely to increase transparency on FFSs, encouraging further analysis, evaluation and debate. It could also be an important step towards wider commitments to reform inefficient FFSs. That the commitment would only apply on a voluntary basis within economies in a position to take it on would enable APEC member economies to make the commitment only if they could expect positive impacts.

1 Introduction

Inefficient FFSs can reduce the price of fossil fuels and thus encourage wasteful consumption. A study by the International Institute for Sustainable Development (IISD) covering 32 economies representing 77% of global CO_2 emissions, 72% of global GDP and 72% of the global population shows that the gradual removal of all consumer fossil fuel subsidies (FFSs), both efficient and inefficient, by 2025, as identified by two intergovernmental organisations (IGOs),[13] would lead to average emission reductions of 6% by 2030 and a cumulative emission reductions of almost 5.5 $GtCO_2$ in the period 2021–2030.[14] For the nine Asia-Pacific Economic Cooperation (APEC) member economies[15] studied, the results are smaller but still significant: in these economies, emission reductions would be around 2% on average, representing around 2.2 $GtCO_2$ cumulatively by 2030. This would represent a significant contribution to reducing greenhouse gas (GHG) emissions, but a wider portfolio of measures would be needed to move economies towards meeting Paris Agreement or net-zero commitments.[16] No estimate has been made as to emission reductions based on removing only inefficient FFSs, as data on specifically inefficient FFSs have not been generated by the International Energy Agency (IEA), the International Monetary Fund (IMF), and the Organisation for Economic Co-operation and Development (OECD), the three IGOs that generate periodic subsidy estimates, or by other organisations.

There are further various pathways through which inefficient FFSs can affect the competitiveness of industries at different stages of fossil fuel product value chains and lead to significant trade impacts as a result of either direct or pass-through effects.[17] Additionally, FFSs may not serve as efficient safety nets for the poor, as in many instances, a large share of benefits tends to go to the wealthier parts of society due to their higher consumption patterns. For example, in the Indian state of Jharkhand, the richest 40% of all households receive about 60% of the electricity subsidy benefits while the poorest 40% only receive 25%.[18]

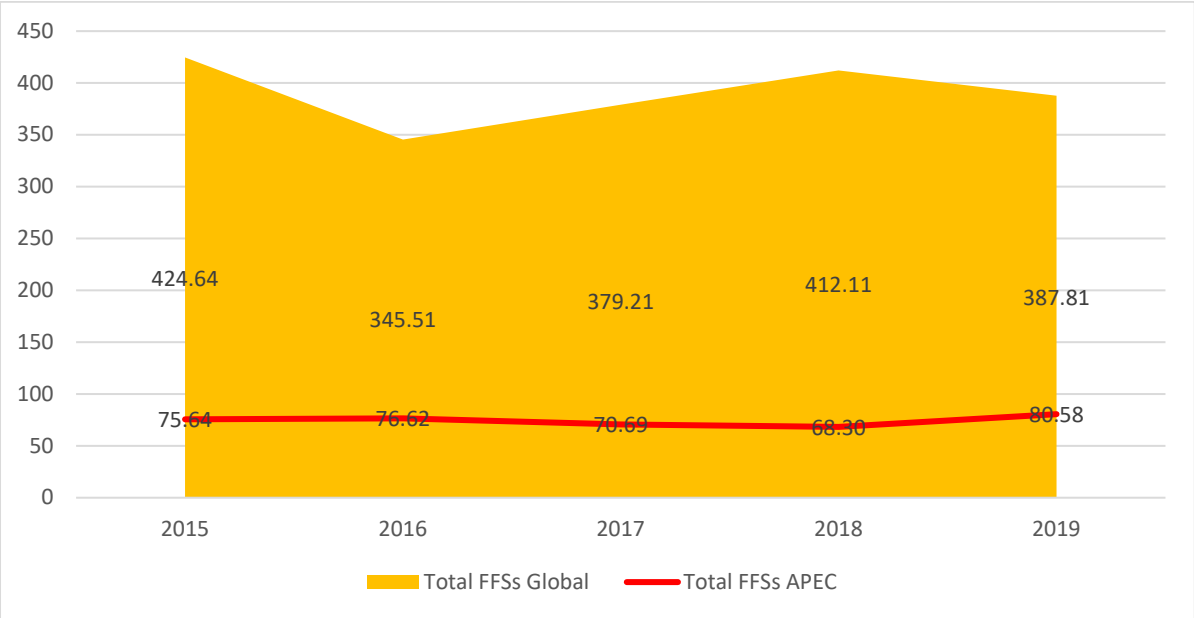
According to estimates from the IEA, the IMF, and the OECD,[19] global expenditures on all FFSs—efficient and inefficient—are several hundred billion dollars each year. FFSs may also negatively impact the ability of governments to provide adequate funding to areas such as education or healthcare. Removing inefficient FFSs could create much-needed fiscal space for such investments, especially while economies continue to suffer from the COVID-19 pandemic. For example, according to an IISD Global Subsidies Initiative (GSI) study, gradual removal of all FFSs—efficient and inefficient—by 2025 could generate cumulative savings

[13] Data are taken from published estimates of consumer FFSs by the International Energy Agency (IEA) in their "Fossil Fuels Subsidy Database" (2021), https://www.iea.org/data-and-statistics/data-product/fossil-fuel-subsidies-database and the International Monetary Fund (IMF), "Climate Change: Fossil Fuel Subsidies" (2021), https://www.imf.org/en/Topics/climate-change/energy-subsidies.
[14] Kuehl, J., Bassi, A. M., Gass, P., & Pallaske, G. "Cutting Emissions Through Fossil Fuel Subsidy Reform and Taxation" (Winnipeg, Canada: IISD, 2021), https://www.iisd.org/publications/cutting-emissions-fossil-fuel-subsidies-taxation
[15] Australia, Canada, the People's Republic of China, Indonesia, Japan, Mexico, Russia, the United States and Viet Nam.
[16] If sufficient alternative GHG reduction measures were available, targets and commitments could be met without recourse to FFS reform. But FFSs generally have the advantage of also generating fiscal savings for the economy as a whole and thus represent an attractive GHG mitigation option if adverse impacts on poor and vulnerable parts of society and the economy can be mitigated.
[17] Moerenhout, T., & Irschlinger, T., "Exploring the Trade Impacts of Fossil Fuel Subsidies" (IISD, 2020), https://www.iisd.org/publications/exploring-trade-impacts-fossil-fuel-subsidies
[18] Sharma, S., Moerenhout, T., & Aklin, M., "How to Target Residential Electricity Subsidies in India" (IISD, 2020), https://www.iisd.org/publications/target-residential-electricity-subsidies-india-step-2
[19] OECD, "Fossil Fuel Support Data and Country Notes" (n.d.) https://www.oecd.org/fossil-fuels/data/; see note 13 for the IEA and IMF databases.

close to USD 3 trillion by 2030 for the 32 economies covered by the study. However, the removal of all FFSs—efficient and inefficient—in the nine APEC member economies within the 32 economies considered is modelled to account for cumulative savings worth USD 1.2 trillion by 2030.[20]

Therefore, there have been calls for governments to remove FFSs—often focused on inefficient FFSs—for many years, and several economies have committed to phasing out inefficient FFSs under various forums, including within the Asia-Pacific Economic Cooperation (APEC), or demonstrated their willingness to take action towards these or other commitments.[21] Nevertheless, global spending on all FFSs—efficient and inefficient—remains high, and, in some economies, the spending is increasing. Among APEC member economies, the size of all FFSs ranged between around USD 68 billion and USD 80 billion in the period 2015 to 2019.[22]

Figure 1.1 Size of total FFSs—efficient and inefficient—globally and in APEC member economies between 2015 and 2019



Source: Fossil Fuel Subsidy Tracker, www.fossilfuelsubsidytracker.org

At their June 2021 meeting, APEC Ministers Responsible for Trade brought forward a new element in this discussion: the idea of a voluntary standstill on inefficient FFSs.[23] This study aims to support the discussion and decision making among APEC member economies that are interested in exploring potential options on a standstill. Among others, it is intended to support the exploration of standstill options, including a review of existing standstill commitments, identification of potential options for a standstill on inefficient FFSs, the potential

[20] Australia, Canada, the People's Republic of China, Indonesia, Japan, Mexico, Russia, the United States and Viet Nam.
[21] Sanchez, L., Wooders, P., Mostafa, M., & Bechauf, R., "53 Ways to Reform Fossil Fuel Consumer Subsidies and Pricing" (IISD, 2020), https://www.iisd.org/articles/53-ways-reform-fossil-fuel-consumer-subsidies-and-pricing
[22] Data is taken from www.fossilfuelsubsidytracker.org, a website developed by the OECD and IISD that combines estimates from the IEA, the IMF and the OECD. There is not yet complete coverage of consumer and producer FFSs in all APEC economies within these sources, so the totals presented represent a prudent estimate.
[23] APEC, "APEC Ministers Responsible for Trade Meeting Joint Statement 2021" (APEC, 2021), https://www.apec.org/Meeting-Papers/Sectoral-Ministerial-Meetings/Trade/2021_MRT

implications of a standstill on APEC member economies, and considerations for ensuring that a standstill process is socially just.

2 The Relationship Between a Standstill on Inefficient Fossil Fuel Subsidies and Other Commitments

APEC Leaders first committed "to rationalise and phase out over the medium term fossil fuel subsidies that encourage wasteful consumption, while […] providing those in need with essential energy services"[24] in 2009. Between 2010 and 2016, they reaffirmed the commitment, adding in "inefficient" as a qualifier to FFS. Furthermore, APEC Leaders first committed to "review progress toward this goal on a voluntary basis"[25] in 2010 and have repeatedly reiterated this commitment since then. On this basis, the APEC Energy Working Group initiated voluntary inefficient FFS peer reviews and capacity-building activities to support the mandate of APEC Leaders. So far, four APEC member economies have completed a peer review process: New Zealand (2015), Peru (2015), the Philippines (2016) and Chinese Taipei (2017). Four other APEC member economies have completed a similar review under the G20 process: the People's Republic of China (2016), the United States (2016), Mexico (2018) and Indonesia (2019).

In June 2021, the APEC Ministers Responsible for Trade welcomed further capacity-building initiatives in this field, including voluntary peer reviews, and tasked their officials "to explore options, for those members that are in a position to do so, to undertake a potential voluntary standstill on inefficient fossil fuel subsidies for progress to be reported to ministers in November."[26] Such a voluntary standstill can add to the 2009 APEC Leaders' commitment and the APEC peer review mechanism by encouraging further efforts to identify FFSs, evaluating whether they are efficient public policies and potentially reforming them.

A voluntary standstill on inefficient FFSs can also act alongside other broader climate change and international commitments. For instance, APEC member economies that are also parties to the United Nations Framework Convention on Climate Change (UNFCCC) have signed the Paris Climate accord, including a commitment to "[m]aking finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development."[27] Signatories of the Paris Agreement are also required to submit nationally determined contributions (NDCs); however, so far, only five APEC member economies have referenced the reform of inefficient FFSs in current or past NDCs.[28] Nearly all APEC member economies have also adopted the 2030 Agenda for Sustainable Development, which includes a Sustainable Development Goal target on the rationalisation of inefficient FFSs and an indicator against which United Nations member states are required to report their FFSs (production and consumption) from 2020.[29,30,31] In addition, a voluntary standstill on inefficient FFSs is also complementary to domestic climate and emission reduction commitments. To date, 11 APEC

[24] APEC, "APEC Summit. Leaders' Declaration—Sustaining Growth, Connecting the Region" (APEC, 2009), http://www.apec.org/Meeting-Papers/ Leaders-Declarations/2009/2009_aelm.aspx
[25] APEC, "2010 Leaders' Declaration" (APEC, 2010), https://www.apec.org/Meeting-Papers/Leaders-Declarations/2010/2010_aelm
[26] APEC, 2021, supra n. 1
[27] UNFCCC, "Paris Agreement" (UNFCCC, 2015), https://unfccc.int/sites/default/files/english_paris_agreement.pdf
[28] IISD own research, based on NDCs submitted to the UNFCCC.
[29] No reference is made to "inefficient" within the reporting requirement for SDG Indicator 12.c.1 itself, but SDG 12(c) does call for the rationalization of inefficient FFSs.
[30] United Nations. "Transforming our World: The 2030 Agenda for Sustainable Development" (UN, 2015), p. 35., https://sdgs.un.org/2030agenda
[31] United Nations, "Work of the Statistical Commission Pertaining to the 2030 Agenda for Sustainable Development" (UN, 2017), https://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A_RES_70_1_E.pdf

member economies have made net-zero commitments with different levels of scrutiny, according to the Net Zero Tracker.[32] A standstill on new inefficient FFSs is also aligned with the objectives of other initiatives, such as the Agreement on Climate Change, Trade and Sustainability (ACCTS) negotiations, which aim to establish concrete commitments to eliminate FFSs.[33]

[32] Energy & Climate Intelligence Unit, "Net Zero Tracker" (Energy & Climate Intelligence Unit, n.d.), https://eciu.net/netzerotracker

[33] New Zealand Government, "New Zealand leading trade agreement driving action on climate change and the environment) (The Beehive, 2019), http://www.beehive.govt.nz/release/new-zealand-leading-trade-agreement-driving-action-climate-change-and-environment

3 Examples of Standstills Within International Agreements

Standstills are a recognised mechanism that have been used in a range of agreements dealing with both trade and other issues. Sections 3.1 and 3.2 summarise some examples. The examples given are neither exhaustive nor are they ranked in any order of significance.

3.1 Trade Agreements

Amongst trade examples, standstill agreements within the services liberalisation parts of free trade agreements or regional trade agreements are relatively common.[34] Generally, negotiating parties agree to liberalise services in their respective economies apart from those within a list of sectors or activities. These "exceptions" can either be mutually agreed upon (common to all negotiating parties) or are proposed individually by each party. The standstill then applies to these exceptions—parties cannot add to the negotiated list. A further element commonly employed is a "ratchet": parties are expected to progressively reduce their number of exceptions over time. Further, the list of exceptions negotiated between parties is then generally used as the ceiling for agreements with other parties in other agreements; new agreements with these other parties would not be expected to have any more exceptions than within agreements previously negotiated.

In multilateral trade agreements within the World Trade Organisation (WTO), the *2015 Nairobi Ministerial Declaration* on agricultural export subsidies,[35] following the *2013 Bali Ministerial Decision on Export Competition,*[36] includes Article 10: "Members shall seek not to raise their export subsidies beyond the average level of the past five years on a product basis."

All the way back in 1957, a Proposal by the Executive Secretary of the General Agreement on Tariffs and Trade (GATT) called for a *Declaration Extending the Standstill Regarding Export Subsidies on Non-Primary Products*. This standstill was periodically extended.[37]

A number of other related trade agreements have included elements with similarities to standstills. An example is the European Union–Ukraine Deep and Comprehensive Free Trade Agreement, which includes a prohibition on dual pricing for gas and electricity pricing.[38]

[34] e.g., "Annex I" to the Australia-Chile Free Trade Agreement represents a standstill commitment, as a party (at the central and regional government levels) will be able to maintain measures listed there that do not comply with these obligations, but it will not be able to increase the trade restrictiveness of those measures. In addition, if a party unilaterally liberalises those measures, such liberalisation will be locked into the FTA automatically (a so-called "ratchet" mechanism)

[35] WTO, "Export Competition, Ministerial Decision of 19 December 2015: WT/MIN(15)/45 – WT/L/980" (WTO, 2015), https://www.wto.org/english/thewto_e/minist_e/mc10_e/l980_e.htm

[36] WTO, "Export Competition, Ministerial Decision of 7 December 2013" (WTO, 2013), https://www.wto.org/english/thewto_e/minist_e/mc9_e/desci40_e.htm

[37] See, e.g., GATT Declaration, "Extension of the Standstill Provisions of Article XVI:4, BISD, 9th Supp. 33 (1960)."

[38] See EU–Ukraine Association Agreement Articles 269 (Domestic regulated prices) and 270 (Prohibition of dual pricing). Article 270 agrees that the price for exports of energy goods shall not be higher than those intended for domestic consumption. https://mfa.gov.ua/en/about-ukraine/european-integration/eu-ukraine-association-agreement

3.2 Agreements Outside Trade

Outside trade, agreements that include standstill-like provisions include:

- The European Commission (EC)–Australia Agreement on Coal (15 December 1993): "which provided for a standstill by the EC in subsidised coal production, and for a commitment by Australia not to challenge the Community's coal subsidy scheme."[39]
- The Beyond Oil & Gas Alliance (BOGA) is planned to be launched in 2021. Its core members would commit to issuing no new licences for oil and gas exploration and extraction.[40]
- Sustainable Development Goal (SDG) 14.6 includes within its text, "by 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, and eliminate subsidies that contribute to Illegal, unreported and unregulated (IUU) fishing, and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed [parties] should be an integral part of the WTO fisheries subsidies negotiation."[41]
- Consolidated and Progressive agreement for Trans-Pacific Partnership (CPTPP) Section 20.16 paragraph 7, referring to overfishing and overcapacity, includes that "each Party shall make best efforts to refrain from introducing new, or extending or enhancing existing, subsidies within the meaning of Article 1.1 of the *SCM Agreement…"*
- There is a standstill provision on subsidies in connection with mergers and acquisitions in the European Union.[42]
- On e-commerce, there is a moratorium on the application of tariffs on e-commerce products and services, which members regularly renew. Under it, members agree not to impose any tariffs on such products or services pending an agreement on rules that should apply to them.

[39] The Agreement was reviewed in 1998 and considered satisfactory by both parties (https://www.oecd.org/greengrowth/fisheries/1918086.pdf, p. 18)
[40] Abnett, K., & Jacobsen, S., "Demark, Costa Rica Seek Alliance to Speed up the End of Oil and Gas" (Reuters, 2021), https://www.reuters.com/business/sustainable-business/denmark-costa-rica-seek-alliance-speed-up-end-oil-gas-2021-08-25/. How many Members BOGA will have, and how many of these would have "core" status, is unclear at the time of writing (September 2021).
[41] Sustainable Development Solutions Network, "Indicators and a Monitoring Framework" (SDSN, n.d.), https://indicators.report/targets/14-6/
[42] de Pree, J., Gornall, H., de Rijke, B., & The, S., "EU Proposes Foreign Subsidy Control to Match Internal State Aid Regime" (De Brauw Blackstone Westbroek, 2021), https://www.debrauw.com/articles/eu-proposes-foreign-subsidy-control-to-match-internal-state-aid-regime

4 Options for Standstill Commitments with Regards to Inefficient Fossil Fuel Subsidies

4.1 Potential FORMS of Inefficient FFS Commitments

From the examples presented in Section 3, FFS standstill commitments could take on two main forms:

1. *Inventory-based*: In this case, a standstill would be based on an inventory (list) of an economy's inefficient FFSs. Such an inventory would be self-identified based on the economy's self-definition and scope. It could be informed by a previous peer review but does not have to be—it could equally be drawn from other information sources and processes, potentially in combination with any previous peer review. Economies that are in a position to do so would commit to not adding any new item to the inventory.[43] Further, a voluntary commitment could be made that any inefficient FFSs within the inventory that already had a specified end date would not be extended beyond that date.[44] While an *inventory-based* approach would increase transparency, itself an important driver for debate that could lead to reform, the approach would generally not cover regulated consumer prices held below free-market values—which in some economies are the largest class of inefficient FFS. These prices are generally covered by existing policies and measures, which are further generally not time-limited. The impact on economic, climate and other goals would depend on whether the economy was planning to add new inefficient FFSs and whether there were inefficient FFS with expiry dates. The example of an inventory shown in Figure 4.1 is taken from New Zealand's Voluntary FFS Reform peer review under the APEC process (2015), which identified eight indirect supports measures.[45]
2. *Value-based*: A value-based standstill would prohibit the financial value of inefficient FFSs from increasing, compared to a set baseline (e.g., a particular year or an average over a period).[46] Alternatively, it could also be set at a more disaggregated level. For example, the value of inefficient FFSs to fossil fuel-generated electricity could be capped at some historical value. The commitment would not cover unquantified inefficient FFSs, which could be significant in certain economies. These could be added to the (historical) baseline against which the standstill is assessed as and when they are quantified. In the *value-based* approach, some inefficient FFSs in certain economies are not quantified and may not be for several years (although the baseline could be revised as and when they were); the baseline value itself may be challenging to quantify, at least in the short term; governments may not be able to control the value of certain inefficient FFSs (for example, those resulting in tax expenditure); and it may be difficult in practice for some economies to limit the value of inefficient FFSs since fossil fuel prices, like many commodities, can increase significantly over short time

[43] In certain economies, there may be a rationale for increasing FFSs to vulnerable populations in the short term, particularly when there are no other alternatives available. Such increases in FFSs would ideally be under exceptional circumstances and transitory in nature.
[44] A further variant could be that any inefficient FFSs removed from the inventory could either be replaced by one having lower impacts on GHG emissions or other indicators or reformed to reduce one or more of these impacts. This variant would be more complex, could lead to some methodological difficulties and would be likely to be less ambitious
[45] It is noted that this example is purely illustrative. While peer reviews under APEC can form the basis for constructing an inventory, many other data sources and processes could be employed, alone or jointly.
[46] Again, in certain economies, a rationale can be made for increasing FFSs to vulnerable populations in the short term.

periods.[47] The impact on economic, climate and other goals would depend on whether the value of inefficient FFS would be expected to increase in the future, for example, because world fuel prices increase or because the volume of inefficiently subsidised fuels increases. As an illustration, Figure 4.2 shows global estimates of the financial value of all FFSs—efficient and inefficient—by fuel type for the period 2010–2017. Alternatively, it could also be set at a more disaggregated level. For example, the value of inefficient FFSs to fossil fuel-generated electricity could be capped at some historical value.

Inefficient FFS standstill commitments could be either *inventory-based* or *value-based*. Alternatively, a commitment could also be made to a combination/hybrid of the two, for example, based on categories of inefficient FFSs (see Section 4.2).

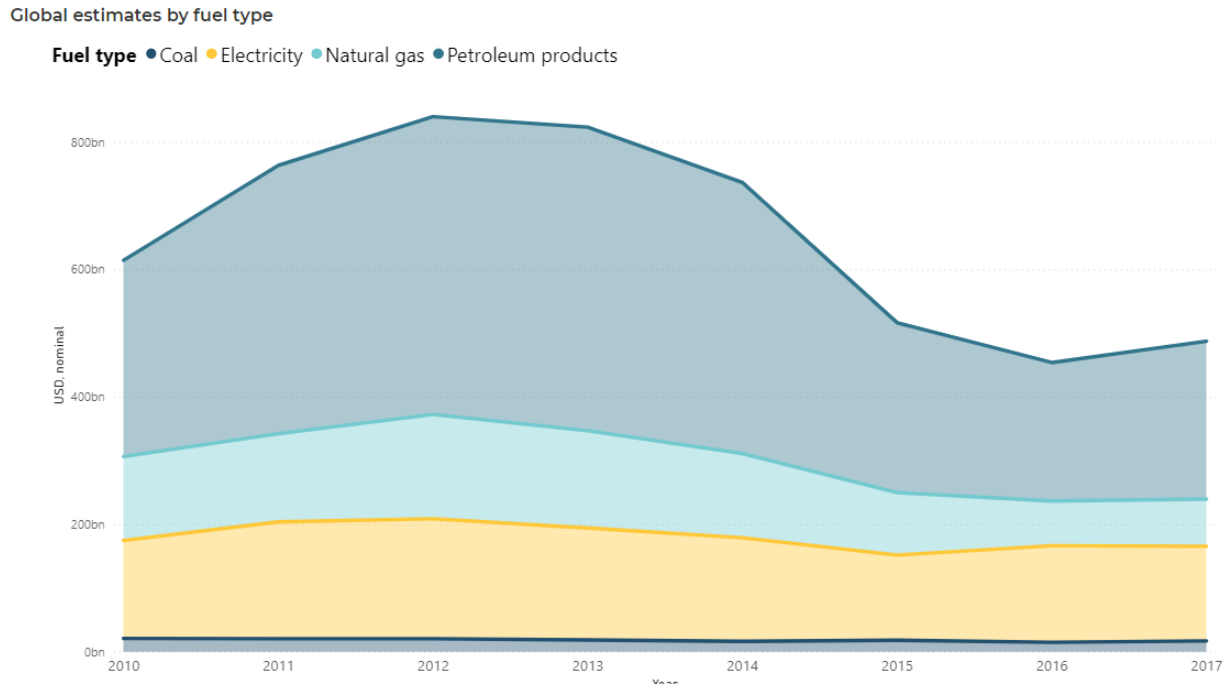
Box 4.1 Measures identified by New Zealand under the APEC Fossil Fuel Subsidy Reform (FFSR) peer review in 2015 (to identify inefficient FFS leading to wasteful consumption)[48]

"The APEC panel reviewed eight measures that are considered to support the fossil fuel sector:

- motor spirit excise duty refund
- funding of international treaty obligation to hold oil stocks
- non-resident drilling rig and seismic ship tax exemption
- indemnity for mining land remediation
- research and development funding for the oil industry
- tax deductions for petroleum-mining expenditures
- financial restructure of Solid Energy
- petroleum tax and royalty regime."

[47] A voluntary commitment to reform those subsidies, potentially over a period of years, could also be added.
[48] Ministry of Business, Innovation & Employment, "APEC Fossil Fuel Subsidy Reform Peer Review" (New Zealand Government, 2015), https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/international-engagement-on-energy/apec-fossil-fuel-subsidy-reform-peer-review/. A number of these measures have subsequently been terminated.

Figure 4.1 Global estimates of all FFS—efficient and inefficient—by fuel type, 2010–2017



Source: Fossil Fuel Subsidy Tracker, https://fossilfuelsubsidytracker.org/

4.2 How Standstills Could Cover Different Categories of Inefficient FFSs: Data Constraints

SDG Indicator 12.c.1 calls for UN members to report their FFSs annually, from 2020 to 2030. The indicator explicitly includes FFSs to both producers and consumers of fossil fuels:

"Amount of fossil fuel subsidies per unit of GDP (production and consumption)"

The indicator is currently classified as Tier 2, meaning that there is an agreed methodology to be used to report against it but, as yet, no complete data set. The methodology, published in 2019 by the United Nations Environment Programme (the Custodian of the Indicator), identifies four categories of FFSs.[49] Table 4.1 presents these categories along with commentary on typical data availability and whether this data would be most amenable to an *inventory-based* or a *value-based* commitment.

All UN members—including most APEC member economies—would have to follow the agreed methodology when reporting against SDG Indicator 12.c.1.[50] This does not mean that the inventory or value of inefficient FFS under which a potential standstill commitment would be assessed would be the same as this reporting under SDG Indicator 12.c.1. First, the SDG reporting covers all FFSs—not only inefficient FFSs. Second, each APEC member economy could use its own definitions of "fossil fuel" and "fossil fuel subsidy" and choose its own approach to assessing which FFSs it considers to be inefficient. Nevertheless, in this section,

[49] United Nations Environment Programme, 2019, supra n. 10.
[50] Reporting, as with all SDG indicators, is voluntary.

the SDG Indicator 12.c.1 methodology provides a useful structure and ideas against which to assess how a standstill commitment could be applied in practice.

Table 4.1 shows that neither an *inventory-based* commitment nor a *value-based* commitment would offer straightforward coverage of all inefficient FFSs within a particular economy. For the first, third and fourth categories, an *inventory-based* approach may offer more complete coverage, as many inefficient FFSs may not be quantified. But for the second category, induced transfers (most commonly, governments regulating prices charged to consumers), an *inventory-based* approach is not suitable, as the level of FFSs under this category varies mostly with respect to changes in global market prices (without any change in government policies or measures). A *value-based* approach would be more suitable, noting that there are currently few economies making estimates of this type (international estimates, notably by the IEA and IMF, are most commonly used, but these may not be recognised or supported by the economies in question). The second category is particularly important for economies that subsidise consumers, as it tends to be the largest category of FFSs by value in those economies.

Table 4.1 Mapping forms of standstill commitments to data availability

Category of FFS	Typical data availability	Amenability to inventory-based commitment	Amenability to value-based commitment
Direct transfer of funds	In domestic accounts. Coverage may be incomplete or aggregated.	Yes, noting estimates may be incomplete or aggregated.	Yes, noting estimates may be incomplete or aggregated.
Induced transfers (price support)	Calculated by comparing customer prices to a free market benchmark.[51] Single point estimates generated by IEA, IMF; limited domestic estimates.	No, consumer subsidies increase and decrease relative to global market prices rather than changes in government policies or measures.	Yes, noting that estimates currently available are generally from international rather than domestic sources. Methodological and data challenges could be significant.
Tax expenditure, other revenue foregone, and under-pricing of goods and services	Some economies estimate tax expenditure and other elements, with coverage varying widely.	Yes, noting that inventories may be incomplete and many inventory items unquantified.	Yes, noting that coverage and quantification can be limited, sometimes severely, and that economies may not have control over the value of tax expenditure items within a particular period.
Transfer of risk	Few FFSs are identified, and few are quantified.	Yes, but little data are typically available.	Little data are typically available.

[51] There are a number of methodological issues involved in generating these estimates.

4.3 Evaluating Whether FFSs Are Inefficient or Lead to Wasteful Consumption

4.3.1 Evaluating Inefficiency

Box 4.2 outlines principles for how to conduct the reviews within the APEC FFSR peer review process. No further definition of "inefficiency" has been developed for APEC, although the voluntary peer review process has created practical experience. For example, the 2014 Peru review assessed three FFSs for their "effectiveness," concluding that two of the FFSs assessed were "ineffective" because they "increased wasteful and inefficient use of fossil fuels." It offered 17 recommendations for their reform.[52] Further considerations about inefficiency have also been made within the G20 Peer Review process and within discussions between its members.

Box 4.2 APEC FFSR Peer Review – Principles[53]

Each economy's progress on rationalising and phasing out inefficient FFSs 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 domestic circumstances:

- **Reforms should reduce wasteful fossil fuel consumption** to improve energy security capabilities and reduce GHG emissions.
- **Reforms should allocate resources efficiently** to improve market efficiency and allow scarce resources to be channelled to uses that are more productive in the long term.
- **Reforms should include policies that target help to those in need of essential energy services.** To support rationalisation of inefficient FFSs, targeted policies should be developed where appropriate to protect the poorest and most vulnerable populations.
- **Reforms should support sustainable economic growth**. Rationalising inefficient FFSs should be done in a way that does not hamper long-term sustainable growth and development and carefully considers macro-economic impacts.

In its guidebook on how self or peer reviews could be undertaken based on a review of experience published in 2017,[54] IISD-GSI made the recommendations shown in Box 4.3. While neither the APEC nor G20 processes have given concrete definitions of inefficiency,

[52] See, for example, the summary in Box 9 of https://www.iisd.org/system/files/publications/guidebook-reviews-fossil-fuels-subsidies.pdf

[53] Taken from Gerasimchuk, I., Wooders, P., Merrill, L., Sanchez, L., & Kiston, L., "A Guidebook to Reviews of Fossil Fuel Subsidies: From Self-Reports to Peer Learning" (IISD, 2017), p.22, https://www.iisd.org/system/files/publications/guidebook-reviews-fossil-fuels-subsidies.pdf. Annex 8 provides further details, with the material having been drawn from two APEC guideline documents: APEC Energy Working Group, "Guidelines on a Voluntary Peer Review for Reform of Inefficient Fossil Fuel Subsidies That Encourage Wasteful Consumption (VPR/IFFSR)" (no date), https://www.ewg.apec.org/documents/FINAL_VPR-IFFSR_Guidelines.pdf and APEC, "Progress on Rationalizing and phasing Out Inefficient Fossil Fuel Subsidies: Proposed Voluntary Reporting Mechanism" (2012/EWG43/043 Agenda Item: 15b) (APEC, 2012), http://www.iisd.org/gsi/sites/default/files/g20lib_apec_2012_volreportmechanism.pdf

[54] Gerasimchuk et al., 2017, supra n. 53.

there is a range of guidelines that can be used by any economy to assess inefficiency within its assessment of FFSs. If no clear, common definition of and criteria for inefficiency are adopted by economies, economies' approaches and actions with respect to FFSR could risk further divergence, and competitiveness or other relative impacts could be exacerbated.

Box 4.3 IISD-GSI recommendations on how to assess "inefficiency" within a peer or self-review

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 an 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 meant to protect vulnerable groups, yet a large share of them is captured by the middle and upper classes of society [55]
- Evaluation of whether alternative policies can meet the same stated policy objectives with more efficiency, 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.

Finally, a wide range of issues and indicators could be applied to the concept of inefficiency. If a standstill on inefficient FFSs is adopted, it will impact partners and stakeholders with respect to energy. Certain measures can ensure that such a standstill is developed and adopted in a way that is consistent with the notion of just transition and that addresses and mitigates the potential negative impacts. A just transition has two main dimensions, including (1) the outcomes of decent work for all, an inclusive society and eradication of poverty and (2) the process of how to achieve these outcomes through meaningful social dialogue at all levels to sure the burden is shared, and no one is left behind.[56]

The International Labour Organization (ILO) Guidelines for a Just Transition provide the guiding principles that are needed for a transition to be just.[57] These principles include the need for strong social consensus on goals and pathways based on social dialogue; respect for rights at work; consideration of gender dimensions; creation of enabling environments; a framework for managing employment issues; flexibility in line with specific local conditions; and fostering international cooperation amongst economies. These principles can be applied to a standstill on inefficient FFSs as part of the standstill development and implementation process.

[55] Coady, D., Gillingham, R., Ossowski, R., Piotrowski, J., Tareq, S., & Tyson, J., "Petroleum Product Subsidies: Costly, Inequitable and Rising" (2010), http://www.imf.org/external/pubs/ft/spn/2010/spn1005.pdf
[56] Galgóczi, B., "Just Transition Towards Environmentally Sustainable Economies and Societies for All" ILO ACTRAV Policy Brief (ILO, 2018), https://www.ilo.org/wcmsp5/groups/public/---ed_dialogue/---actrav/documents/publication/wcms_647648.pdf
[57] International Labour Organization, "Guidelines for a Just Transition Towards Environmentally Sustainable Economies and Societies for All" (2015), https://www.ilo.org/wcmsp5/groups/public/---ed_emp/---emp_ent/documents/publication/wcms_432859.pdf

Impacts of measures on FFSs can be felt amongst both energy producers and consumers. Impacts on both sides of this issue should be considered in the design and implementation of inefficient FFS standstill approaches.

On the producer side, there are potential impacts for workers in the energy sector as well as energy industries. Policy measures for inefficient subsidies can impact the employment of energy workers. Potential opportunities will arise for employment growth in renewables industries (as market barriers created by subsidies are removed), but there is also the potential for job losses in fossil fuel production sectors as inefficient subsidies that may be supporting energy production of fossil fuels are reformed or removed.

For energy consumers, any policies that have the potential to impact prices can lead to impacts on the consumers of that energy. Potential for price increases or fluctuations can lead to impacts on energy poverty (positive or negative) and potential fuel switching to alternative (cleaner or dirtier) energy sources. In low-income communities in particular, the impacts of minor fluctuations in energy prices on the livelihoods of energy consumers have to be carefully considered.

Inefficient FFS policies and approaches can be developed through tripartite processes based on dialogues with labour organizations and employers as social partners to ensure that a standstill development process is in line with a just transition. To ensure that the process is fair to all who are impacted, these dialogues can be combined with inclusive stakeholder engagement processes to involve stakeholders who are not social partners.

4.3.2 Evaluating Wasteful Consumption

IISD-GSI's *A Guidebook to Reviews of Fossil Fuel Subsidies* also examines what is meant by "wasteful consumption." It concludes that wasteful consumption is "untargeted, unnecessary or excessive" and notes that models that simulate FFS removal find significant reductions in energy consumption (typically at least 6% globally). It further notes that "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."[58]

The SDG Indicator 12.c.1 methodology document published by the United Nations Environment Programme in 2019[59] and IISD-GSI's guidebook[60] both also contain materials on scope and definitions, including how to define fossil fuels and subsidies. Working definitions of both are available and are widely recognised—for example, the definition of fossil fuels used by the IEA[61] (other definitions are largely similar) and the definition of subsidies agreed by the WTO's members[62] (currently 164) and used in jurisprudence between them. Nevertheless, the scope and definition of FFSs as used by individual economies in their own considerations can differ widely, as can what economies consider to be efficient (or inefficient) FFSs.

[58] Gerasimchuk et al., 2017, supra n. 53.
[59] United Nations Environment Programme, 2019, supra n. 10
[60] Gerasimchuk et al., 2017, supra n. 53.
[61] IEA. "Energy Statistics–Manual" (Paris, France: IEA, 2005). https://doi.org/10.1787/9789264033986-en
[62] WTO, "Agreement on Subsidies and Countervailing Measures" International Organization § (1994). https://www.wto.org/English/docs_e/legal_e/24-scm.pdf

4.4 Potential Elements of a Standstill Commitment by APEC Member Economies

Table 4.2 lays out the issues that APEC member economies could address within a standstill commitment and the potential elements that could be included within it. Any standstill commitment would be voluntary, and different APEC member economies could use different forms of standstill commitments.

The first five elements refer to context (including previous commitments made under APEC and more widely) and note that APEC member economies could benefit from further identifying and evaluating any inefficient FFSs they may have. The final two elements include the forms of standstill commitments that could apply to *inventory-based* or *value-based* formulations.

Table 4.2 Potential elements of a standstill commitment by APEC member economies

Issue	Potential element
Reference to previous APEC commitments on inefficient FFSs	Including 2009 APEC Leaders Statement, which "acknowledged the importance of rationalising and phasing out over the medium term, fossil fuel subsidies that encourage wasteful consumption,"[63] whose subsequent restatements refers to "inefficient FFSs"; the 2011 Peer Review process; the 2013 APEC Leaders' Declaration which, agreed to build regional capacity to assist APEC economies with this commitment.[64]
Understanding inefficient FFSs in APEC member economies	APEC member economies are encouraged to develop inventories and estimates of inefficient FFSs according to their respective individual definitions of inefficient FFSs. International data can provide initial estimates and recognised definitions of both fossil fuels and FFSs (see Section 5.3).
Evaluating inefficient FFSs in APEC member economies	APEC member economies should evaluate the impacts of their inefficient FFSs using APEC guideline documents and other considerations to assess which of these are classified as being inefficient.
Recognising the challenges to reforming inefficient FFSs, including those directed at poor and vulnerable consumers or activities or sectors of the economy	Reform of inefficient FFSs is best undertaken when adverse impacts on poor and vulnerable consumers or activities or sectors of the economy can be mitigated through other policies and measures that benefit them.
Referring to other commitments made by APEC member economies	Can include the Paris Agreement (UNFCCC); net-zero commitments; SDG Indicator 12.c.1 reporting (voluntary); regional and free trade

[63] APEC, 2009, supra n. 24
[64] APEC, "2013 Leaders' Declaration" (Bali, Indonesia: APEC, 2013). https://www.apec.org/Meeting-Papers/Leaders-Declarations/2013/2013_aelm

	agreements; domestic desire to move towards more sustainable energy systems.
A standstill commitment for inefficient FFSs within inefficient FFS inventories	Do not add further inefficient FFSs to the list in the inventory of subsidies; no extension of inefficient FFSs with expiry dates. Can apply to both quantified and unquantified inefficient FFSs. An end date for reforming all inefficient FFSs could be added, potentially at a later date.[65]
A standstill commitment for inefficient FFSs, which are estimated by value	Set a cap based on the financial value of all (quantified) inefficient FFSs compared to historical year(s) defined by APEC member economies. Can be applied on a disaggregated basis, e.g., capped for each fuel type (which could impose practical difficulties). Baseline could be recalculated if further inefficient FFSs are quantified. Noting that consumer subsidies due to regulated prices are driven primarily by world market prices, a commitment to reform inefficient consumer subsidies, perhaps over a period of time, is an alternative to consider. An end date for reforming all inefficient FFSs could be added, potentially at a later date.[66]

[65] It is noted that Canada, Japan and the United States, along with the other members of the G7, agreed to eliminate inefficient FFSs by 2025 and that the G7 called on all economies to join them under this commitment. While outside the scope of the standstill commitment at present, this commitment could inform any future APEC discussion.
[66] See note 65.

5. Impacts of a Voluntary Standstill on Inefficient Fossil Fuel Subsidies

This section presents an analysis of past trends in the size of all FFSs—efficient and inefficient—among APEC member economies in relation to changes in the international oil prices and existing subsidy measures among APEC member economies. It aims to highlight the potential risks of how APEC member economies could be affected by a standstill commitment on inefficient FFSs.

All data and results presented are based on all FFSs, as there are no data sets that include strictly inefficient FFSs. The data and results are therefore illustrative and may not hold true if only inefficient FFSs were analysed. “All FFSs” is used as shorthand to denote that figures include both efficient and inefficient FFSs.

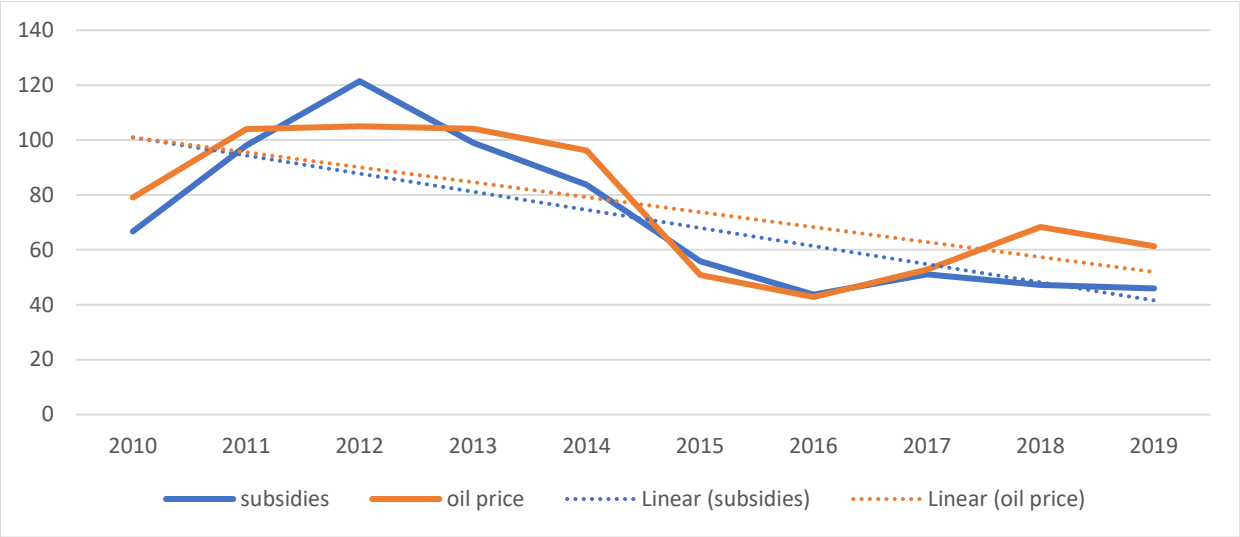
5.1 Correlation Between the Size of All FFSs and Changes in the International Oil Price

The volatility of the international oil price is among the major factors that affect the size of all FFSs. There is a common belief that governments tend to increase FFSs to consumers when the international oil prices are high (to protect consumers from price shocks) and increase FFSs to producers when international oil prices are low (to protect companies from negative price shocks).

Based on data from the Fossil Fuel Subsidy Tracker, most FFSs—efficient and inefficient—among APEC member economies went to consumers (74%) between 2010 and 2019, whereas a smaller share (26%) benefitted producers. Due to the assumption that these two types of FFSs would see different impacts from changes in the international oil price, the correlation between the international oil price[67] and FFSs to consumers as well as FFSs to producers was tested separately. Figures 5.1 and 5.2 are graphical representations of the past trends in FFSs and the international oil price. These figures show that the size of FFSs to consumers among APEC member economies has generally followed the trends of the international oil price, while the size of FFSs benefiting producers has not.

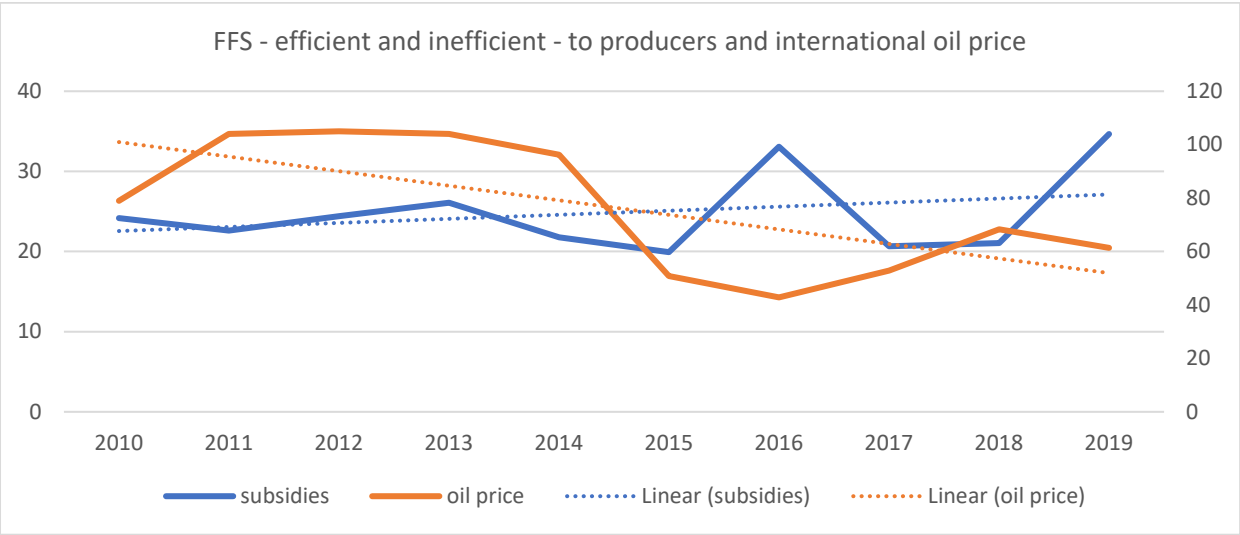
[67] The average of West Texas Index (WTI), Brent Oil Price and Dubai Oil Price between 2010 and 2019 was calculated based on data from the IMF Primary Commodity Prices database, https://www.imf.org/en/Research/commodity-prices

Figure 5.1 Trend of FFSs—efficient and inefficient—to consumers and the international oil price between 2010 and 2019



Source: IMF, "IMF Primary Commodity Prices" (2021), https://www.imf.org/en/Research/commodity-prices; Fossil Fuel Subsidy Tracker, "Country Trends in Fossil-Fuel Subsidies" (n.d.), https://fossilfuelsubsidytracker.org/country/

Figure 5.2 Trend of FFSs—efficient and inefficient—to producers and the international oil price between 2010 and 2019



Source: IMF, "IMF Primary Commodity Prices" (2021), https://www.imf.org/en/Research/commodity-prices; Fossil Fuel Subsidy Tracker, "Country Trends in Fossil-Fuel Subsidies" (n.d.), https://fossilfuelsubsidytracker.org/country/

To statistically test the significance and size of the correlation, the Pearson Correlation Coefficient[68] was measured, and a simple regression[69] analysis was carried out. The results (Table 5.1) show that there is a strong correlation between all consumer FFSs and the global oil price but a weak correlation between all producer FFSs and the global oil price.

Table 5.1 Results of Pearson Correlation Coefficient and simple linear regression

Correlation with global oil prices	Pearson Correlation	Significance Level	Explanation
Consumer subsidies	0.92	0.00018 < 0.05 (α)	There is a **positive** and **strong** correlation between FFSs to consumers and the international oil prices: an increase in oil price correlated in most cases with an increase in FFSs to consumers. The significance level is below α: This means that the **regression model is a good model** and can be used to further analyse the size of the correlation.
Producer subsidies	-0.24	0.51 > 0.05 (α)	There is a **negative** and **weak** correlation between FFSs to producers and the international oil price. The significance level is above α: This means that the **regression model is not statistically significant**.

Source: IMF, "IMF Primary Commodity Prices" (2021), https://www.imf.org/en/Research/commodity-prices; Fossil Fuel Subsidy Tracker, "Country Trends in Fossil-Fuel Subsidies" (n.d.), https://fossilfuelsubsidytracker.org/country/

According to the results (Table 5.2) of the regression, a USD 25 increase in the international oil price per barrel correlated with a USD 25.79 billion increase in FFSs to consumers among APEC member economies (which represents a 27% change in FFSs to consumers); in contrast, the same increase in the international oil price per barrel correlated with a USD 1.25 billion decrease in FFSs to producers (which represents a -5% change in FFSs to consumers). However, the significance level showed that the regression model for FFSs to producers is not statistically significant.

[68] The Pearson Correlation Coefficient is a measure of linear correlation between two sets of data. A correlation is said to be "perfect" if the value of the Pearson Correlation Coefficient is ±1 and "strong" if the value lies between ±0.5 and ±1.

[69] The regression analysis has a 95% confidence level (α = 5%). The model is said to be a good regression model when the significance level is below α (5%).

Table 5.2 Results of the regression analysis

Type of subsidies	Increase in oil price (USD/bbl)	Change in subsidies value (billion USD)	+25% Change in oil price
All consumer FFSs	25	25.79 (increase)	+27% change in subsidies
All producer FFSs	25	-1.25 (decrease)	-5% change in subsidies

Source: IMF, "IMF Primary Commodity Prices" (2021), https://www.imf.org/en/Research/commodity-prices; Fossil Fuel Subsidy Tracker, "Country Trends in Fossil-Fuel Subsidies" (n.d.), https://fossilfuelsubsidytracker.org/country/

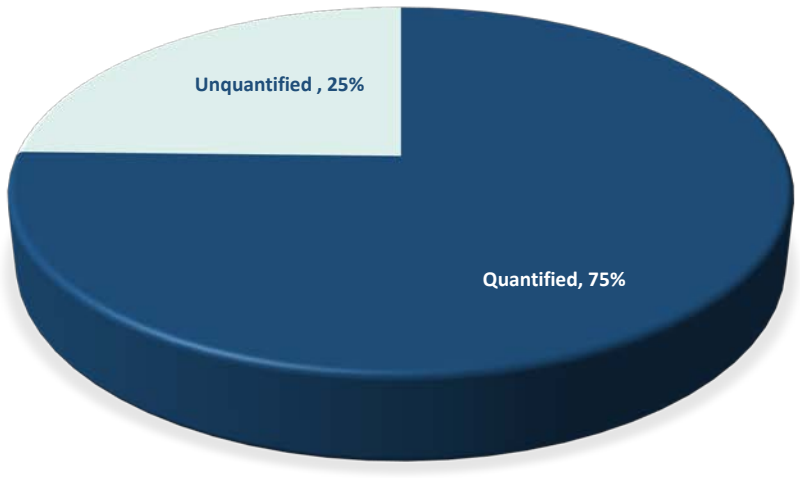
5.2 Analysis of Existing Fossil Fuel Subsidy Measures Among APEC Member Economies

Based on information on the 11 APEC member economies that are covered by the OECD Inventory of Fossil Fuel Support Measures,[70] which includes budgetary transfers and tax expenditures, an analysis of all FFSs measures aimed to find out how many FFS measures are currently still active, quantified and have an automatic end date in the coming years. The analysis identified 199 currently active FFS measures—again which cover both efficient and inefficient measures —among these 11 APEC economies. Of these, 150 FFS measures (75%) are quantified and 49 FFS measures (25%) are unquantified[71] (*Figure 5.3*).

[70] The OECD Inventory is based on fossil fuel support measures rather than fossil fuel subsidies. In practice, differences between the two definitions are marginal, with the OECD inventory including a relatively small quantity of General Services Support Measures that may not be included under an FFSs definition. Given the marginal difference, the two terms are considered to give very similar estimates of the financial value of measures.

[71] Unquantified subsidy measures are those measures whose values have not been estimated yet, for example, as a result of missing data.

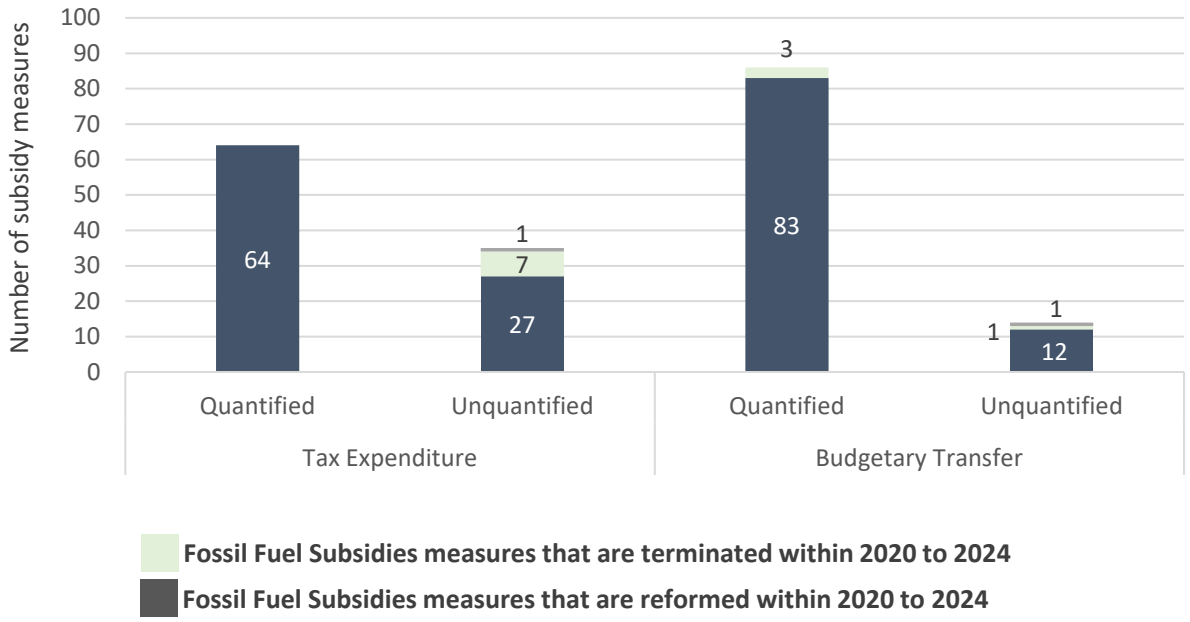
Figure 5.3 Share of quantified and non-quantified FFSs measures of all active FFSs measures—efficient and inefficient—among APEC member economies



Source: OECD, "OECD Stat" (n.d.), https://stats.oecd.org

Further research on end-dates of all active FFS measures identified that 11 measures have plans to be terminated between 2020 and 2024, and two measures are being reformed—by reducing the benefit or the number of beneficiaries—during these years (Figure 5.4). Together, these account for about 6% of all active FFS measures.

Figure 5.4 Number of FFS—efficient and inefficient—measures with sunset clauses or reform dates by type of FFS measure



Source: OECD, "OECD Stat" (n.d.), https://stats.oecd.org

5.3 Summary of the Implications of a Voluntary Standstill on Inefficient FFSs

As demonstrated previously, the size of FFSs has followed changes in the international oil prices closely in the past, especially with regards to FFSs to consumers. In Section 5.1, we saw an increase of USD 25 in oil price/barrel would be expected to increase consumer subsidies in APEC economies by USD 25.79 billion (a 27% upward change) and to decrease producer subsidies by USD 1.25 billion (a 5% downward change). If global oil prices were to increase, a voluntary standstill on inefficient FFSs would limit APEC member economies' options to increase their inefficient FFSs, as they would be precluded from adjusting the size of inefficient FFSs as much as they may otherwise wish to. A standstill would reduce the possible increase of allocation of public funds but would decrease price stability to consumers, as a larger share of the volatility of world price changes would be passed onto them.

Impacts associated with sunset clauses of existing inefficient FFS measures under a voluntary standstill on inefficient FFSs can be considered as comparably low, as only a small share of existing FFS measures with such elements were identified as being in the process of sunsetting. A relatively small reduction in GHG emissions and associated climate, environmental and social impacts can also be expected from the automatic phase-out of such measures under a standstill.

The emission reductions from a standstill of inefficient FFSs would be a share of what would come from the reform or all efficient and inefficient subsidies. The impacts of a standstill commitment are difficult to quantify and depend on a range of assumptions. First among these is the type of commitment (as per the options presented in section 4.1). Second, there are no data sets covering inefficient FFSs, and therefore this analysis has been based on the inventories of all FFSs from three major IGOs—the IEA, the IMF and the OECD—with modelling (and its inherent assumptions) from studies by IISD-GSI. Furthermore, the impact of a standstill commitment would depend on unknowns, notably APEC member economies' plans to introduce new inefficient FFSs, changes in world fuel prices (notably for oil) and how many economies take on the commitment.[72] Results are therefore illustrative or indicative only and would be improved by further analysis and modelling.

Noting these assumptions and uncertainties, the study shows that, based on past relationships between all FFSs and the global oil price,[73] an increase in the global oil price of USD 25/barrel would be expected to increase all FFSs in the APEC region by USD 24.5 billion (adding approximately one third to the average total of all FFSs within APEC member economies in the period 2015–2019[74]). Were this FFS increase to be avoided, we could expect annual CO_2 savings of around 49 $MtCO_2$ and roughly 437 $MtCO_2$ in reductions cumulatively during the nine-year period 2022–2030. Higher oil price increases would increase these figures, with lower oil prices decreasing them. The share of these savings that could be realised by a standstill commitment would further depend on how many APEC member economies were in a position to, and chose to, make the commitment; what share of FFSs were classed as

[72] Ideally, such a commitment would be made globally so that any competitiveness impacts between economies would be reduced. APEC member economies represent around 21% of global FFSs, therefore a standstill commitment covering only APEC economies would alter competitiveness between APEC economies and the rest of the world.
[73] Based on modelled emission reductions by 2030 through the removal of all FFSs among the nine APEC economies covered by the IISD-GSI study referenced in Section 1, a USD 1 billion reduction of FFSs would lead to an emission reduction of about 1.98 $MtCO_2$.
[74] The average for the period 2015–2019 for all subsidies —efficient and inefficient —was USD 74.63 billion.

inefficient; and the impact of unquantified inefficient FFSs, which constitute approximately one quarter of all FFSs in APEC member economies at present.