Phasing Out Fossil Fuel Subsidies in the G20:

Progress, Challenges, and Ways Forward

Henok Birhanu Asmelash

ICTSD

International Centre for Trade
and Sustainable Development

Think Piece

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LIST OF ABBREVIATIONS

APEC	Asia-Pacific Economic Cooperation
ASCM	Agreement on Subsidies and Countervailing Measures
COP21	21st Conference of the Parties to the UNFCCC
CTE	Committee on Trade and Environment
ECM WG	Energy and Commodity Markets Working Group
ESWG	Energy Sustainability Working Group
FFFSR	Friends of Fossil Fuel Subsidy Reform
FFSR	fossil fuel subsidy reform
FTA	free trade agreement
G7	Group of Seven
G20	Group of Twenty major economies
GSI	Global Subsidies Initiative
IEA	International Energy Agency
IMF	International Monetary Fund
NALS	North American Leaders' Summit
OCI	Oil Change International
ODI	Overseas Development Institute
OECD	Organisation for Economic Co-operation and Development
OPEC	Organization of the Petroleum Exporting Countries
SDG	Sustainable Development Goal
TPRM	Trade Policy Review Mechanism
UNFCCC	United Nations Framework Convention on Climate Change
WEO	World Energy Outlook
WTO	World Trade Organization

FOREWORD

This year marks the second anniversary of governments convening in France to negotiate the Paris Agreement on climate change. The accord constitutes a landmark for climate action and, along with the Sustainable Development Goals, endorses a more sustainable future.

However, only two years after the signing of the agreement, important dynamics are challenging the global community's efforts to reach the targets enshrined in the Paris Accord and the 2030 Agenda for Sustainable Development. First and foremost, the decision by the United States, the world's second largest emitter, to withdraw from the Paris Agreement strains the multilateral approach to climate action and leaves the question open whether the international community will be able to reach its self-imposed targets.

This is an unfortunate development, but also a sign that climate action is needed more than ever. Climate change is happening and economic, environmental and social costs will rise exponentially if not acted upon. It is thus the responsibility of governments and in particular the largest emitters to reduce emissions to a level that keeps the increase in global average temperature well below 2 degrees.

One way to do so is through phasing out subsidies to fossil fuels – the largest source of greenhouse gas emissions. Fossil fuel subsidies reform is often considered to be the "low-hanging" fruit to climate action and in 2009 the G20 already committed to phasing out inefficient fossil fuel subsidies. Yet, despite constant reaffirmations to the commitment, members continue to subsidise the exploration, processing and use of fossil fuels.

It is against this background that ICTSD, through a series of analytical papers and dialogues, seeks to explore options for the G20 to further concrete action on phasing out fossil fuel subsidies. As part of this endeavour, Henok Birhanu Asmelash authored the present paper on the progress and challenges related to implementing the G20 commitment and what can be done to strengthen implementation.

This think piece is part of a research project carried out by ICTSD with the generous support of the KR Foundation. The analysis builds on a scoping exercise in the form of a background paper and a series of dialogues, notably an event with trade delegates which took place in June 2017 in Geneva. It will inform the continuation of the project, which aims at identifying an agenda on trade and climate change for the G20.

Ricardo Meléndez-Ortiz
Chief Executive, ICTSD

EXECUTIVE SUMMARY

Fossil fuel subsidies are prevalent around the world. Recent estimates from international organisations put the total value of global fossil fuel subsidies at between US$325 billion and US$5300 billion per year. These subsidies are widely considered to be both economically inefficient and environmentally harmful. From an economic perspective, they impose heavy burden on government budgets and crowd out public spending on other priorities, such as health and education. From an environmental perspective, they encourage the over-extraction and wasteful consumption of fossil fuels--the primary source of greenhouse gas emissions. They also impede the transition towards clean energy by undermining the competitiveness of renewable energy, and thereby diverting investment away from renewable energy sources.

There is now a widespread recognition that fossil fuel subsidies constitute a major obstacle to tackling climate change and achieving sustainable development. This recognition is reflected in various intergovernmental agreements, including the Paris Agreement on climate change and the UN 2030 Agenda for Sustainable Development. The G20 is, however, the first intergovernmental forum not only to recognise the adverse economic and environmental effects of fossil fuel subsidies, but also to commit to reducing or ending those subsidies. The 2009 G20 Summit in Pittsburgh committed G20 countries to phase out inefficient fossil fuel subsidies over the medium term. Despite this landmark commitment, however, such subsidies remain significant within the group.

The objective in this paper is to examine the nature and scope of the commitment, reflect on the implementation measures taken so far, and suggest some ways forward. The window of opportunity for fossil fuel subsidy reform created by recent developments--such as the adoption of Agenda 2030 (Sustainable Development Goals), the entry into force of the Paris Agreement, and the sharp drop in global oil prices--make the inquiry all the more pertinent and timely.

The paper is organised around the following three questions:

What is the scope of the commitment? The scope of the G20 commitment is generally limited to inefficient fossil fuel subsidies that encourage wasteful consumption. However, neither the Pittsburgh Summit nor subsequent G20 Summits clarified what constitutes an “inefficient fossil fuel subsidy” or “subsidies” in general. The ensuing ambiguity over the scope of the commitment is further complicated by the lack of clear implementation timelines. This means that individual G20 members decide for themselves not only what they consider to be inefficient fossil fuel subsidies, but also when to phase them out.

What has been done so far? Ever since the Pittsburgh Summit, phasing out fossil fuel subsidies has been high on the G20 agenda. All subsequent G20 Summits have, at least, emphasised the need to implement the commitment. Some of these Summits have also taken additional steps to implement the commitment. The four major implementation measures taken thus far include: preparing national implementation strategies and timelines; establishing a self-reporting mechanism; forming a voluntary peer-review process; and commissioning studies on the scope and impacts of fossil fuel subsidies. This paper has examined the benefits and limitations of these measures and found that they are inadequate at best.

What more needs to be done? Given the continued presence of fossil fuel subsidies and the shortcomings of the implementation measures taken so far, the final section of the paper focuses on policy options that would advance fossil fuel subsidy reform within the G20. In this respect, the paper presents policy options and recommendations ranging from i) clarifying the scope of the commitment by removing the vague terminology and defining fossil fuel subsidies; ii) to enhance transparency; iii) setting a clear deadline for eliminating fossil fuel subsidies; and iv) taking advantage of the G20’s position in global governance to advance fossil fuel subsidy reform in countries outside the group.

Recommendations and Policy Options

Recommendations	Policy Options
The G20 should define the scope of subsidies covered by the commitment	- Avoid the use of vague terms such as "inefficient" and "wasteful consumption"; - Adopt a common definition of "subsidy"; - Set out specific and limited exceptions for well-targeted subsidies to the poor and most vulnerable.
The G20 should set clear implementation timelines	- Impose a standstill on new fossil fuel subsidies with carefully defined exceptions; - Set clear and definitive deadlines for phasing out existing fossil fuel subsidies; or - Set different deadlines depending on the types of subsidies, their effects, and the capacity of countries to undertake subsidy reforms.
The G20 should enhance transparency on fossil fuel subsidies	- Introduce mandatory annual reporting of progress in reforming fossil fuel subsidies; - Develop a standard reporting template; - Notify fossil fuel subsidies under the Agreement on Subsidies and Countervailing Measures (ASCM) and the United Nations Framework Convention on Climate Change (UNFCCC); - Use the cross-notification mechanism of the WTO's ASCM; - Strengthen the ASCM notification procedure; - Add a section on fossil fuel subsidies to trade policy review reports of the WTO Trade Policy Review Mechanism (TPRM).
The G20 should request the resubmission of national implementation strategies and timeframes	- Revise national implementation strategies and timeframes in accordance with the newly agreed subsidy definition and timelines; - Authorise the Energy Sustainability Working Group (ESWG) to examine the compliance of national implementation strategies and timeframes with the newly agreed definitions and timelines before approval by the G20 Summit.
The G20 should provide global leadership on fossil-fuel subsidy reform (FFSR)	- Set high standards for phasing out fossil fuel subsidies; - Provide capacity building and technical assistance to developing countries; - Add FFSR commitments to free trade agreements (FTAs) akin to the EU-Singapore FTA; - Join forces with the Friends of Fossil Fuel Subsidy Reform (FFFSR) and other relevant groups in order to bring the fossil fuel subsidy issue to the greater attention of the WTO and to aim for one of the following: (i) Ministerial decision banning environmentally harmful fossil fuel subsidies; (ii) Ministerial decision mandating the WTO to tackle fossil fuel subsidies; (iii) Ministerial Declaration condemning the use of fossil fuel subsidies; (iv) Joint communiqué with the FFFSR and APEC calling for action to phase out fossil fuel subsidies in the WTO.

1. INTRODUCTION

> *Energy subsidies are enormous in scale, and they help the people who need them least. Taking action on this issue alone would be good for the budget, good for the economy, and good for the planet.*
>
> Christine Lagarde, 2013

As of 30 June 2017, 151 countries have ratified the Paris Agreement on climate change, affirming their commitment to reduce greenhouse gas emissions to a level that would keep the increase in global average temperature well below 2 degrees and to strive for a limit of 1.5 degrees above pre-industrial levels (UNFCCC 2016).[1] Achieving these targets will require the fundamental restructuring of the global energy system, which currently generates around two-thirds of total greenhouse gas emissions (IEA 2016a; McGlade and Ekins 2015). The fact that fossil fuel combustion accounts for over 90 percent of these emissions has prompted interest in policy instruments that would accelerate the transition away from fossil fuel dependency (IEA 2015a). One such policy instrument that has gained considerable attention in recent years is fossil fuel subsidy reform (FFSR). Recent estimates of global fossil fuel subsidies range from US$325 billion (IEA 2016b) to US$5300 billion (Coady et al. 2017) annually, depending on how "subsidies" are defined and measured. Studies have long established the adverse economic and environmental impacts of these subsidies (and the potential benefits of their reform) (see, e.g., Burniaux and Chateau 2014; Larsen and Shah 1992; Clements et al. 2013).

Fossil fuel subsidies harm the environment by encouraging the over-extraction and wasteful consumption of fuels and undermining the competitiveness of renewable energies. They also drain public funds away from pro-poor public services, such as educaton and health care. Their continued existence will lock the world into decades of fossil fuel depedency and unsustainability (Erickson 2015). While countries have been (and, to some degree, remain) reluctant to move away from subsidising fossil fuels, there is growing consensus on the need to phase out these economically inefficient and environmentally harmful practices. This consensus is most evident in intergovernmental efforts to gradually withdraw fossil fuel subsidies (Asmelash 2017). The G20 is at the forefront of these intergovernmental efforts. Fossil fuel subsidies have been high on the G20 agenda ever since the 2009 Summit in Pittsburgh, where the G20 leaders committed to "rationalize and phase out over the medium term inefficient fossil fuel subsidies that encourage wasteful consumption" (G20 2009). Almost eight years have passed since then, but a large gap remains between their commitment and their action towards phasing out fossil fuel subsidies (Bast et al. 2015). Though the pledge has been reiterated at each subsequent summit (see Annex 1), fossil fuel subsidies remain high within the G20, and some countries, including the United Kingdom, have even introduced new fossil fuel subsidies since then (Bast et al. 2015; Gerasimchuk et al. 2017; Whitley et al. 2017). A recent study by the Overseas Development Institute (ODI) and Oil Change International (OCI) estimated that G20 countries spent (through direct spending and tax breaks alone) an average of US$78 billion per year on fossil fuel production subsidies in 2013 and 2014 (Bast et al. 2015).[2] In the wake of the Paris Agreement, the continued subsidisation of fossil fuels has prompted renewed and intensified calls for the G20 to walk the talk and deliver on its promise by setting clear timelines (OCI 2016; ODI 2017; V20 2017). However, the G20 has yet to respond to these calls. At the latest G20 Summit in Hamburg, the G19 (the G20 minus the United States) reaffirmed their resolve to fully

1 All the G20 countries, except Russia and Turkey have ratified the Agreement. Though the United States has recently announced its decision to withdraw from the Paris Agreement, the country will remain bound by the Agreement through at least 2020 (see Bodansky 2017; UNFCCC 2016, Article 28).

2 Another recent study by a group of international NGOs found that the G20 countries are spending nearly four times more public finances on fossil fuels than on clean energy (OCI et al. 2017).

implement the Paris Agreement by adopting a detailed Climate and Energy Action Plan (G20 2017a). However, the fossil fuel subsidy section of the Action Plan failed to go beyond reiterating the commitment and calling for participation in the voluntary peer-review process.

It is against this background that this paper sets out to examine the G20's initiative to phase out fossil fuel subsidies. The paper aims to contribute to efforts to strengthen intergovernmental initatives to end fossil fuel subsidies by analysing the scope of the G20's commitment, examining factors hindering its implementation, and exploring policy options for the way forward. To achieve this, the paper is organised around three questions. What is the scope of the commitment? What has been done so far to implement the commitment? And, what more needs to be done?[3] Section two responds to the first question by analysing the relevant parts of the G20 declarations. The aim here is to highlight the nature and types of fossil fuel subsidies covered by the commitment. In response to the second question, section three reviews measures taken so far by the G20 to implement the commitment. Since the commitment was made in 2009, the G20 has taken some implementation measures. This section identifies four of these measures and discusses their contributions and limitations. Section four then asks what more the G20 can do to turn the political commitment into practical action. Based on the analyses in the preceding sections, this fourth section presents a range of recommendations and policy options available to the G20 to improve the implementation of the commitment. The recommendations include clarifying the scope of the commitment, setting clear implementation timelines, revising national implementation strategies, and enhancing transparency. Although these recommendations are specific to the G20 initiative, some of them equally apply to other intergovernmental initiatives to reduce fossil fuel subsidies (e.g. G7, APEC). The fifth and final section of the paper summarises the discussion in a set of concluding remarks.

3 These questions are adapted in part from a 2010 GSI policy brief (GSI 2010a).

2. THE SCOPE OF THE G20 SUBSIDY REFORM COMMITMENT

The Pittsburgh Summit of 2009 marked the turning point for intergovernmental efforts to phase out fossil fuel subsidies. It produced the first intergovernmental agreement that explicitly recognised the adverse environmental impacts of fossil fuel subsidies and committed countries to phase out inefficient fossil fuel subsidies.[4] In addition, the Summit induced the proliferation of intergovernmental agreements to phasing out fossil fuel subsidies (Asmelash 2016; Lang 2011). Several non-binding intergovernmental agreements touching on the issues of fossil fuel subsidies have been concluded since then in multiple fora, ranging from the Asia-Pacific Economic Cooperation (APEC) to the United Nations. Most G20 countries are parties to one or another of these agreements (see Table 1). This means that their commitment to phase out fossil fuel subsidies stems not solely from the G20 agreements, but also from other intergovernmental agreements and initiatives. For example, the Paris Agreement obliges parties to "[make] finance flows consistent with a pathway towards low greenhouse gas emissions and climate resilient development" (UNFCCC 2016, Article 2.c). Subsidising fossil fuels goes against the spirit of this obligation to the extent that it diverts financial flows away from renewable energy sources. Their commitment also stems from the 2030 Agenda for Sustainable Development to which all G20 countries committed themselves in 2015 (UN 2015a). Moving away from inefficient fossil fuel subsidies is one of the main targets of Sustainable Development Goal 12 (on ensuring sustainable consumption and production patterns). The adoption of these two legal instruments has added much more credibility and weight to the G20's non-binding commitment. The universality of Agenda 2030 and the legal binding of the Paris Agreement mean that reforming fossil fuel subsidies is no longer a matter of free choice for the G20 countries--it is an integral part of their commitment to sustainability and combating climate change.

The G20 countries' core commitment to phase out fossil fuel subsidies originally stems from the outcome document of the Pittsburgh Summit--that is, the Pittsburgh Declaration. The *Pittsburgh Declaration* acknowledges that "inefficient fossil fuel subsidies encourage wasteful consumption, distort markets, impede investment in clean energy sources and undermine efforts to deal with climate change." It is in recognition of these adverse economic and environmental effects that the G20 countries committed to phasing out inefficient fossil fuel subsidies. The relevant part of the Pittsburgh Declaration reads that:

> Many countries are reducing fossil fuel subsidies while preventing adverse impact on the poorest. Building on these efforts and recognizing the challenges of populations suffering from energy poverty, we commit to: *Rationalize and phase out over the medium term inefficient fossil fuel subsidies that encourage wasteful consumption*. As we do that, we recognize the importance of providing those in need with essential energy services, including through the use of targeted cash transfers and other appropriate mechanisms. This reform will not apply to our support for clean energy, renewables, and technologies that dramatically reduce greenhouse gas emissions [...]. (emphasis added; G20 2009, para 29)

4 Intergovernmental concerns about the adverse environmental impacts of fossil fuel subsidies predate the establishment of the G20. FFSR was discussed during the Kyoto Protocol negotiations as one of the policy measures that countries may take to comply with their quantified emission reduction commitments (Depledge 2000). Although these discussions did not result in a specific commitment on fossil fuel subsidies, they led to the inclusion of the '[p]rogressive reduction or phasing out of […] subsidies in all greenhouse-gas-emitting sectors' in the indicative list of emission reduction policies and measures' (UNFCCC 2005, Article 2.1.a.v). As subsidies to one of the most greenhouse-gas-emitting sectors, fossil fuel subsidies undoubtedly fall under this provision. Yet, the lack of obligation to implement any of the policies and measures in the indicative list meant that FFSR received much less attention than it deserves as a policy instrument to implement the Kyoto Protocol. Serious attention was given to FFSR only in the aftermath of the 2009 G20 Summit (Asmelash 2016).

The italicised part is of utmost importance to understanding the scope of the commitment. The most notable aspect of the commitment is that it is not a commitment to phase out all forms of fossil fuel subsidies. The fossil fuel subsidies agreed to be phased out are those that are "inefficient" and promote wasteful energy consumption.

There were some early confusions as to whether the commitment covers both producer and consumer subsidies. The reference to subsidies that "encourage wasteful consumption" has led some to suspect that the scope of the commitment is limited to consumer subsidies. Since consumer subsidies are more prevalent in emerging economies such as China and India, leaving producer subsidies outside the scope of the commitment would have rendered the commitment one-sided (Horgan 2010). However, such confusions were cleared when G20 countries included both consumer and producer subsidies in their national implementation strategies. It is now well-established that the commitment is to phase out both producer and consumer subsidies that are inefficient and encourage wasteful consumption.

Nevertheless, what counts as an "inefficient fossil fuel subsidy that encourages wasteful consumption" is nowhere defined. Nor are there commonly agreed guidelines to determine whether a given subsidy is inefficient or otherwise. In their joint report to the 2010 G20 Summit, the International Energy Agency (IEA), Organization for Economic Co-operation and Development (OECD), Organization of Petroleum Exporting Countries (OPEC), and the World Bank (jointly referred to as IGO-4) prepared a checklist for identifying inefficient fossil fuel subsidies, but the G20 has never officially adopted the checklist (IEA et al. 2010).[5] This has left each G20 country to determine not only what it considers to be a fossil fuel subsidy but also which fossil fuel subsidies are "inefficient" and "encourage wasteful consumption." There is no doubt that these terms were used to narrow the scope of the commitment or even permit some exceptions (Lang 2011; Aldy 2017). Their vagueness, however, leaves too much flexibility, making it too easy for the G20 countries to evade their commitments. For example, the efficiency of a policy instrument is measured in terms of its contribution to the policy objective pursued through the use of that instrument (Tanzi 1998). With no restrictions as to the purpose for which they may use fossil fuel subsidies, and insofar as the subsidies in question contribute to whatever objective they are intended for, G20 countries can always argue that their subsidies are not inefficient.

The commitment has two explicit carve-outs. One is the exception for targeted support to poor households and other vulnerable groups. This exception acknowledges the importance of providing those in need with essential energy services (G20 2009). It allows G20 countries to provide support for poor households through the use of targeted cash transfers and other appropriate mechanisms. However, it is worth noting that although governments usually justify fossil fuel subsidies on the grounds of providing for the poors' access to affordable modern energy services, fossil fuel subsidies are often inadequately targeted and disproportionally benefit wealthier segements of society (IEA et al. 2010).[6]

The second carve out is for renewable energy and energy efficiency technologies, as we saw above. That second limb of the exception is important. For example, it provides a shelter for R&D subsidies for energy efficiency technologies which may be categorised as inefficent fossil

5 According to the joint report, identifying which specific fossil fuel subsidies are both inefficient and encouraging of wasteful consumption from among the variety of fossil fuel subsidies requires not only understanding the circumstances of each country, but also analysing the impact of the subsidy on consumption (IEA et al. 2010).

6 The IMF estimated that the richest 20 percent of households in low- and middle-income countries receive 43 percent of total fossil fuel consumption subsidies, while the poorest 20 percent receive only seven percent. This is mainly because general consumption subsidies benefit mostly those who consume the most of the subsidised item, and energy consumption is directly related to income levels (Bauer et al. 2013) (see also Coady et al. 2010; Del Granado et al. 2010; OECD 2016).

fuel subsidies, despite their environmental contributions. However, the exception for renewable energy subsidies is redundant at best. Subsidies to renewables are excluded by default, as they cannot be considered as fossil fuel subsidies.

Another important aspect worth considering is the proposed implementation timeframe. The Pittsburgh Declaration commits G20 countries to phase out inefficient fossil fuel subsidies *over the medium term* without defining what the "medium term" means. The Seoul Summit further clarified the timeframe by stating that the commitment is to be met "with timing based on national circumstances" (G20 2010b). This means that the commitment has no definite timelines.

Table 1. G20 countries' FFSR commitments

G20 Countries	Intergovernmental fora & FFSR Commitments							
	G20[7]	G7[8]	NALS[9]	UNFCCC		APEC[10]	United Nations	
				Kyoto Protocol[11]	Paris Agreement[12]		Addis Ababa Action Agenda[13]	Agenda 2030 for Sustainable Development[14]
Argentina	x				x		x	x
Australia	x			x	x	x	x	x
Brazil	x				x		x	x
Canada	x	x	x	x*	x	x	x	x
China	x				x	x	x	x
France	x	x		x	x		x	x
Germany	x	x		x	x		x	x
India	x				x		x	x
Indonesia	x				x	x	x	x
Italy	x	x		x	x		x	x
Japan	x	x		x	x	x	x	x
South Korea	x				x	x	x	x
Mexico	x		x		x	x	x	x
Russia	x			x*		x	x	x
Saudi Arabia	x				x		x	x
South Africa	x				x		x	x
Turkey	x						x	x
United Kingdom	x	x		x	x		x	x
United States	x	x	x		x*	x	x	x
European Union	x	x		x	x		x	x

Source: compiled by the author

7 G20 (2009)
8 G7 (2016)
9 NALS (2016)
10 APEC (2009)
11 UNFCCC (2005)
12 UNFCCC (2016)
13 UN (2015a)
14 UN (2015b)

3. WHAT HAS THE G20 DONE SO FAR? PROGRESS AND LIMITATIONS

Since the Pittsburgh Summit in 2009, the G20 has taken some important steps to translate the political commitment into practical action. This section reviews four of these steps and highlights their contributions and limitations.

3.1 Implementation Strategies and Timeframes

The Pittsburgh Summit tasked G20 Energy and Finance Ministers to develop implementation strategies and timeframes based on their national circumstances and to report back at the next Summit. A working group of energy and finance officials[15] was accordingly established to coordinate the development of national implementation strategies and to oversee the implementation of the commitment. Initial discussions within the working group were directed towards defining the scope of the commitment. However, having failed to agree upon a common subsidy definition, the working group preserved the discretion of individual countries to use their own definition and understanding (Casier et al. 2014; Lang 2011).

The presence of this unfettered discretion allows countries to freely "choose which subsidies to focus reform efforts on, without closing the door to incorporating additional subsidies for reform in [the] future" (Lang 2011). But, it also enables the reluctant countries to circumvent the commitment easily. This was clearly reflected in the national implementation strategies and timelines submitted to the Toronto Summit in June 2010 (see Annex 2). Only 13 of the 20 G20 countries submitted their strategies and timelines (G20 2010c). The remaining seven countries, namely, Australia, Brazil, France, Japan, Saudi Arabia, South Africa, and the United Kingdom, reported that they have no inefficient fossil fuel subsidies that encourage wasteful consumption (G20 2010c).[16] Most of these countries alleged to have no fossil fuel subsidy that falls within the scope of the G20 commitment, by defining subsidies as narrowly as possible. For example, the UK reported not to have any inefficient fossil fuel subsidy by defining fossil fuel subsidies as "government action that lowers the pre-tax price to consumers to below international market levels" (Freedom of Information Request FOI 2015/15308). This definition excludes, for example, the various forms of support that the UK provides to fossil fuel production, which is estimated at $9 billion per year on average (Bast et al. 2015).

Other countries behaved similarly. Saudi Arabia defines fossil fuel subsidies in such a way that it excludes the vast amount of subsidies it provides for fossil fuel consumers by setting domestic oil prices below international prices. Consumer subsidies are commonly estimated based on the price-gap approach, whereby the difference between domestic prices (adjusted for transportation and distribution costs) and world prices (i.e. prices that would prevail in a competitive market) are multiplied by the volume of energy consumed in the analysed period. Subsidies exist so long as domestic prices are lower than world prices. However, according to Saudi Arabia, the fact that domestic prices are below world prices reflects the comparative advantage of the country, not the existence of a subsidy (G20 2010a). For Saudi Arabia, subsidies exist only to the extent that domestic prices are below production costs.[17] This definition ignores the opportunity cost of keeping domestic prices below international prices and the domestic pricing policies behind it (see also Koplow

15 The Energy and Commodity Markets Working Group (ECM WG) was in charge of the fossil fuel subsidy issue before it was taken over by the Energy Sustainability Working Group (ESWG).

16 Their stance has not changed since then, despite fossil fuel subsidy estimates from international organisations showing the contrary (see G20 2015; IEA 2015b).

17 Saudi Arabia also considers subsidies to be efficient insofar as "there is no cost to the government that outweighs the social and economic benefits of the pricing mechanism, leading to wasteful rather than natural growth in consumption, and that these benefits, […] cannot be provided by equally effective ways or by use of available alternative sources of energy" (G20 2010a).

2012). Keeping domestic prices below export prices (known as "dual pricing") is a widespread practice in fossil fuel exporting countries and has been the subject of discussion in the multilateral trading system since the early 1980s (Lang et al. 2010).

Even those countries that reported having at least one fossil fuel subsidy to reform listed only a handful of the many subsidies they have (Koplow 2012).[18] The IEA estimated that Russia, India, and China spent an average of US$34, US$21 and US$19 billion, respectively, on fossil fuel consumption subsidies in 2009 (IEA et al. 2010), but they reported subsidies worth much less than this conservative estimate. It is worth noting here that the IEA estimates represent a lower bound for government support to the fossil fuel industry as they do not capture production subsidies and consumption subsidies that do not affect fuel prices (Koplow 2009).

The national implementation strategies also failed to establish clear timeframes for phasing out inefficient fossil fuel subsidies. Of the 13 countries that reported to have at least one inefficient fossil fuel subsidy, only Canada, Germany, and South Korea set specific timeframes for phasing them out (G20 2010a). The United States set timeframes that are subject to the passing of an enabling legislation by the US Congress, but the latter has, so far, consistently refused to act (China et al. 2016). Argentina, China, Indonesia, Mexico, and Russia set vague implementation timeframes, while India, Italy, and Turkey set no timeframes at all.[19] In the absence of clear country-specific timeframes for phasing out inefficient fossil fuel subsidies, the vague "medium term" remains the default implementation timeline.

3.2 Voluntary Self-Reporting

The Toronto Summit created a voluntary process of self-reporting on inefficient fossil fuel subsidies to help monitor compliance and optimise the effectiveness of the implementation strategies (G20 2010c). This meant that member countries must submit a periodic report on their progress towards identifying and reforming fossil fuel subsidies. The self-reporting process partly addresses the lack of mechanisms for proper compliance monitoring. It also adds transparency to the reform process. However, only progress reports to the Los Cabos (G20 2012b) and Antalya (G20 2015) Summits are publicly available at the time of writing. The seven countries that listed no inefficient fossil fuel subsidies in their original submissions have maintained their stance in both reports. Progress reports from most of the remaining 13 countries focus only on measures they have taken to phase out the subsidies listed in their original submissions. No country has identified or listed additional inefficient fossil fuel subsidies. Some countries have also failed to report altogether. For example, China has submitted no progress report to the Los Cabos and Antalya Summits, while Indonesia and South Korea have not reported to the latter (G20 2012b, 2015). In its progress report to the Antalya Summit, Russia claimed that it no longer had inefficient fossil fuel subsidies to reform (G20 2015). This is despite the fact that the country spent US$30 billion on fossil fuel consumption subsidies in 2015 (IEA 2016b) and US$23 billion on fossil fuel production subsidies in 2013 and 2014 (Bast et al. 2015). Although Russia may argue that these subsidies fall outside the scope of its commitment, it seems surprising that none of these subsidies are considered to be "inefficient" or leading to "wasteful consumption."

3.3 Voluntary Peer-Reviews

Once it became apparent that the voluntary self-reporting process could not induce compliance without accountability and transparency, the 2012 Los Cabos Summit tasked the G20 finance ministers to "explore options for a voluntary peer review process" (G20 2012b). The finance ministers subsequently developed a framework

18 The national implementation strategies reveal significant inconsistencies among G20 countries over what constitutes a fossil fuel subsidy and what makes a subsidy inefficient (see Koplow 2012).

19 Argentina, China, and Indonesia pledged to gradually phase out their listed subsidies, while Mexico reported its plan to phase out inefficient fossil fuel subsidies in the medium term (see G20 2010a, 2012a).

for voluntary peer reviews, which would “allow each country under review wide freedom to define how the review is conducted and with which peer-review country partners” (GSI 2016). The process is initiated by two countries submitting themselves for review. They typically sign terms of reference, which, among other things, determine the scope of review, set up review teams, and establish the procedures for the peer review. The two countries then prepare their own self-report, describing the measures that they are submitting for review. These reports form the basis for the peer reviews. The process culminates with the preparation and publication of final peer-review reports (see Annex 3).

China and the United States were the first pair of G20 countries to undertake reciprocal peer reviews of their inefficient fossil fuel subsidies.[20] Their peer review reports were completed and published online in 2016. Peer reviews for Germany and Mexico are currently undergoing, while Indonesia and Italy have agreed to participate in the next round of peer reviews.

The United States self-identified 16 “inefficient” subsidies benefiting mainly the upstream exploration, development, and extraction of fossil fuels (China et al. 2016).[21] Some of the largest fossil fuel subsidies were the expensing of intangible drilling costs for oil and natural gas producers ($1.6 billion), tax deduction for domestic manufacturing of fossil fuels ($1.05 billion), and percentage depletion for oil and natural gas wells ($0.97 billion) (China et al. 2016). Six of the 16 subsidies nominated by the United States for peer review were additional subsidies that were not previously reported. The peer review team also identified additional subsidies un-reported by the United States (e.g. subsidies for the bulk transportation of fossil fuels by rail and barges), but the United States maintained that they fell outside of the definition of a subsidy in the peer review’s terms of reference.

China’s peer review report, by contrast, lists nine subsidies benefiting activities ranging from upstream production and refining to power and heat generation to downstream commercial and residential end use (United States et al. 2016). Some of the subsidies self-identified by China were: a consumption-tax policy of “refund after payment” for refined oil produced by oil (gas) field enterprises for own use; land-use tax exemption for public enterprises; consumption-tax exemption for oil consumed by refined oil manufacturing enterprises for own use; VAT exemption for heating fees of heat-supply enterprises for individual residents; real-estate tax and urban land-use tax exemptions for heat-supply enterprises; and preferential tax-rate policies of value-added tax on coal gas and liquefied petroleum gas used in the residential sector. Estimates were provided only for three of the nine identified subsidies due to missing data and evolving policies (United States et al. 2016). The largest quantified subsidy was a set of measures benefiting professional fuel users, such as fishermen, foresters, taxi drivers, and public transport companies ($15 billion annually). It is worth mentioning that none of these nine subsidies were reported previously by China.

These reviews play an important role in improving transparency and accountability in the reform process. This is partly reflected in the inclusion of previously unreported fossil fuel subsidies in the peer review reports of the United States and China. The peer reviews also help maintain the momentum of efforts to tackle fossil fuel subsidies and facilitate experience sharing and mutual learning (Gerasimchuk 2013). The publication of the peer review reports opens the door for putting external pressure on the reviewed countries. Unlike formal compliance mechanisms, however, peer reviews provide little incentive for implementing the commitment. This is not merely because the peer-reviewed countries are not obliged to implement the outcomes of the

20 The peer review team for the United States was made up of China, Germany, Mexico, and the OECD, while that of China was composed of the United States, Germany, Indonesia, the International Monetary Fund (IMF), and the OECD. The OECD chaired both peer reviews.

21 The only downstream subsidy identified by the United States was the Low Income Home Energy Assistance Program (LIHEAP) (China et al. 2016).

peer reviews. It is also because the countries under review determine what constitutes fossil fuel subsidies and which of these subsidies are available for review. The countries are free to limit the scope of the review to the subsidies they singled out for reform. For example, China and the United States limited the scope of their peer reviews to four specific forms of subsidies: direct budgetary support; tax preferences; and government and government-directed provisions of goods and services at no charge or for below-market rates (China et al. 2016; United States et al. 2016).

The voluntary nature of the process also means that it applies only to countries willing to participate. This allows reluctant members to easily avoid the review of their fossil fuel subsidies. In recognition of this, the G20 regularly calls on member countries to consider participating in the peer-review process (G20 2013, 2016, 2017a). These calls, together with the fact that the largest economies have already submitted themselves for review, put pressure on the rest of the membership to participate in the review process. However, even if all members participate in the peer review process, the current framework is unlikely to provide the transparency needed to ensure the implementation of the commitment. It is imperative to at least broaden the scope of the review to cover what the G20 members have committed to reforming, and not just what they want to reform. Moreover, the reviewed countries (with the help of the peer review team) need to adopt clear and concrete strategies for phasing out the fossil fuel subsidies identified through the peer review process.

3.4 Studies on Fossil Fuel Subsidies

The Pittsburgh Summit requested relevant institutions "to provide an analysis of the scope of energy subsidies and suggestions for the implementation of this initiative" (G20 2009). In response to this request, the IGO-4 submitted to the Toronto Summit its first joint report on the scope of energy subsidies and suggestions for identifying and phasing out inefficient fossil fuel subsidies which encourage wasteful consumption (IEA et al. 2010). Since then, the IGO-4 has continued to provide research and technical assistance on the implementation of the commitment (see, e.g., IEA et al. 2011; IEA and OECD 2017).

The OECD also launched an inventory of fossil fuel subsidies in 2013. The inventory now comprises more than 800 individual fossil fuel subsidies from 39 countries (OECD 2015). The IEA provides analysis and estimates of fossil fuel consumption subsidies in developing countries through its annual *World Energy Outlook (WEO)*. The World Bank and the International Monetary Fund (IMF) have also conducted several studies on fossil fuel subsidies, partly in response to the G20's call for international financial institutions to offer support to countries in their efforts to phase out inefficient fossil fuel subsidies (G20 2009). The G20 initiative has also inspired a range of independent researchers and institutions--such as the Global Subsidies Initiative (GSI), ICTSD, ODI, and OCI--to undertake studies on the legal, economic, social, and political aspects of fossil fuel subsidies.

These studies shed light not only on the scope and impacts of fossil fuels subsidies, but also on how best to reform them. They facilitate fossil fuel subsidy reforms by increasing awareness about the adverse effects of fossil fuel subsidies (and the benefits of their reform). Some of these studies have also suggested ways for enhancing the implementation of the G20 commitment. The IGO-4 report, for example, proposed a comprehensive roadmap for phasing out fossil fuel subsidies within the G20. However, although the G20 often takes notice of these studies (see Annex 1), it has taken very few measures based on the suggestions therein. Moreover, there is still a serious lack of complete and comparable data on fossil fuel subsidies. For example, there are no G20-specific fossil fuel consumption subsidy estimates. The absence of adequate data thus makes assessing compliance with the commitment difficult.

4. WHAT MORE NEEDS TO BE DONE? RECOMMENDATIONS AND POLICY OPTIONS

The G20 initiative has brought the fossil fuel subsidy issue from obscurity to the center of the global debate over climate change and sustainable development. There are now several (albeit fragmented) intergovernmental efforts to tackle fossil fuel subsidies. Despite these efforts, however, fossil fuel subsidies remain significant both within and outside the G20 (Bast et al. 2015; Gerasimchuk et al. 2017).[22] The prevalence of fossil fuel subsidies within the G20 partly reflects the failure of the group to live up to its commitment. Despite the commitment made eight years ago, G20 countries have not done enough to phase out even those fossil fuel subsidies that they deem "inefficient." The United States, for example, identified a number of fossil fuel subsidies as "inefficient" in its national implementation strategy submitted to the 2010 G20 Summit. None of these subsidies, however, have been phased out, due to the US Congress's consistent refusal to act. The limited success of the G20 initiative underlines both the difficulty of phasing out the subsidies and the ineffectiveness of the steps taken by the G20 to fulfil the commitment.

The discussion in the previous sections points to the fact that the implementation of the commitment to phase out inefficient fossil fuel subsidies has been hampered by the lack of an effective framework, including, but not limited to (a) ambiguity over the scope of the commitment; (b) the absence of clear implementation timelines; (c) the lack of transparency and data availability; and (d) the lack of effective monitoring and compliance mechanisms. The G20 must address these challenges if it is to deliver in full on its promise. This section presents some recommendations and policy proposals targeted at tackling these challenges.

The ideal way to address the issue of fossil fuel subsidies is to convert current political commitments into legally enforceable commitments through a binding, multilateral agreement on fossil fuel subsidies (Asmelash 2017). Between the G20, APEC, and the Friends of Fossil Fuel Subsidy Reform (FFFSR), there are now more than 40 countries that have already committed to phasing out fossil fuel subsidies. These countries are well-placed and well-equipped to drive the world towards a binding multilateral agreement on fossil fuel subsidies.

However, reaching such an agreement seems unlikely in the near future, especially given the recent change in administration in the United States. The Trump administration has shown its contempt for global efforts to combat climate change by withdrawing from the Paris Agreement. This is unfortunate, not in the least because the United States was the driving force behind the G20 FFSR initiative (Horgan 2010). However, the adverse effects of the new administration on global FFSR efforts should not be overstated. Despite its withdrawal from the Paris Agreement, the United States has agreed to "work closely with other countries to help them access and use fossil fuels more cleanly and efficiently" (G20 2017b).[23] The Hamburg Summit also confirmed the willingness of the G19 to proceed with the Paris Agreement, regardless of the United States' position. They might not go all the way to signing a binding agreement, but they can and must enhance their efforts to tackle fossil fuel subsidies.

The current policy environment and the urgency of climate change entail that the group should rather concentrate its short-term efforts on effective and politically feasible policy options,

22 The last two years have witnessed a decline in global fossil fuel consumption subsidies, but this has more to do with the sharp decline in global oil prices and less to do with the relative success of these reform efforts (IEA 2016b).

23 It is also worth noting that the United States might be interested in reforming fossil fuel subsidies for economic reasons. The issue of tax-based fossil fuel subsidies may be raised in the context of the new administration's proposed tax reform.

of which there are several. The focus should be to build on the initiatives already taken and to strengthen them further. The policy proposals presented below include those available within and outside the G20. Much could be achieved through the existing international frameworks, with little to no adjustments. The G20 countries are members of several multilateral institutions which are engaged in tackling environmentally harmful subsidies. The international trade and climate change regimes, in particular, offer a broad range of options. The section indicates these options and how to put them to good use.

4.1 Define the Scope of the Commitment

> *One remarkable attribute of government subsidies is the capacity of the very words themselves to conjure up marvellously diverse images in different minds.*
>
> George F. Break, 1972

The failure of the G20 to agree upon a common definition of a fossil fuel subsidy has left G20 countries with wide discretion to use their own subsidy definition. Most of them used this discretion to avoid or limit the scope of their commitments (Koplow 2012). The absence of an agreed-upon subsidy definition, coupled with the use of vague qualifying terms such as "inefficient" and "wasteful consumption," has seriously undermined the credibility of the commitment. The low level of compliance with the commitment underlines the pressing need for clarifying its scope.

There are at least two ways to do this. The first is to remove references to vague notions such as "inefficient" subsidies. Without any guidelines on how to differentiate efficient subsidies from inefficient ones, these terms allow countries to claim that their subsidies are efficient and hence fall outside the scope of their commitment. However, insofar as the concept of subsidies means different things to different countries, removing the vague qualifying terms may not be sufficient to clarifying the scope of the commitment on its own. The second way is to define fossil fuel subsidies. Finding a common definition has been one of the key points of contention in intergovernmental efforts to phase out fossil fuel subsidies. This is because there is no universally accepted definition of what constitutes a "subsidy" (OECD 2001). There are, rather, several definitions of subsidies, with varying scope and emphasis. As noted above, considerable differences also prevail across the G20 countries in their understanding of what constitutes a fossil fuel subsidy. Having an agreed-upon definition is of paramount importance in clarifying the scope of fossil fuel subsidies covered by the commitment. This will prevent countries from circumventing the commitment by tailoring subsidy definitions to fit their particular interests. It will also facilitate the process of monitoring compliance.

The broad implications of adopting one definition over another suggest that overcoming these differences and finding a mutually acceptable definition will be difficult--but it is not impossible. The G20 has several subsidy definitions from which to draw. The most widely used "energy subsidy" definition comes from the IEA. The IEA defines subsidies as "any government action directed primarily at the energy sector that lowers the cost of energy production, raises the price received by energy producers or lowers the price paid by energy consumers" (IEA 2010). This definition, which is also used in the IGO-4 joint reports, suggests that any government action that alters energy prices or costs in favour of consumers or producers would constitute a subsidy, regardless of its form and objective. However, it fails to capture support measures that do not affect prices or production costs (e.g. grants and direct cash transfers). Government inactions are also excluded from the scope of the IEA definition. For example, a lack of government action to internalise the negative externalities associated with fossil fuel production and consumption does not constitute a subsidy under this definition. Recent years have seen a growing tendency towards counting non-internalised externalities as subsidies. The IMF, in particular, defines subsidies broadly to include the negative environmental and social externalities associated with fossil fuel combustion, such as air pollution, carbon dioxide emissions, traffic congestion, and accidents (Coady et al. 2017). While it

is important to recognise the benefits they provide to the fossil fuel industry, counting non-internalised externalities as subsidies can create confusion (Steenblik 2014). More importantly, addressing non-internalised externalities requires a different policy solution than addressing other forms of environmentally harmful fossil fuel subsidies, it requires a carbon pricing policy (either in the form of carbon taxes or emission trading schemes).

One definition worth considering for the G20 initiative is that of the WTO Agreement on Subsidies and Countervailing Measures (ASCM). The ASCM defines a subsidy as a financial contribution by a government that confers a benefit to the recipient (WTO 1995, Article 1). This definition was not designed with the energy sector or environmentally harmful subsidies in mind, but it is fully applicable to fossil fuel subsidies. It also has a relatively broad scope which covers the various ways in which governments support the production and consumption of fossil fuels.[24] The key advantage of adopting the ASCM definition is that it is the only subsidy definition accepted by all the G20 countries. The ASCM definition also has distinct advantages over any new definition since it "has been tried and tested through a rigorous negotiating process and is supported by extensive legal analysis and jurisprudence from the [WTO] Dispute Settlement Body" (GSI 2010b). The relevance of the ASCM definition for intergovernmental efforts to phase out fossil fuel subsidies is often dismissed partly due to the misconception that its scope is limited to subsidies that are specifically provided to an enterprise or industry or group of enterprises or industries. However, specificity is not a requirement for a "subsidy" to exist under the ASCM (see WTO 1999). It is rather a requirement to determine whether the particular "subsidy" is subject to the disciplines of the ASCM. The G20 can adopt the ASCM definition without also adopting the specificity requirement therein. Adopting the ASCM definition would clarify the type of fossil fuel subsidies covered by the commitment. This will in turn improve accountability by making it difficult for G20 countries to circumvent the commitment easily.

4.2 Set Clear Implementation Timelines

Another limitation of the G20 initiative is the lack of a specific timeline for phasing out inefficient fossil fuel subsidies. As noted, the status quo allows individual G20 countries to set their own country-specific deadlines within the agreed timeframe of "medium-term." However, while "medium term" is too vague to be meaningful, only a handful of countries established clear deadlines for phasing out their inefficient fossil fuel subsidies (see Section 3.1). Setting a G20-wide deadline would strengthen the credibility of the commitment and add a sense of urgency to its implementation. It will also serve as both an incentive and an accountability mechanism for the implementation of the commitment.

At least two other intergovernmental initiatives have set timeframes for phasing out fossil fuel subsidies since the G20 commitment was made in 2009. The Sustainable Development Goals of Agenda 2030 require all countries to phase out their inefficient fossil fuel subsidies by 2030. In 2016, eight G20 countries went further by setting a shorter deadline than that of the SDGs. During their Summit in Ise-Shima, G7 countries agreed that they "remain committed to the elimination of inefficient fossil fuel subsidies and encourage all countries to do so by 2025" (G7 2016).[25] There is no official explanation as to why the G7 decided to end fossil fuel subsidies by 2025. As the most advanced economies, it may well be that they sought to lead by example, by eliminating their subsidies ahead of the SDGs deadline. But the question is why 2025? Why not (for example) 2020? Questions can also be raised as to the

24 Despite its relatively broad scope, the ASCM definition excludes some measures, such as implicit subsidies that arise from government inaction (or inadequate action); the non-internalisation of negative externalities associated with fossil fuel production and consumption; or the adoption of lax environmental regulations (Asmelash 2017; Bigdeli 2008). Also excluded from the ASCM definition are market transfers (i.e., those between consumers and producers or vice-versa) created by government policies (GSI 2010b).

25 A similar commitment was also made at the 2016 North American Leaders' Summit (NALS) in Ottawa (NALS 2016).

vague language of the Ise-Shima Declaration (see Asmelash 2016).

The last few years have also seen growing calls from business leaders and civil society organisations for the G20 to end fossil fuel subsidies by 2020 (e.g. ODI 2017; G20 2017c; GSI 2016). Despite these calls, the G20 has so far failed to set any deadline. However, as noted above, it is essential for the G20 to respond to these calls and set a definite timeline for the implementation of the commitment. Perhaps two issues are worth further consideration here. First, the G20 should set an ambitious but realistic deadline. 2020 would be ideal but may not be politically realistic given the presence of developing countries, such as India and Russia, with massive consumption subsidies that are relatively difficult to reform. It is also unrealistic to expect the G20 to adopt a 2020 deadline when the smaller group of relatively similar economies failed to do so. However, the G20 should, at the very least, adopt the G7 timeline with clear and unambiguous language. In case of failure to agree upon a single deadline, the G20 may consider establishing different deadlines for developed and developing countries or for different forms of fossil fuel subsidies (e.g. producer vs. consumer subsidies). Shorter deadlines may be considered for countries with better institutional frameworks to implement subsidy reforms and for fossil fuel subsidies that are more environmentally harmful (e.g. coal subsidies) or relatively easy to reform (e.g. production subsidies). Second, the G20 countries should refrain from introducing new fossil fuel subsidies. Introducing new fossil fuel subsidies undermines the commitment of the group to phase out existing fossil fuel subsidies. It is critical for the G20 to impose a standstill on introducing new fossil fuel subsidies with carefully defined exceptions for well-targeted subsidies (e.g. cash grants) to the poor and most vulnerable.

4.3. Improve Transparency on Fossil Fuel Subsidies

Transparency is a prerequisite for any successful effort to phase out fossil fuel subsidies. Much of the progress seen in the last few years in terms of transparency on fossil fuel subsidies was driven by international and civil society organisations. Studies from these organisations have brought light to the types, levels, and impacts of fossil fuel subsidies. However, a significant gap remains in terms of fossil fuel subsidy information. The information that comes from the annual progress reports and the self-review reports of the peer-review process are limited to what individual countries consider to be “fossil fuel subsidies” and what they single out for reviews. The G20 should consider adopting a common template for reporting fossil fuel subsidies (see Section 4.5). It should also urge its members to report regularly on their fossil fuel subsidies and measures to reform them. Standardising the submission process for subsidy information would help enhance transparency on fossil fuel subsidies as well.

The G20 should also consider using other options for enhancing transparency on fossil fuel subsidies. One such option is notification of fossil fuel subsidies to the WTO pursuant to ASCM Article 25. Subsidy notifications under the ASCM are generally low (Casier et al. 2014; Koplow 2012), but there is no doubt about the potential of the system to enhance transparency on fossil fuel subsidies. The G20 should hence consider improving compliance with the ASCM notification requirement. In contrast to the G20, the WTO has the institutional framework and expertise to collect and disseminate subsidies information. The group should consider the numerous suggestions put forward to improve the notification system. The most notable of these include allowing non-governmental organisations to provide subsidy notification and adopting a new notification template for subsidies (Casier et al. 2014).

Counter-notification is another option that can help improve transparency around fossil fuel subsidies under the ASCM. Article 25.10 provides that where a member fails to notify a measure that it should have notified, any other member may bring this matter to the attention of the member failing to notify. The latter should promptly notify, but if it fails to do so, the former may bring the matter to the notice of the WTO Committee on Subsidies and Countervailing

Measures. Although counter-notifications are relatively rare (Collins-Williams and Wolfe 2010), they can be used more effectively to enhance the transparency of fossil fuel subsidies. For instance, G20 members that notify a particular type of fossil fuel subsidy under the ASCM or through the G20 self-reporting mechanism may cross-notify similar types of fossil fuel subsidies provided by other countries.

The Trade Policy Review Mechanism (TPRM) of the WTO offers additional, complementary options for enhancing transparency on fossil fuel subsidies. Currently, fossil fuel subsidies rarely feature as a topic of interest in the review process. The G20 could change this by agreeing to add a section on fossil fuel subsidies to their country review report. This would not only enhance transparency, but also serve as a mechanism for monitoring compliance.

Another forum with a potential for enhancing transparency on fossil fuel subsidies is the United Nations Framework Convention on Climate Change (UNFCCC). The G20 countries could report their fossil fuel subsidies as part of their regular report to the UNFCCC (Van Asselt and Kulovesi 2017). Moreover, the ongoing discussions around the development of modalities, procedures, and guidelines for the transparency framework of the Paris Agreement offer a great opportunity for the G20 to contribute to the establishment of a multilateral transparency framework that also increases transparency on fossil fuel subsidies.

4.4. Provide Global Leadership on FFSR

The G20 has emerged in the last few years as the principal forum for global governance with an ever-expanding agenda of issues (Luckhurst 2016). Phasing out fossil fuel subsidies is one of the key climate-related issues where the group "has played a vital leadership role by putting the issue on the global agenda" (ICTSD 2017). The group can contribute to the global effort to phasing out fossil fuel subsidies in two ways. One is by taking concrete actions to phase out its own fossil fuel subsidies. Such actions send strong signals to other countries and intergovernmental fora to tackle their fossil fuel subsidies. The instant reaction of the APEC countries to the *Pittsburgh Declaration* is a case in point.[26] The other is by directly supporting and facilitating fossil fuel subsidy reform efforts in countries outside the group. The Pittsburgh Summit took the first step towards this direction by calling on "all nations to adopt policies that will phase out [inefficient fossil fuel] subsidies worldwide" (G20 2009). However, the group has taken no subsequent action so far to help and to support other countries in their efforts to phase out fossil fuel subsidies. Most developing countries lack the technical expertise and institutional frameworks to accomplish the complex task of phasing out fossil fuel subsidies without hurting the poor and inciting a popular backlash. The G20 should find ways to provide capacity building and technical assistance to these countries in cooperation with relevant international institutions.

The G20 should also promote FFSR through other regional and multilateral fora. There are ongoing regional initiatives within the EU, APEC, and NALS. The G20 should support these initiatives and encourage other regions to follow suit. The G20 countries should also consider including FFSR commitments to their regional trade agreements with countries outside the group. The EU-Singapore Free Trade Agreement (FTA) is a notable example towards this direction. Article 13.11 (3) of the EU-Singapore FTA provides that

> The Parties recognize the need to ensure that, when developing public support systems for fossils fuels, proper account is taken of the need to reduce greenhouse gas emissions and to limit distortions of trade as much as possible. While subparagraph (2)(b) of Article 12.7 (Prohibited Subsidies) does not apply to subsidies to the coal industry, the Parties share the goal of progressively reducing subsidies for fossil fuels. Such a reduction may be accompanied by measures to alleviate the social consequences associated with the transition to low carbon fuels (EU-Singapore FTA 2013).

26 APEC made a similar commitment to that of the G20 less than two months after the Pittsburgh Summit.

The inclusion of FFSR commitments in FTAs is one way to turn the current political commitments into legally binding commitments. It also helps to increase the number of countries committed to phasing out fossil fuel subsidies.

At the multilateral level, there has been a strong push to address fossil fuel subsidies through the UNFCCC. Though not reflected in the final text of the Paris Agreement, fossil fuel subsidies were discussed as one of the climate finance options during the 21st Conference of the Parties (COP21) to the UNFCCC (UNFCCC 2015). The Friends of Fossil Fuel Subsidy Reform (FFFSR) played an important role in this regard by, *inter alia*, launching a communiqué calling for action on fossil fuel subsidies in the lead up to COP21 (FFFSR 2015). Having failed to place the fossil fuel subsidy issue on the UNFCCC agenda, they appear to have shifted their focus to the WTO. The FFFSR have already raised the fossil fuel subsidy issue in the WTO Committee on Trade and Environment (CTE) (WTO 2015, 2016), but the CTE (and the WTO, for that matter) lacks the specific mandate to address environmentally harmful fossil fuel subsidies.[27] The G20 should join forces with the FFFSR to place the fossil fuel subsidy issue on the WTO agenda. The next WTO Ministerial Conference in Argentina offers a great opportunity to do so. There are several policy options for the G20 to consider: a ministerial decision (akin to the Nairobi Ministerial Decision on agricultural export subsidies) banning environmentally harmful fossil fuel subsidies; a ministerial decision mandating the CTE and other relevant WTO bodies to tackle environmentally harmful fossil fuel subsidies; a ministerial declaration condemning the use of environmentally harmful fossil fuel subsidies; or a joint communiqué (with the FFFSR and APEC) calling for action against fossil fuel subsidies within the WTO.

4.5. Revise National Implementation Strategies and Timeframes

As noted, the G20 countries developed their current implementation strategies and timeframes for phasing out inefficient fossil fuel subsidies according to their own subsidy definitions. An agreement on a common subsidy definition and implementation timelines will require revising these strategies. The G20 should use this opportunity to introduce a standard format for the implementation strategies since current national implementation strategies are reported in many formats. The original agreement was to develop national implementation strategies in two phases: lists of fossil fuel subsidies; and national implementation plans (GSI 2010a). However, only a handful of countries (namely, Italy, South Korea, and the United States) complied with this format, making cross-country comparisons difficult. The G20 may consider adopting the simple format used by countries such as South Korea and the United States, in which they listed their fossil fuel subsidies together with a brief description of the listed subsidy, estimates, and timelines for reform.

27 In contrast to environmentally harmful fossil fuel subsidies, the WTO has a specific mandate to tackle environmentally harmful fisheries subsidies pursuant to the Doha Declaration (WTO 2001).

5. CONCLUDING REMARKS

Reforming fossil fuel subsidies is often referred to as the low-hanging fruit of climate change mitigation policies and is now ripe for the picking. The sharp drop in global oil prices since the second half of 2014 has created a unique window of opportunity for the G20 to phase out fossil fuel subsidies.[28] The adoption of the Paris Agreement and 2030 Agenda for Sustainable Development offers an additional impetus for reform. Besides reducing greenhouse gas emissions, phasing out fossil fuel subsidies will free up much-needed resources for sustainable development and environmental protection. For example, redirecting current fossil fuel subsidies towards renewable energy will help accelerate the development and deployment of renewable energy technologies (Merrill et al. 2017). There are also several other reasons why the G20 can and must step up its efforts. These include the fact that the group accounts for 80 percent of the global primary energy consumption and 82 percent of global energy-related greenhouse gas emissions (Roehrkasten et al. 2016); includes some of the leading fossil fuel subsidising countries (IEA 2016b; Coady et al. 2017); and represents the most powerful economies with the necessary financial and institutional resources to undertake subsidy reforms.

The good news is that the group has already identified fossil fuel subsidy reforms as one of its key policy instruments to combat the threat of dangerous climate change (ICTSD 2017). Beyond recognising the adverse environmental impacts of fossil fuel subsidies, it has consistently reiterated its commitment to addressing these subsidies. While it has also taken some steps to implementing the commitment, the efforts thus far have proven to be inadequate. In Hamburg, the G19 countries not only stood united behind the Paris Agreement, but also reiterated their commitment to phase out inefficient fossil fuel subsidies (G20 2017a). But to show that they are serious about tackling climate change and achieving the SDGs, they need to go beyond the rhetoric and take concrete action to address and reform fossil fuel subsidies.

The key question now is what more the G20 could do to realise its commitment to phasing out fossil fuel subsidies (ICTSD 2017). Based on the analysis of the commitment and the steps taken towards its implementation, this paper has presented some recommendations and policy proposals for action. These proposals are listed in Table 2 below, while the rationales behind them are discussed at large in the preceding section.

28 Low oil prices make FFSRs less politically controversial (Benes et al. 2015; IEA 2015b). Many countries are seizing this opportunity and reforming their fossil fuel subsidies (IEA 2016b), but questions remain over the extent to which these reforms can be sustained when international prices start to increase (Asmelash 2017; Asamoah et al. 2017). This makes it imperative for the G20 to take concrete actions while the window of opportunity is still open.

Table 2. Recommendations and policy options

Recommendations	Policy Options
The G20 should define the scope of subsidies covered by the commitment.	- Avoid the use of vague terms such as "inefficient" and "wasteful consumption"; - Adopt a common definition of "subsidy"; - Set out specific and limited exceptions for well-targeted subsidies to the poor and most vulnerable.
The G20 should set clear implementation timelines.	- Impose a standstill on new fossil fuel subsidies with carefully defined exceptions; - Set clear and definitive deadlines for phasing out existing fossil fuel subsidies; or - Set different deadlines depending on the types of subsidies, their effects, and the capacity of countries to undertake subsidy reforms.
The G20 should enhance transparency on fossil fuel subsidies.	- Introduce mandatory annual reporting of progress in reforming fossil fuel subsidies; - Develop a standard reporting template; - Notify fossil fuel subsidies under the ASCM and the UNFCCC; - Use the cross-notification mechanism of the WTO's ASCM; - Strengthen the ASCM notification procedure; - Add a section on fossil fuel subsidies to trade policy review reports of the WTO TPRM.
The G20 should request the resubmission of national implementation strategies and timeframes.	- Revise national implementation strategies and timeframes in accordance with the newly agreed subsidy definition and timelines; - Authorise the ESWG to examine the compliance of national implementation strategies and timeframes with the newly agreed definitions and timelines before approval by the G20 Summit.
The G20 should provide global leadership on FFSR.	- Set high standards for phasing out fossil fuel subsidies; - Provide capacity building and technical assistance to developing countries; - Add FFSR commitments to free trade agreements (FTAs) akin to the EU-Singapore FTA; - Join forces with the Friends of Fossil Fuel Subsidy Reform (FFFSR) and other relevant groups in order to bring the fossil fuel subsidy issue to the greater attention of the WTO and to aim for one of the following: (i) Ministerial decision banning environmentally harmful fossil fuel subsidies; (ii) Ministerial decision mandating the WTO to tackle fossil fuel subsidies; (iii) Ministerial Declaration condemning the use of fossil fuel subsidies; (iv) Joint communiqué with the FFFSR and APEC calling for action to phase out fossil fuel subsidies in the WTO.

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ANNEX 1: REFERENCES TO FOSSIL FUEL SUBSIDY REFORM IN G20 DECLARATIONS

G20 Summits	References to FFSR in G20 Declarations
Pittsburgh Summit 24-25 September 2009	Rationalize and phase out over the medium term inefficient fossil fuel subsidies that encourage wasteful consumption. As we do that, we recognize the importance of providing those in need with essential energy services, including through the use of targeted cash transfers and other appropriate mechanisms. This reform will not apply to our support for clean energy, renewables, and technologies that dramatically reduce greenhouse gas emissions.
	We will have our Energy and Finance Ministers, based on their national circumstances, develop implementation strategies and timeframes, and report back to Leaders at the next Summit.
	We ask the international financial institutions to offer support to countries in this process.
	We call on all nations to adopt policies that will phase out such subsidies worldwide.
	We request relevant institutions, such as the IEA, OPEC, OECD, and World Bank, provide an analysis of the scope of energy subsidies and suggestions for the implementation of this initiative and report back at the next summit.
Toronto Summit 26-26 June 2010	We note with appreciation the report on energy subsidies from the International Energy Agency (IEA), Organization of the Petroleum Exporting Countries (OPEC), OECD and World Bank.
	We welcome the work of Finance and Energy Ministers in delivering implementation strategies and timeframes, based on national circumstances, for the rationalization and phase out over the medium term of inefficient fossil fuel subsidies that encourage wasteful consumption, taking into account vulnerable groups and their development needs.
	We also encourage continued and full implementation of country-specific strategies and will continue to review progress towards this commitment at upcoming summits.
Seoul Summit 11-12 November 2010	We reaffirm our commitment to rationalize and phase-out over the medium term inefficient fossil fuel subsidies that encourage wasteful consumption, with timing based on national circumstances, while providing targeted support for the poorest.
	We direct our Finance and Energy Ministers to report back on the progress made in implementing country-specific strategies and in achieving the goals to which we agreed in Pittsburgh and Toronto at the 2011 Summit in France.
Cannes Summit 3-4 November 2011	We reaffirm our commitment to rationalise and phase-out over the medium term inefficient fossil fuel subsidies that encourage wasteful consumption, while providing targeted support for the poorest.

G20 Summits	References to FFSR in G20 Declarations
Los Cabos Summit **18-19 June 2012**	We welcome the progress report on fossil fuel subsidies, and we reaffirm our commitment to rationalize and phase out inefficient fossil fuel subsides that encourage wasteful consumption over the medium term while providing targeted support for the poorest
	We ask Finance Ministers to report back by the next Summit on progress made, and acknowledging the relevance of accountability and transparency, to explore options for a voluntary peer review process for G20 members by their next meeting.
	We also welcome a dialogue on fossil fuel subsidies with other groups already engaged in this work.
Saint Petersburg Summit **5-6 September 2013**	We reaffirm our commitment to rationalise and phase out inefficient fossil fuel subsidies that encourage wasteful consumption over the medium term while being conscious of necessity to provide targeted support for the poorest.
	We welcome the efforts underway in some G20 countries as described in the country progress reports. We welcome the development of a methodology for a voluntary peer review process and the initiation of country-owned peer reviews and we encourage broad voluntary participation in reviews as a valuable means of enhanced transparency and accountability.
	We ask Finance Ministers to report back by the next Summit on outcomes from the first rounds of voluntary peer reviews.
	Recognising the importance of providing those in need with essential energy services, we ask Finance Ministers to consider, in conjunction with the relevant international institutions, policy options for designing transitional policies including strengthening social safety nets to ensure access for the most vulnerable.
Brisbane Summit **15-16 November 2014**	We reaffirm our commitment to rationalise and phase out inefficient fossil fuel subsidies that encourage wasteful consumption, recognising the need to support the poor.
Antalya Summit **15-16 November 2015**	We reaffirm our commitment to rationalise and phase-out inefficient fossil fuel subsidies that encourage wasteful consumption, over the medium term, recognising the need to support the poor.
	We will endeavour to make enhanced progress in moving forward this commitment.
Hangzhou **4-5 September 2016**	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 Summits	References to FFSR in G20 Declarations
Hamburg **7-8 July 2017*** ***(Not in the G20 Summit Communique but in the G20 Hamburg Climate and Energy Action Plan for Growth)**	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.

Source: G20 Declarations, compiled by the author

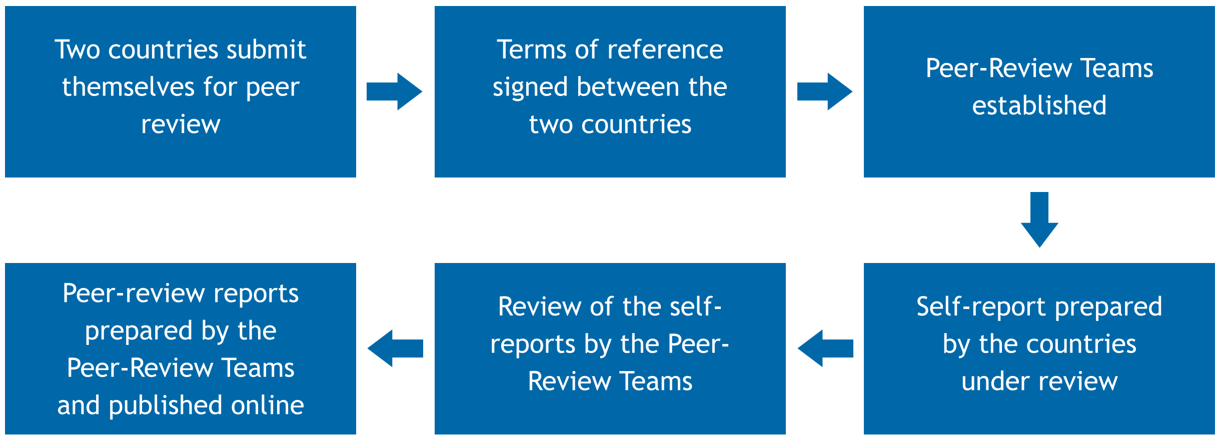
ANNEX 2: SUMMARY TABLE OF IMPLEMENTATION STRATEGIES AND TIMETABLES

Country	Summary of Implementation Strategies
Argentina	Proposes to reduce household subsidy for propane gas consumption as natural gas access is expanded.
Australia	No inefficient fossil fuel subsidies.
Brazil	No inefficient fossil fuel subsidies. Lists several government measures in the energy sector related to the production or consumption of fossil fuels.
Canada	Proposes to implement recently released draft legislation to phase out the accelerated capital cost allowance for oil sands assets over the 2011-15 period. Previously phased out other tax preferences applying to fossil fuel producers.
China	Proposes to gradually reduce the urban land-use tax relief for fossil fuel producers.
France	No inefficient fossil fuel subsidies. Previously reformed subsidies for hard coal mining.
Germany	Proposes to discontinue subsidized coal mining in a socially acceptable manner by the end of 2018.
India	Proposes to work out implementation strategies and timetables for rationalizing and phasing out fossil-fuel subsidies based on the recommendation of the Empowered Group of Ministers that has been constituted.
Indonesia	Proposes to phase out inefficient fossil-fuel subsidies in a gradual manner in parallel through managing the demand side by adopting measures that will reduce fossil-fuel energy consumption and by gradually narrowing the gap between domestic and international prices.
Italy	Proposes to continue with planned expiration of subsidy for certain cogeneration plants, and negotiate on a voluntary basis with private operators of these plants on the timing of their recess from the subsidy scheme.
Japan	No inefficient fossil-fuel subsidies
Korea	Proposes to phase out subsidies to anthracite coal and briquette producers.
Mexico	By continuing current policies and based on current market conditions, subsidies to gasoline, diesel and LP gas are expected to disappear in the medium term.
Russia	Proposes to implement the commitment to rationalize and phase out inefficient fossil-fuel subsidies through national economic and energy policy, within the framework of its Energy Strategy 2030 and the Concept of Long-Term Social and Economic Development, as well as in the context of its joining the WTO.
Saudi Arabia	No inefficient fossil fuel subsidies. Saudi Arabia has a long-standing energy policy to improve the utilization of economic resources with emphasis on rationalization.
South Africa	No inefficient fossil-fuel subsidies. Noting recently introduced electricity tax that applies to electricity generated from non-renewables as well as other relevant tax measures and incentives to reduce wasteful consumption and encourage clean energy development.

Country	Summary of Implementation Strategies
Spain	Proposes to implement current coal industry restructuring plan until 2012 when further restructuring will be considered.
Turkey	Proposes to work on a restructuring plan to rationalize the inefficient producer subsidies transferred to a state-owned hard coal producing enterprise.
United Kingdom	No inefficient fossil-fuel subsidies. Previously reformed subsidies for hard coal mining.
United States	Proposes to pass legislation to eliminate twelve preferential tax provisions related to the production of coal, oil and natural gas.

Source: (G20 2010a)

ANNEX 3: THE G20 VOLUNTARY PEER-REVIEW PROCESS



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  Kasturi Das and Kaushik Bandyopadhyay, 2016
- Global Rules for Mutually Supportive and Reinforcing Trade and Climate Regimes
  James Bacchus, 2016
- Enabling the Energy Transition and Scale-up of Clean Energy Technologies: Options for the Global Trade System
  Ricardo Meléndez-Ortiz, 2016
- Subsidies, Clean Energy, and Climate Change
  Ilaria Espa and Sonia E. Rolland, 2015
- Securing Policy Space for Clean Energy under the SCM Agreement: Alternative Approaches
  Robert Howse, 2013

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