



UNITED NATIONS
UNIVERSITY
UNU-WIDER

WIDER Working Paper 2016/13

Falling oil prices and sustainable energy transition

Towards a multilateral agreement on fossil-fuel subsidies

Henok Birhanu Asmelash*

March 2016

In partnership with



Abstract: Fossil-fuel subsidies are economically inefficient and harmful for the environment yet efforts to phase them out at the national and international levels have not been effective. The existing international legal framework is too weak and fragmented to support this process and an international agreement is essential. This paper explores the challenges and prospects of, and avenues for negotiating a binding multilateral agreement on phasing out fossil-fuel subsidies. The paper posits that the Friends of Fossil-Fuel Subsidy Reform are in a position to take the lead and that the ball is in the court of the World Trade Organization.

Keywords: energy subsidy reform, energy transition, fossil-fuel subsidies, oil prices, World Trade Organization

* Max Planck Institute Luxembourg, henok.asmelash@mpi.lu

This study has been prepared within the UNU-WIDER project on ‘The Political Economy of Clean Energy Transitions’.

Copyright © UNU-WIDER 2016

Information and requests: publications@wider.unu.edu

ISSN 1798-7237 ISBN 978-92-9256-056-0 <https://doi.org/10.35188/UNU-WIDER/2016/056-0>

Typescript prepared by Sophie Richmond.

The United Nations University World Institute for Development Economics Research provides economic analysis and policy advice with the aim of promoting sustainable and equitable development. The Institute began operations in 1985 in Helsinki, Finland, as the first research and training centre of the United Nations University. Today it is a unique blend of think tank, research institute, and UN agency—providing a range of services from policy advice to governments as well as freely available original research.

The Institute is funded through income from an endowment fund with additional contributions to its work programme from Denmark, Finland, Sweden, and the United Kingdom.

Katajanokanlaituri 6 B, 00160 Helsinki, Finland

The views expressed in this paper are those of the author(s), and do not necessarily reflect the views of the Institute or the United Nations University, nor the programme/project donors.

1 Introduction

The fossil-fuel industry is among the most heavily subsidized industries in the world. The International Energy Agency's (IEA) latest estimate indicates that global fossil-fuel consumption subsidies alone amounted to US\$493 billion in 2014 (IEA 2015a). This is more than four times higher than the subsidy that went to the renewable energy industry during the same year. The figures become even more striking when the negative externalities from fossil-fuel consumption are taken into account (Coady et al. 2015a). The adverse economic and environmental effects of fossil-fuel subsidies have long been recognized both in governmental and academic circles, but countries have been reluctant to remove these subsidies mainly for political economy reasons (Burniaux and Chateau 2014; Granado et al. 2010; OECD 1998; Parry et al. 2014; Pitt 1985). While momentum for fossil-fuel subsidy reform has been building over the last few years, the sharp drop in international oil prices since the second half of 2014 has intensified calls for—and efforts to bring about—the phasing out of fossil-fuel subsidies by making the withdrawal of these subsidies less politically controversial (IEA 2015a). It is, however, uncertain how long the decline in oil prices will persist and, if past experiences are anything to go by, the prices are likely to rise again.¹ When oil prices start rising again, the momentum for subsidy reform could dissipate and governments may find themselves under mounting pressure to (re)introduce subsidies (Coady and Boaping 2015; Kojima 2009). This means that, in addition to seizing the opportunity offered by falling oil prices to reform fossil-fuel subsidies,² the key challenge is to ensure the durability and irreversibility of the initiated reforms in the long run (Coady and Boaping 2015; IEA 2015a). This entails the need for ways to lock in fossil-fuel subsidy reforms, and it is primarily in this context that an international agreement on fossil-fuel subsidies merits consideration. Such an agreement would tie the hands of governments, preventing them from renegeing on their reform commitments, and thereby enhance the credibility and stability of fossil-fuel subsidy reforms. It would also help governments resist pressure from interest groups to bring back subsidies in the wake of oil price hikes. At the moment, there is no binding international agreement to phase out fossil-fuel subsidies. The Kyoto Protocol's (UN 1998) call for progressive reduction or phasing out of subsidies in all greenhouse-gas emitting sectors, and the G20's pledge to phase out or rationalize inefficient fossil-fuel subsidies over the medium term, go some way in this direction, but they fall far short of a legally binding commitment to phase out fossil-fuel subsidies.

Against this backdrop, this paper seeks to explore the challenges of, and prospects and possible avenues for negotiating a binding multilateral agreement to phase out fossil-fuel subsidies. Fossil-fuel combustion is the largest source of greenhouse gases, the increasing atmospheric concentration of which leads to global warming and climate change (IPCC 2014b). The ensuing environmental concerns, exacerbated by the pursuit of greater energy security, have placed the issue of energy transition at the forefront of the sustainable development agenda (Smil 2010). Recognizing the critical role that energy transition will play in combating the greatest threat humanity has ever faced—that is, climate change—more than 160 countries have set renewable energy targets and have adopted policies including green subsidies, emissions trading schemes and carbon taxes to accelerate the transition (IRENA 2015). The subsidization of fossil fuels, however, runs counter to these policies and impedes the transition. By artificially lowering fossil-fuel prices, subsidies encourage the wasteful consumption of carbon-intensive fuels and undermine the competitiveness of renewables (Bridle and Kitson 2014). The elimination of

¹The IEA (2015a), for example, projects oil prices of US\$80/barrel in 2020 and US\$128/barrel in 2040.

²A number of countries including, Angola, China, India, Indonesia, Iran, and Malaysia have already initiated or accelerated their subsidy reform seizing the opportunity offered by the low oil prices (IEA 2015a).

fossil-fuel subsidies would not of itself bring about the transition, but it will clear one of the major speed bumps on the path to a sustainable energy future. While fossil-fuel subsidy reforms take place at the national level, an international agreement provides not only legal certainty, but also the necessary context and basis for undertaking such reforms at the national level.

This paper is intended to provide a basic framework for the necessary discussions on strengthening the current international legal framework for phasing out fossil-fuel subsidies. The next section will introduce the basic notion of ‘fossil-fuel subsidies’. Section 3 makes the case for fossil-fuel subsidy reform mainly from a sustainable energy transition perspective. Section 4 examines the main barriers to fossil-fuel subsidy reform and how the collapse in oil prices can help in overcoming them. Section 5 reviews existing intergovernmental initiatives to phase out fossil-fuel subsidies. Section 6 begins by outlining how a binding multilateral agreement helps the global effort to phase out fossil-fuel subsidies, before assessing the key issues and challenges in reaching such an agreement. Section 6 sums up the discussion.

2 Understanding fossil-fuel subsidies

Despite its frequent use, the term ‘subsidy’ is ‘notoriously difficult’ to define. This is well captured in a frequently quoted statement of Hendrik Houthakker that: ‘My own starting point was also an attempt to define subsidies. But in the course of doing so, I came to the conclusion that the concept of a subsidy is just too elusive’ (Houthakker 1972). This widespread feeling has not prevented scholars and institutions from attempting to define subsidies, however. In fact, the problem is not a lack of a definition, but the existence of too many definitions. The multiplicity of subsidy definitions stems largely from the wide range of meanings and connotations attached to the concept and the many different forms that subsidies may take. The narrowest definition confines it to a direct payment by a government to a producer or consumer, while the broadest attempts to capture any government interventions that, directly or indirectly, affect prices or costs (Koplow and Dernbach 2001; UNEP 2008). The subsidy definitions provided by international organizations fall between these two extremes. Since an in-depth discussion of each of these definitions goes beyond the scope of this paper, we will focus on the only internationally agreed legal definition of a subsidy, which is contained in the World Trade Organization (WTO) Agreement on Subsidies and Countervailing Measures (SCM Agreement).

For the purpose of the SCM Agreement, a subsidy is deemed to exist if: (i) ‘there is a financial contribution by a government or any public body within the territory of a Member or any form of income or price support in the sense of Article XVI of the GATT [General Agreement on Tariffs and Trade]’, and (ii) ‘a benefit is thereby conferred’ (WTO 1995: Art. 1.1). A financial contribution, as spelt out in Article 1.1(a) (1) of the SCM Agreement, may take the form of: (a) a direct transfer of funds (e.g. grants, loans, and equity infusion) or potential direct transfer of funds or liabilities (e.g. loan guarantees); (b) government revenue that is otherwise due is foregone or not collected (e.g. tax credits and other fiscal incentives); (c) provision of goods or services other than general infrastructure or government purchase of goods; or (d) government payments to a funding mechanism or government entrustment or direction to a private body to carry out one of the type of functions illustrated in (a) to (c) and which would normally be vested in the government and the practice, in no real sense, differs from practices normally followed by governments. These four broad categories of financial contributions capture more than what is normally perceived as a subsidy, but, as noted by the Appellate Body in *US-Softwood Lumber*, the inclusion of an exhaustive list of financial contributions is in itself an indication that not all government measures capable of conferring benefits would necessarily constitute a subsidy within the meaning of the SCM Agreement (WTO 2004). Some of the most notable exclusions are of particular importance in the context of energy subsidies. For example, regulatory

measures, including border measures such as tariffs and export restraints, are excluded from the subsidy definition of the SCM Agreement, although they may eventually confer the same benefit as the above-mentioned financial contributions.³ Also excluded are implicit subsidies that arise from government inaction (or inadequate action), such as the non-internalization of negative externalities or the adoption of lax environmental regulations (Bigdeli 2008). A failure to internalize negative externalities through taxes or other mechanisms is likely to confer the same benefit as any other financial contribution on those who create the externalities. Indeed, it is precisely for this reason that the International Monetary Fund (IMF) incorporates negative externalities associated with the use of fossil fuels into its global fossil-fuel subsidy estimates.

Measuring energy subsidies is an equally complex and difficult task. Besides the multiplicity of definitions, the task is complicated by significant data and methodological limitations (Ellis 2010). The latest global fossil-fuel subsidy estimates range from US\$0.5 trillion to about US\$5 trillion, reflecting differences in the subsidy definitions and methodologies used. On one extreme, using the price-gap approach, whereby subsidies are calculated based on the difference between the domestic and international price of fuels, the IEA, for example, estimated global fossil-fuel consumption subsidies to be at US\$493 billion in 2014. However, since it fails to capture producer subsidies and subsidies that do not affect the market price of fuels, the price-gap approach tends to underestimate the total support given to the fossil-fuel industry (Koplow 2009). On the other extreme, the IMF estimates global post-tax subsidies to reach US\$5.3 trillion in 2015, using a broad definition that encompasses subsidies to both consumers and producers (Coady et al. 2015a). The IMF's post-tax subsidy is composed of two components: (i) pre-tax subsidies (consumption subsidies calculated based on the price-gap approach plus budgetary support to producers), and (ii) tax subsidies (calculated based on the difference between efficient and actual taxation).⁴ The latter are mainly what economists typically refer to as externalities, and, as aptly pointed out by Gupta and Keen (2015), their estimation is problematic as '[it] involves measuring and valuing environmental damages that are often uncertain and very country-specific, as well as needing to place some monetary value on human life'. Despite the criticism it has drawn from some quarters for these particular reasons, 'rebranding externalities as subsidies' is getting foothold in the literature (Barany and Grigonyte 2015) and has brought widespread attention to the issue of fossil-fuel subsidies.

Regardless of the actual figure, there is no doubt that governments around the world spend a substantial amount of financial resources on fuel subsidies every year. Studies have also shown that these subsidies have significant adverse effects, economically, socially, and environmentally. However, before discussing their impact and whether and (if so) how they should be reformed, we need to consider why governments subsidize fossil fuels in the first place. The economics literature provides a range of general objectives that may induce governments to intervene in the economy through the provision of subsidies. These include: offsetting various market failures, exploring economies of scale in production, meeting social policy objectives, and changing the distribution of income and increasing or retaining employment (Looney 1999). With regard to fossil-fuel subsidies, governments often attempt to justify subsidies on the basis of one or more of the following grounds: stimulating economic development; reducing dependency on imports for energy security reasons; protecting the environment; and providing access to modern energy

³ For example, a restriction on coal exports, either in the form of quotas or a total ban, may increase the quantity of coal in the domestic market and hence provide an advantage for consumers in terms of lower prices in the same way a government provision of coal (below market price) does. For more details, see Rubini (2009).

⁴ Efficient taxation entails that: (i) fossil fuels should be taxed like any other consumer products, and (ii) a corrective tax (Pigouvian tax) should be introduced to capture the negative externalities of fossil-fuel consumption such as outdoor air pollution, carbon dioxide emissions, traffic congestion, and accidents (IMF 2013).

services for low-income households (UNEP and IEA 2001). The relative importance of these objectives obviously varies across countries and regions, but governments usually justify their fossil-fuel subsidy programmes under the guise of protecting poor households from the impact of higher fuel prices.

3 Fossil-fuel subsidies and energy transition: the case for reform

Despite the emergence of alternative energy sources, the world remains dependent on fossil fuels for more than 80 per cent of its energy (IEA 2015a). This heavy dependence on hydrocarbons, however, has become a serious cause for concern with regard to climate change and energy security. The Intergovernmental Panel on Climate Change (IPCC) has concluded that the warming of the climate system is unequivocal (IPCC 2014b). The global average temperature has increased by about 0.85°C during the period 1880 to 2012 (IPCC 2014a). This is in large part due to the unprecedented increase in the atmospheric concentration of greenhouse gases. Continued greenhouse gas emissions will cause further warming and increase the likelihood of severe, pervasive, and irreversible impacts for people and ecosystems (IPCC 2014a). Mitigating these risks requires substantial and sustained reduction in greenhouse gas emissions.⁵ This is, however, unlikely to be achieved unless the world halts its unabated use of fossil fuels. Carbon dioxide emission from fossil-fuel combustion is the single largest contributor to greenhouse gas emissions (IEA 2015b). Scientific studies indicate that meeting the internationally agreed goal of limiting global average temperature increase to no more than 2°C requires the majority of proven fossil-fuel reserves to remain buried underground.⁶ Considering the ever-growing demand for energy, the only way this could happen is through enhanced energy efficiency and rapid transition of the global energy system from one that relies heavily on fossil fuels to a system that depends mainly on renewable and low-carbon energy sources such as solar and wind (Barnosky 2015). This much-needed energy transition is already under way, but not at a pace fast enough to avoid catastrophic and irreversible consequences of climate change (IEA 2015a).

Fossil-fuel subsidies are one of the major obstacles holding back the transition to a sustainable energy system. The literature on fossil-fuel subsidies shows that there are at least three, to some extent overlapping, ways in which fossil-fuel subsidies hamper the development of renewable energy technologies (Bridle and Kitson 2014; Bridle et al. 2014). First of all, fossil-fuel subsidies impair the competitiveness of renewable energy sources by artificially lowering the cost of fossil fuels. In this respect, fossil-fuel subsidies are completely incoherent with the numerous policy instruments (including carbon taxes and emission trading schemes) that have been adopted by many countries over the years in an attempt to level the playing field for renewable energy technologies. Second, fossil-fuel subsidies tend to divert investment from renewable energy sources by enhancing the relative attractiveness of the fossil-fuel industry. Although global renewable energy investment is predicted to reach US\$7.4 trillion in 2040, this figure represents only 15 per cent of total investment in global energy supply, and will not be sufficient to achieve the reduction in greenhouse gas emissions necessary to meet the 2°C target (IEA 2015a). Third, given the inherently long-term nature of energy projects, subsidy-induced fossil-fuel investments leads to ‘lock in’ in an unsustainable energy system for decades to come and make the energy transition much more difficult (Unruh 2000).

⁵ Studies indicate that limiting temperature rise to 2°C would require cutting global greenhouse gas emissions by 6.2 per cent per year for the next 85 years (PricewaterhouseCoopers 2014).

⁶ According to the IEA, ‘[no] more than one-third of proven reserves of fossil-fuels can be consumed prior to 2050 if the world is to achieve the 2°C goal’ (IEA 2012).

Moreover, fossil-fuel subsidies create opportunity costs as the resource could have been spent on renewable energy technologies or on other important social needs such as public health and education. A 2013 IMF study found that fossil-fuel subsidies were more than 5 per cent of gross domestic product (GDP) in 12 of the 20 countries in the Middle East and North Africa (IMF 2013). Such high levels of fossil-fuel subsidies affect other sectors of the economy through higher taxes imposed to generate government revenue and by crowding out public spending (for example, the same study found that some countries spend more on fossil-fuel subsidies than on public health and education).

The literature is replete with studies showing the economic and environmental gains from the removal of fossil-fuel subsidies. One of the earliest studies on the subject found that removing fossil-fuel subsidies would reduce global carbon dioxide emissions by 9 per cent and lead to a global welfare gain of US\$33 billion (Larsen and Shah 1992). Subsequent studies have yielded largely similar results. Laura Merrill et al. (2015) recently found that removing fossil-fuel consumption subsidies alone would result in global greenhouse gas emission reduction of up to 13 per cent by 2050. Removing subsidies would also have important implications for energy security. The subsequent increase in energy prices would incentivize energy conservation and efficiency measures, ultimately reducing global energy demand. The IEA (2011) estimated that the elimination of fossil-fuel consumption subsidies would reduce global oil demand by 3.7 million barrels per day by 2020.

Why, then, are countries reluctant to harvest this ‘low-hanging fruit’? The answer to this question usually takes two forms. The first response is the concern that since fossil-fuel subsidies are commonly justified under the guise of protecting poor households against high energy prices, their removal could restrict such households’ access to energy. Studies, however, have shown that untargeted fossil-fuel subsidies are costly and inefficient means of making energy affordable to the poor. Rather than helping the poor, such subsidies disproportionately benefit higher income groups that can afford higher levels of fuel consumption (Granado et al. 2010). The IEA, for example, found that only 8 per cent of such subsidies reached the poorest 20 per cent of the population in 2010 (IEA 2011).⁷ The second explanation is more compelling and popular. Eliminating fossil-fuel subsidies is complex and politically difficult. Experience from previous subsidy reform efforts suggests that reforming fossil-fuel subsidies can face stiff resistance from two fronts: public resistance and resistance from vested interests (Koplow 2014). The following section will discuss the nature of these political barriers and whether—and if so how—low oil prices can help in overcoming them.

4 Falling oil prices and fossil-fuel subsidies: fuel for reform

The price of crude oil went from a peak of about US\$115 a barrel in June 2014 to below US\$50 in January 2015. The decline has continued ever since and crude oil now costs less than US\$30 a barrel, falling more than 70 per cent since the second half of 2014.⁸ The environmental implications of this sharp drop in oil prices are far from straightforward. On the one hand, low oil prices encourage the overconsumption of carbon-intensive fuels and reduce the incentives for energy conservation. Low oil prices could also make renewables relatively even more expensive

⁷ Similarly, Coady et al. (2010) found that about 40 per cent of the benefits of global petroleum subsidies accrue to high-income groups, while low-income groups received less than 10 per cent of the subsidy benefit.

⁸ This has brought contrasting economic fortunes for oil-exporting and oil-importing countries. In general, while oil-importing countries stand to benefit from low oil prices, oil-exporting countries face significant revenue losses (IMF 2015; World Bank 2015a).

and hence scare off much-needed investment in the renewable energy sector (Cheon and Urpelainen 2012). On the other hand, falling oil prices represent an invaluable opportunity to phase out fossil-fuel subsidies (Coady et al. 2015; IEA 2015a; World Bank 2015b). The major challenge is how to maximize the opportunities and mitigate the challenges. This section elaborates on the nature and extent of the opportunity that falling oil prices afforded for subsidy reform.

There is a broad consensus in the literature that the main barriers to fossil-fuel subsidy reform are political. As noted in the preceding section, subsidy reforms face strong opposition both from vested interests and from the public at large. The primary opposition to subsidy reform comes from specific interest groups that benefit from the status quo (Overland 2010). Subsidy reforms create ‘winners’ and ‘losers’, like most other policy reforms. The political economy of reforms suggests that reforms become extremely difficult to implement when the ‘losers’ are more powerful or better able to organize themselves than the ‘winners’ (Haggard and Webb 1994). This is particularly the case for fossil-fuel subsidies. Different studies show that subsidy benefits tend to be highly concentrated in the hands of specific groups (with higher levels of energy consumption), while the costs are widely spread across the general population. Those who benefit from the status quo obviously stand to lose from the removal of subsidies. And hence they have strong incentives to lobby for the retention of subsidies or against subsidy reforms. Small, concentrated interest groups are usually well organized and are more likely to influence policy than large, dispersed groups (Olson 1965). Members of the general public have much less incentive,⁹ as well as less information, to lobby effectively for subsidy reform. This lack of countervailing lobbying for subsidy reform further strengthens the vested interests’ chance of successfully blocking reforms. The drop in oil prices, however, reduces the incentives for such lobbying. Under the current low oil prices, the change in fuel prices after the removal of subsidies would not be as dramatic as it would have been under high oil prices. By limiting the price increase from subsidy removal, low oil prices mitigate the cost of subsidy reforms for those groups that benefit from subsidies (Benes et al. 2015). This means that interest groups will have less incentive to lobby against subsidy reforms during periods of low oil prices.

Another source of resistance to subsidy reform comes from the general public. In theory, one may expect the poor, in whose name fossil-fuel subsidies are usually justified but who benefit very little from subsidies, to support rather than protest against subsidy reforms. In practice, however, public resistance is often the cause of reform reversal in many countries.¹⁰ Perhaps the most important factor that explains why subsidy reforms face public resistance is the fact that the potential benefits are less visible than the short-term losses. For instance, the fuel price increase from subsidy reforms is immediate and readily noticeable compared to the long-term economic and environmental benefits. This is often exacerbated by (i) the lack of information regarding the need for and benefits of subsidy reforms and (ii) low level of public trust in the reform agenda. Some countries have implemented compensatory measures such as direct cash transfers to the poor and the most vulnerable to offset the increase in fuel prices from subsidy reforms. Such targeted subsidies are, however, complex and difficult to implement, especially for countries with limited institutional capacity (Fattouh and El-Katiri 2012). Here, again, low oil prices reduce the risk of public resistance to subsidy reforms and the need for compensatory

⁹ This is because the cost of subsidies is likely to be much smaller in per capita terms than the benefit to vested interests (Morgan 2007).

¹⁰ Public demonstrations have caused reform reversal in Venezuela (1989), Indonesia (1998), Yemen (2005), Cameroon (2008), Bolivia (2010), Jordan (2011), and Nigeria (2012) (Cheon 2015; Victor 2009).

measures. Low oil prices means that the removal of subsidies is unlikely to cause a significant increase in fuel prices or in general inflation.

A number of countries are now seizing the opportunity offered by low oil prices to initiate or accelerate their subsidy reforms. And if the fall in oil prices persists, many more countries may follow suit. However, this opportunity is not without constraints. First, by reducing the fiscal cost of subsidies, low oil prices may undermine one of the key incentives for governments to undertake subsidy reforms, that is, growing fiscal pressure. Second, given the uncertainty associated with oil prices, those countries that seized the opportunity are likely to find themselves under a new pressure to reintroduce subsidies when oil prices rebound. Absent any mechanism to ensure the durability of the subsidy reforms, the gains from falling oil prices (in terms of opportunities for subsidy reform) are almost inevitably short-lived. As will be argued later, turning these short-term gains into permanent gains, *inter alia*, requires international co-operation and a binding legal framework that accelerates reforms and avoids the risk of backsliding.

5 Intergovernmental initiatives for fossil-fuel subsidy reform

There is a growing recognition that fossil-fuel subsidies are not only economically inefficient but also harmful for the environment. The most visible aspect of this recognition is the proliferation of calls for the phasing out fossil-fuel subsidies and efforts to do so over recent years. This section will highlight and briefly discuss the efforts that have been made thus far at the intergovernmental level. Although these efforts are yet to yield the desired results, they represent a major step forward in the quest to end fossil-fuel subsidies, and offer valuable lessons for future multilateral efforts to eliminate fossil-fuel subsidies. In line with the focus of this paper, the emphasis here will be on the effectiveness of their underlying legal instruments.

One of the first major global responses to the repeated calls for fossil-fuel subsidy reform came in the form of the Kyoto Protocol to the UNFCCC (UN Framework Convention on Climate Change), which entered into force in February 2005. Article 2 of the protocol lays down a non-exhaustive list of policies and measures to be implemented and/or further elaborated by the signatories in achieving their quantified emission limitation and reduction commitments under the protocol. These include the:

Progressive reduction or phasing out of market imperfections, *fiscal incentives, tax and duty exemptions* and *subsidies in all greenhouse-gas emitting sectors* that run counter to the objective of the Convention and application of market instruments. (UN 1998: Art. 2, emphasis added)

Most fossil-fuel subsidy schemes could meet this condition, but the requirement to phase them out is neither comprehensive nor mandatory. First, it applies only to the so-called Annex I countries and excludes some of the leading fossil-fuel subsidizing countries.¹¹ Second, none of the policies and measures set out in Article 2 are mandatory, even for the Annex I countries (Feaver et al. 2010). The protocol gives the signatories absolute discretion to implement any particular policy or measure, as long as they meet their emission reduction or limitation targets.

¹¹ In December 2005, the Conference of the Parties to the Kyoto Protocol (CMP) further extended the application of this provision to some developed countries, see Decision 31/CMP.1.

Perhaps the most concerted effort yet to phase out fossil-fuel subsidies at the intergovernmental level has been that of the G20. At the Pittsburgh Summit in September 2009, G20 member states, representing the largest economies in the world, agreed:

*To phase out and rationalize over the medium term inefficient fossil-fuel subsidies while providing targeted support for the poorest. Inefficient fossil-fuel subsidies encourage wasteful consumption, reduce our energy security, impede investment in clean energy sources and undermine efforts to deal with the threat of climate change. (Leaders' Statement, emphasis added)*¹²

Before proceeding with examining the nature and scope of this commitment, it is useful to note that a similar commitment was made by the member states of the Asia-Pacific Economic Cooperation (APEC) shortly after (APEC 2009). Together, the G20 and APEC membership, which comprises a wide range of countries with the highest fossil-fuel subsidies, accounts for about 83 per cent of global oil consumption, making the commitment even more remarkable (Aldy 2015). However, translating this commitment into action proved to be a slow and difficult process for several reasons. The first of these concerns the scope of the commitment. In the absence of a universally agreed upon definition and given the diverse range of interests involved, defining fossil-fuel subsidies was one of the most contentious issues during the negotiations (Lang 2011). Since they were not able to agree on a common definition, the resultant compromise was a commitment to phase out 'inefficient fossil-fuel subsidies', whereby each country determines for itself what constitutes an 'inefficient' fossil-fuel subsidy. The explicit reference to 'inefficient' subsidies was meant to permit some exceptions, but it is hard enough to identify a subsidy, let alone an 'inefficient' one, thereby making the scope of the commitment uncertain from the outset. The ramifications of this uncertainty became especially evident during implementation. In response to the request to report their implementation strategies, 8 out of 20 G20 members reported claiming to have no inefficient fossil-fuel subsidy at all (Koplow 2012). Whereas those that reported that they did have inefficient fossil-fuel subsidies, reported considerably lower figures than estimates had suggested (Koplow 2012). However, given that members are entitled to adopt their own interpretation of what constitutes 'inefficient fossil-fuel subsidies', there is no legal grounds for holding them accountable for the discrepancy. Moreover, the vagueness of what exactly constitutes 'phasing out' or 'rationalize' leaves it up to the individual member states to determine the nature and extent of their commitment.

This is further exacerbated by the lack of a compliance mechanism. No mention was made in the original commitment of a specific mechanism to ensure compliance with the commitment. The only requirement was for members to voluntarily report their fossil-fuel subsidies and reform plans, but, as pointed out by Doug Koplow (2012), the absence of an oversight mechanism for reporting or any penalty for inaccurate or incomplete data has led most members to minimize their reporting or to stop reporting all together. Perhaps in recognition of this fact, G20 leaders at the Los Cabos Summit in June 2012 directed their finance ministries to develop a voluntary peer-review process to increase accountability and transparency (G20 Leaders 2012). The subsequent development of a voluntary peer-review process, whereby a member state could invite other members to assess its progress in phasing out inefficient fossil-fuel subsidies, may eventually add some accountability to self-reporting (Gerasimchuk 2013). However, peer review is not a compliance mechanism and is unlikely to produce meaningful results unless what constitutes an inefficient fossil-fuel subsidy is defined first and a mandatory (and country-specific) timeline for reform is established.

¹² Available at: https://www.treasury.gov/resource-center/international/g7-g20/Documents/pittsburgh_summit_leaders_statement_250909.pdf

Other noteworthy intergovernmental forums that have joined the fight against fossil-fuel subsidies include the G7, the UN Conference on Sustainable Development (UNCSD), which outlines a commitment to the development of internationally agreed sustainable development goals, and the Friends of Fossil-Fuel Subsidy Reform (FFFSR). The G7, which is composed of seven G20 members, regularly reaffirms its commitment to phase out inefficient fossil-fuel subsidies that encourage wasteful consumption, but has never moved beyond such rhetorical commitments. One small step we have seen over the past year within the G7 is a change in the tone of the rhetoric. The 2015 G7 Summit held in Germany used the term ‘elimination’ for the first time in place of the usual ‘phase out’ or ‘rationalize’ (G7 Leaders 2015).

Because of its almost universal membership, UNCSD has the potential to expand the geographical scope of the commitment to phase out fossil-fuel subsidies. However, this potential has yet to be fully realized. The issue of fossil-fuel subsidy reform was widely discussed during the Rio+20 Conference in 2012, but the outcome document, that is, General Assembly Resolution 66/288, was confined to reaffirming the existing G20 and APEC non-binding commitments (with additional qualifying language) to phase out *harmful* and inefficient fossil-fuel subsidies that encourage wasteful consumption and *undermine sustainable development* (UN 2012).

Finally, FFFSR is a group of eight non-G20 countries, namely, Costa Rica, Denmark, Ethiopia, Finland, New Zealand, Norway, Sweden, and Switzerland, formed in June 2010 particularly to support the G20 and APEC commitments to phase out inefficient fossil-fuel subsidies. Since then, the group has evolved to become a vital player in the international efforts to phase out fossil-fuel subsidies. It has recently launched a communiqué calling for the elimination of fossil-fuel subsidies in the context of the Paris climate change conference (FFFSR 2015). The communiqué has been endorsed by a number of countries and encourages the international community to advance fossil-fuel subsidy reform through three interrelated principles: (i) increased transparency, (ii) greater ambition in the scope of reform, and (iii) the provision of targeted support for the poorest.

6 Towards a multilateral agreement on fossil-fuel subsidies

The previous section has shown that a number of intergovernmental efforts have been made to phase out fossil-fuel subsidies over the past years. Despite these efforts, however, fossil-fuel subsidies remain prevalent all over the world (Bast et al. 2015). In this section, we discuss the prospects for, and challenges of moving towards a binding multilateral agreement on fossil-fuel subsidies. Negotiating such an agreement is obviously highly complex and time consuming. It is also politically challenging. However, the growing recognition of the need to eliminate inefficient and environmentally harmful fossil-fuel subsidies, together with the fall in global oil prices, has created a unique opportunity not only to reform fossil-fuel subsidies but also to lock in those reforms. Although no such agreement is likely in the near future, concluding a multilateral agreement on fossil-fuel subsidies should be high on the agenda of the international community.

6.1 The need for a multilateral legal regime

It is widely agreed that climate change is a global problem that requires global policy response. The issue of fossil-fuel subsidies is no exception. Since the environmental and economic impacts are not limited to the subsidizing country only, it is in the interest of all countries to cooperate in phasing out fossil-fuel subsidies. From the environmental perspective, fossil-fuel subsidies contribute to the increase in greenhouse gas emissions, which is responsible for climate change. From the economic perspective, one can imagine at least three types of transboundary impacts. First, given that fossil fuels are one of the most internationally traded commodities and

depending on how large the country (or group of countries) in question is, subsidy-induced changes (increase or decrease) in the supply or demand of fossil fuels in the country (or group of countries) can affect international prices, which will in turn affect supply and demand in other countries (Coady et al. 2010). Second, by keeping the prices of fossil fuels artificially low, fossil-fuel consumption subsidies provide an unfair competitive advantage to the energy-intensive industries of the subsidizing country (s) at the expense of their counterparts in countries with no or smaller fossil-fuel subsidies (OECD 2015). This has already raised serious concerns and was one of the key issues in the WTO accession negotiations of energy-exporting countries such as Russia and Saudi Arabia (Milthorp and Christy 2012). Third, studies have shown that subsidies that drive the price of fossil fuels far below the prices prevailing in neighbouring countries promote cross-border fuel smuggling (IMF 2013; OECD 2015).

These transboundary environmental and economic impacts underscore the need for international co-operation in the quest to end fossil-fuel subsidies. It was recognition of this fact that led to the intergovernmental efforts discussed in the preceding section. However, those efforts contain only voluntary commitments with no incentives (or punishments) to encourage or force the countries concerned to undertake or sustain reforms. Past precedent suggests that such commitments may not translate into actual subsidy reforms, and, even when they do, the reforms tend to be vulnerable to oil price shocks, public protest, and changes of political regime. Without any mechanism that ties their hands, reluctant governments often find it easier to renege on their voluntary commitments in times of high and rising oil prices, in the face of popular opposition, or in the run-up to elections (Vagliasindi 2013). It is thus necessary to transform these fragile political commitments into legally binding obligations to ensure that countries undertake and stick to subsidy reforms. The same is true for the ongoing low oil price induced unilateral subsidy reforms. As already noted, several countries are currently in the process of, or considering, reforming their fossil-fuel subsidies, seizing the opportunity created by the fall in global oil prices. The question remains: how to make these reforms stick? Oil prices will likely rebound sooner or later and governments will be under pressure to reintroduce subsidies. One lesson we have learnt from previous unilateral reform efforts is that governments usually bow to such pressure and postpone or reverse their reform plans for fear of losing political capital. An international agreement on fossil-fuel subsidies can help resolve such problems and achieve lasting reforms by binding governments into their subsidy reform commitment (Lang et al. 2010). It can also serve as a hand-tying mechanism and help governments resist pressure to (re)introduce subsidies when oil prices start rising again, in the same way that international trade liberalization agreements help insulate governments from domestic protectionist pressure (Fernandez and Portes 1998).

6.2 Are we there yet?

The past few years have witnessed a growing consensus on the need to reform fossil-fuel subsidies. As Mark Halle of the International Institute for Sustainable Development (IISD) puts it: ‘the question is no longer whether we need to reform [fossil-fuel] subsidies, but how do we do it effectively?’ (GSI 2012a). A number of factors have contributed to this change in perspective, including growing environmental concerns, ever tightening budget constraints (Gerasimchuk 2015), and increased availability of information on the extent and impacts of fossil-fuel subsidies.¹³ Recent literature has accordingly begun to move beyond the importance of subsidy reforms to focus instead on identifying barriers to subsidy reforms and how they can be overcome. As already noted, governments have also begun to respond to the widespread call for

¹³ International organizations such as the World Bank, IMF, IEA UNEP, and OECD have played a leading role in identifying, quantifying, and assessing the impacts of fossil-fuel subsidies.

reforms through unilateral and intergovernmental subsidy reform initiatives. The recent fall in global oil prices has given an important boost to the growing momentum of subsidy reforms around the world.

The Global Subsidies Initiative (GSI 2009) has identified six building blocks needed to undertake fossil-fuel subsidy reforms at a global scale: (i) mapping the characteristics, (ii) assessing the impacts, (iii) understanding the politics, (iv) developing reform strategies, (v) improving transparency, and (vi) an international agreement. The first four building blocks have already been developed notably by international organizations such as the IEA, IMF, World Bank, Organisation for European Co-operation and Development (OECD), and UN Environmental Programme (UNEP). The next logical step is to enhance transparency and begin negotiating an international agreement that provides a multilateral legal framework for fossil-fuel subsidy reforms. This, however, is not as easy a step as it sounds. Despite the growing consensus on the desirability of subsidy reforms, there is little agreement on how to define and measure fossil-fuel subsidies, the lack of transparency is still overwhelming, competitiveness concerns continue to prevail in many countries, and international efforts remain too fragmented, without any effective coordination mechanism. Moreover, reaching an international agreement is a complex process that requires high level of international co-operation and commitment, genuine leadership, and strong and effective institutional support. Certainly, we are not there yet, but the momentum seems to be picking up. A significant number of countries are now calling not only for action, but for *prompt* action for the elimination of inefficient fossil-fuel subsidies worldwide.

6.3 Key issues and challenges ahead

In this section we discuss some of the key issues and challenges in the pursuit of a multilateral framework for fossil-fuel subsidy reforms. The likelihood and success of a multilateral agreement on fossil-fuel subsidies largely rests on the international community's ability to: (i) define what constitutes a 'fossil-fuel subsidy', (ii) create an effective mechanism for enhancing transparency, (iii) address the concerns of developing countries and oil-exporting countries, and (iv) establish enforceable commitments with implementation timelines. At the heart of all these challenges lies the issue of political will to reach a multilateral agreement on phasing out fossil-fuel subsidies. Despite the growing consensus on the need to eliminate such subsidies, countries are still reluctant to undertake legally binding commitments. The recent history of international negotiations suggests that building the necessary political will for a binding multilateral agreement on phasing out fossil-fuel subsidies will require, among other things, a core group of 'like-minded' countries that push for action. Until the creation of the FFFSR in 2010, the global effort to phase out fossil-fuel subsidies had no such support. The FFFSR's active participation in the fight against fossil-fuel subsidies indicates that group is well positioned to lead international efforts to phase out fossil-fuel subsidies.

6.3.1 Defining fossil-fuel subsidies

It is not possible to forge a successful multilateral legal regime for fossil-fuel subsidy reform without a clear and reasonable definition of fossil-fuel subsidies. Past efforts to define subsidies are characterized by disagreement on how broadly subsidies should be defined, prompting the inclusion of vague language such as 'inefficient' and 'harmful' in fossil-fuel subsidy reform commitments. Defining what is and what is not a subsidy is problematic. Defining subsidies too broadly runs the risk of including virtually all public sector activity and undermining the policy space of governments. Such a definition is more likely to be contested by governments that are reluctant to undertake comprehensive subsidy reforms. Defining subsidies too narrowly runs the risk of excluding a range of government support measures to the fossil-fuel industry. It would also allow countries to circumvent their commitment to remove fossil-fuel subsidies by simply

replacing one form of subsidy with another. Thus, the first challenge will be finding a reasonable definition of fossil-fuel subsidies. In this regard, the WTO's definition of subsidies offers a sound starting point as it 'has been tried and tested through a rigorous negotiating process and is supported by extensive legal analysis and jurisprudence' (GSI 2010). However, it is worth noting that the WTO's subsidy definition was designed with the specific purpose of disciplining trade-distorting subsidies and has never been tested in a dispute involving fossil-fuel subsidies.

6.3.2 Enhancing transparency

Transparency is another necessary prerequisite for a successful subsidy reform both at the national and international level. It provides a clear and comprehensive picture of fossil-fuel subsidies, which is essential to assess their costs and benefits. It also helps to garner the necessary public support for subsidy reforms by exposing the vested interests involved (Laan 2010). Moreover, experience from previous international subsidy reform efforts suggests that accurate information about the extent and nature of subsidies is crucial to get negotiations off the ground (Laan 2010; Steenblik 2010). Such information is not yet forthcoming, however, either because 'governments themselves do not have full records on the range of support measures in place in their jurisdictions', or because they 'often do not see it in their best interests to disclose subsidies' (GSI 2012a).¹⁴ The problem is exacerbated at the international level by the 'absence of an international system or protocol to comprehensively assess and monitor fossil-fuel subsidies' (GSI 2012a). The voluntary self-reporting and peer-review mechanisms of the G20 and APEC have shown that such mechanisms are unlikely to be sufficient to improve transparency (Casier et al. 2014). It is therefore imperative to devise a mandatory notification or reporting mechanism, which facilitates the collection of data across countries through a commonly agreed reporting format and methodology. This would improve transparency, as well as allowing for comparability of data across countries. It would also help to monitor and ensure compliance with international fossil-fuel subsidy reform commitments.

6.3.3 Clear and enforceable commitments

One of the shortcomings of previous intergovernmental fossil-fuel subsidy reform efforts was the lack of clear-cut commitments to phase out fossil-fuel subsidies. Apart from their non-binding nature, the commitments were vague and indefinite. It is desirable to clearly and explicitly set out each and every country's commitment to phase out fossil-fuel subsidies. Perhaps the most effective way to do so is to ban certain fossil-fuel subsidies and/or impose a quantitative limit on the overall level of subsidies a country may provide.¹⁵ Given how deeply entrenched fossil-fuel subsidies are in many countries, it is unrealistic to expect countries to eliminate their fossil-fuel subsidies overnight (Beaton et al. 2013).¹⁶ A commitment to progressively eliminate fossil-fuel subsidies is more realistic than an outright ban. But, in order to be effective, such a commitment needs to be complemented by clear and explicit country-specific benchmarks and timelines for implementation. Moreover, a strong and effective enforcement mechanism is central to the successful implementation of such commitments.

¹⁴ Gregory Shaffer et al. (2015) further note that countries 'might worry about providing adverse information for a potential legal dispute'.

¹⁵ Here examples can be drawn from the SCM Agreement's outright ban on export contingent and import substitution subsidies, and the Agreement on Agriculture's (AOA) *de minimis* limit, respectively.

¹⁶ It is also worth noting that all the previous international fossil-fuel subsidy reform commitments require the gradual but not instant removal of fossil-fuel subsidies. However, they stipulate neither clear benchmarks nor definite timelines for the elimination of fossil-fuel subsidies.

Without an effective enforcement mechanism commitments are likely to remain voluntary regardless of their legal status.

6.3.4 Ensuring wide participation

The ultimate purpose of negotiating a multilateral agreement to phase out fossil-fuel subsidies is to reduce greenhouse gas emissions and accelerate the transition away from fossil fuels. Such a purpose is best achieved when all countries participate in the process. However, it is clear that not all countries are yet ready to get rid of their fossil-fuel subsidies. This has to do with the level of subsidies, the policy rationales behind them, the technical and institutional capacity to undertake reform, and the political economy of each country. These factors magnify the long-standing divergence between developed and developing countries, and between energy-producing and energy-consuming countries. Energy-producing countries use subsidies to achieve a much wider objective than that of protecting poor households from high and rising fuel prices. For them, subsidies are also a means of sharing national natural resource wealth and maintaining their natural comparative advantage (Krane 2014). Although studies have shown that subsidies are inefficient in achieving such objectives, it will take time and effort to bring these countries on board. During the 2012 Rio+20 Conference, for example, oil-producing countries such as Qatar, Saudi Arabia, and Venezuela successfully blocked the proposal to phase out fossil-fuel subsidies.

Developing countries present another major hurdle in reaching a multilateral agreement on fossil-fuel subsidies. This is partly because subsidies lie at the heart of their poverty alleviation strategies and they lack the necessary technical and institutional capacity to undertake subsidy reforms (Commander 2012). Further fuelling the problem is the fact that consumption subsidies, which are relatively easy to identify and hence have become the focus of international subsidy reform efforts, are more prevalent in developing countries than in developed countries. This makes any agreement to phase out fossil-fuel subsidies much more burdensome for developing countries, thereby reducing their willingness to undertake binding commitments. One possible means of overcoming this problem is the provision of capacity-building and technical assistance support for developing countries that join the agreement. Another way is to incorporate flexible rules for developing countries whereby they will be given longer transition periods to phase out their fossil-fuel subsidies.

6.4 The quest for an institutional home: in whose court is the ball?

The issue of fossil-fuel subsidy reform has been raised in international forums as diverse as the G20, APEC, IMF, World Bank, UNCSD, UNEP, OECD, IEA, UNFCCC, FFSR, WTO, and the Energy Charter Treaty.¹⁷ On the one hand, this confirms the cross-cutting nature of the issue (and that the need to phase out fossil-fuel subsidies stems not only from environmental, but also from development and economic concerns). On the other hand, it shows that the quest to phase out fossil-fuel subsidies has no single institutional home at the international level. This is not necessarily a problem per se, but the process of reaching and implementing any major international agreement (negotiation, ratification, and compliance) requires such an institutional framework (Alvarez 2005). A single international organization is needed to coordinate the fragmented international efforts, to provide a forum for negotiations towards an international agreement, and oversee the implementation of the agreement. Since all the international organizations involved in the fight against fossil-fuel subsidies are not equally suitable, it is pertinent to ask: which international organization is best suited to take on this role? It is relatively

¹⁷ Non-governmental organizations such as the GSI, Greenpeace, and Earth Track have also become active players in the global effort to phase out fossil-fuel subsidies.

easy to exclude some of the organizations from the outset because they lack a secretariat, which can carry out a ‘leadership role’ in an international treaty-making process (that is, G20, FFFSR, UNCSD), because they have a limited membership size (APEC, IEA, and OECD), or because the issue of fossil-fuel subsidy reform does not fall within their direct mandate (Energy Charter Treaty). The same goes for organizations that are not forums for negotiations as such (UNEP, the IMF, and the World Bank). This leaves us with the UNFCCC and the WTO, and we next examine each of them in turn to see which one is better equipped to fill the institutional vacuum and provide an institutional home for negotiating and overseeing the implementation of an international agreement on fossil-fuel subsidies.

6.4.1 The UNFCCC

Since environmental concerns are at the forefront of the quest to end fossil-fuel subsidies, the international environmental regime is the most logical starting point in the search for an institutional home for global fossil-fuel subsidy governance.¹⁸ The UNFCCC stands out in this respect as the only legitimate and comprehensive forum for international climate negotiations. It entered into force in 1994 and has been ratified by more than 196 countries as of 2015. This almost universal membership makes it an ideal forum to pursue a multilateral agreement on fossil-fuel subsidies. Such an agreement also fits well with its ultimate objective of reducing and stabilizing atmospheric greenhouse gas emission levels so as to prevent dangerous anthropogenic climate change (UN 1992: Art. 2). As a framework convention, the UNFCCC does not specify the policies and measures that are necessary to achieve this objective. However, it authorizes the COP (Conference of Parties), which is the ‘supreme body’ of the convention, to adopt protocols addressing such inadequacies (UN 1992: Arts 4(2)(d), 17(1)). As discussed in section 5, the Kyoto Protocol, which is the first legally binding protocol adopted by the COP, recognizes the phasing out of subsidies in greenhouse-gas emitting sectors as one of the policies and measures countries should take to reduce greenhouse gas emissions. What remains to be done now is to make this recognition more specific, convert it into a binding commitment, and extend its scope of application to the entire UNFCCC membership.

The first step towards this end was expected to be taken by COP21 in Paris. The draft negotiating text of the Paris Agreement had two provisions related to fossil-fuel subsidies. The first one urges ‘parties to reduce international support for high-carbon investments, including international fossil-fuel subsidies’, while the second lists ‘the phasing down of high-carbon investments and fossil-fuel subsidies’ as one of the climate finance options. The inclusion of such provisions in a legally binding international agreement would have been a great step forward, but none of these provisions made it into the final text of the agreement. What is left in the final text of the Paris Agreement is Article 2(c), which states that the agreement aims to strengthen the global response to the threat of climate change, including by ‘[making] finance flows consistent with a pathway towards low greenhouse-gas emissions and climate resilient development’ (UNFCCC 2015). The Paris Agreement largely follows the approach that has been pursued by the UNFCCC and its Kyoto Protocol. Neither the UNFCCC nor the Kyoto Protocol mandate specific policies or measures to reduce greenhouse gas emissions. They rather leave it almost entirely to the discretion of each country to decide which specific policies or measures they will take to reduce greenhouse gas emissions. This, *inter alia*, reflects the high regard with which the principle of national sovereignty is held within the international environmental regime (Lang et al. 2010). The prevailing approach seems to be to leave the choice of specific policy actions to the discretion of each country as long as they meet their emission reduction

¹⁸ The international environmental regime suffers from fragmentation and overlap (with more than 500 Multilateral Environmental Agreements) (van Asselt 2013).

commitments. The main focus of international climate negotiations that have been taking place under the auspices of the UNFCCC has largely been on determining countries' emission reduction commitments, but not on the specific domestic measures countries should take to meet those commitments. It is therefore too optimistic to expect the UNFCCC to mandate specific policy actions in the first place and, second, to create a multilateral legal regime for fossil-fuel subsidy reform. This has been confirmed by the Paris Agreement, which largely refrained from prescribing domestic policies.

6.4.2 Is the ball in the WTO's court?

It is axiomatic that WTO is not an environmental protection organization. However, this does not mean that it has no role to play in the protection of the environment or that it cannot serve as a forum for global fossil-fuel subsidy governance. First, the issue of fossil-fuel subsidy reform is economic as much as it is environmental. Second, although it is not an environmental organization per se, sustainable development that protects and preserves the environment lies at the heart of the WTO. This is clearly stated in the preamble to the agreement establishing the WTO and further concretized by several other provisions that provide significant scope for environmental protection, such as Article XX of the GATT (Kulovesi 2014). Third, and perhaps most importantly, fossil-fuel subsidies have been a subject of discussion in the WTO ever since the issue was raised during the 1982 GATT Ministerial Conference, where concerns about the dual pricing practices of energy-exporting countries were discussed (Lang et al. 2010). The relevant question is therefore not whether the issues of fossil-fuel subsidies fall under the domain of the WTO, but rather whether the WTO is best suited to address them. In the remainder of this sub-section we argue in favour of a positive answer to this question.

First of all, the only existing binding multilateral rules applicable to fossil-fuel subsidies are those contained in the SCM Agreement of the WTO. The agreement was negotiated during the Uruguay Round, with the overarching objective of disciplining trade-distorting (but not necessarily environmentally harmful) subsidies. This means that the agreement applies to fossil-fuel subsidies insofar as they distort trade.¹⁹ The main situations where fossil-fuel subsidies might distort trade are when they benefit fossil-fuel producers or energy-intensive industries (Asmelash 2015). Even in such cases, not all trade-distorting subsidies are prohibited. The only prohibited subsidies are those that are contingent upon export performance or upon the use of domestic over imported goods (WTO 1995: Art. 3). Fossil-fuel subsidies hardly take the form of export or import substitution subsidies. For one thing, the fossil-fuel sector is riddled with export restraints. For another, fossil-fuel producing countries hardly face competition at home and hence import substitution subsidy is not an issue. Indeed, fossil-fuel subsidies may still be challenged under the SCM Agreement as actionable subsidies, but they have to meet the specificity and adverse effects requirements thereof. The specificity requirement entails that the subsidy has to be provided to an industry/enterprise or group of industries/enterprises (SCM Agreement: Arts 1(2) and 2). Fossil-fuel production subsidies could meet this requirement as they tend to be industry specific, but most fossil-fuel consumption subsidies are universal. That is, they are provided to all enterprises throughout the economy, and hence are de jure non-specific. Some international trade law scholars have argued that such subsidies only or disproportionately benefit energy-intensive industries, and thus constitute at least de facto specificity within the meaning of Article 2(1)(c) (Howse 2010). However, establishing de facto specificity is complex and requires subsidy-specific factual analysis. Even then, there is the adverse effects requirement. Energy is a key input for energy-intensive industries, but it is not the

¹⁹ Indeed, they have to meet the financial contribution and benefit requirements set out in Article 1 of the SCM Agreement to qualify as a 'subsidy' in the first place.

only input. This makes the task of establishing the causal link between the subsidized imports and the adverse effect thereof problematic. In principle, fossil-fuel production subsidies could adversely affect like fossil-fuel producers in other countries. However, almost all fossil-fuel producing countries provide one or another form of subsidy to their fossil-fuel sector, and thus are reluctant to challenge each other's subsidy schemes. In general, the existing multilateral subsidy rules appear to be inadequate to address the fossil-fuel subsidies issues. It is desirable to at least strengthen the rules so that they can capture and/or discipline not only trade-distorting, but also inefficient and environmentally harmful fossil-fuel subsidies. It should be much easier to work around an existing agreement than try to negotiate a whole new agreement. And it goes without saying that this could be achieved best through an organization that already possess the necessary experience and expertise in dealing with multilateral subsidy rules. It is also noteworthy that the WTO has already engaged in addressing environmentally harmful subsidies in the fisheries sector. Concerns about the effect of subsidies on the depletion of feedstocks are the main driver behind the ongoing negotiations on fisheries subsidies (Bigdeli 2008). Given the similarity of purpose, it is more logical to address both issues under the auspices of the same organization.

Addressing the issues of fossil-fuel subsidies within the WTO would allow a holistic approach to energy subsidies to be pursued. Although the SCM Agreement applies to both renewable and fossil-fuel subsidies, only renewable energy subsidies have been the subject of legal disputes so far. Seven cases have been filed since Japan brought the first ever energy subsidies related case in 2010. Although all these cases involve local content requirements, which are directly contrary to the non-discrimination principle of the WTO, the absence of any explicit exemption for environmentally friendly subsidies has created legal uncertainty. Any effort to address fossil-fuel subsidies within the WTO offers an opportunity to resolve this legal uncertainty as well.

The WTO also has well-established institutional machinery capable of providing technical assistance for developing countries, estimating and analysing the economic and environmental impacts of fossil-fuel subsidies, enhancing transparency, and facilitating multilateral negotiations. Despite its limited success, the SCM Agreement has already created a notification and surveillance mechanism, which could serve as a useful basis for developing a more effective monitoring and notification mechanism for fossil-fuel subsidies. There is also the Trade Policy Review Mechanism (TPRM), which regularly reviews the members' trade policies. Currently, it does not address energy subsidies specifically, but it could easily be made to do so.

Another reason that makes the WTO an appropriate forum for negotiating multilateral fossil-fuel subsidy rules is the binding nature of its dispute settlement mechanism. The Kyoto Protocol has also created a unique compliance mechanism, but it is not comparable to that of the WTO, which is strengthened by the threat of withdrawal of concessions or the imposition of trade barriers.

7 Conclusion

Growing environmental and energy security concerns have placed the transition to a sustainable energy future at the forefront of the sustainable development agenda. Available evidence, however, suggests that the transition is not proceeding at a pace fast enough to meet the internationally agreed target of keeping global average temperature increase below 2°C. One of the major obstacles to the sustainable energy transition is the subsidization of fossil fuels. Besides generating a heavy fiscal drain on government budget, fossil-fuel subsidies encourage the wasteful consumption of carbon-intensive fuels (thereby contributing to the increase in greenhouse gas emissions) and impede the development of renewable energy technologies.

Recent estimates indicate that fossil-fuel consumption subsidies alone are more than four times higher than renewable energy subsidies. In recognition of their adverse environmental and economic effects, many countries are now trying to phase out fossil-fuel subsidies both at the national and international levels. Despite these efforts, however, fossil-fuel subsidies remain prevalent around the world. This paper has focused on the international legal framework that supports the global effort to phase out fossil-fuel subsidies. One conclusion that stems from the review of the existing intergovernmental initiatives for fossil-fuel subsidy reform is that the current international legal framework for phasing out fossil-fuel subsidies suffers from fragmentation, lack of a common definition of what constitutes fossil-fuel subsidies, limited transparency, and lack of binding commitment and effective enforcement mechanisms. Strengthening the existing legal framework in a manner that is effective in accelerating fossil-fuel subsidy reforms and ensuring the durability of the initiated reforms requires transforming the current political commitments into legally binding commitments. Towards this end, this paper has proposed and attempted to examine the challenges and prospects of negotiating a binding multilateral agreement on phasing out fossil-fuel subsidies. Achieving such an agreement will not be an easy task and will require strong political will and leadership to initiate the process and carry it to completion. However, the combination of the fall in international oil prices and the growing consensus on the need to reform fossil-fuel subsidies has created enough momentum to at least initiate the process. The main challenges will be defining what constitutes fossil-fuel subsidies, bridging the developed–developing country gap, and setting out enforceable obligations with implementation timelines. Without an agreement on such issues international initiatives for fossil-fuel subsidy reform are unlikely to succeed. An attempt to create a new multilateral agreement on fossil-fuel subsidies should build on the existing international rules relevant to fossil-fuel subsidies. The multilateral subsidy rules embodied in the SCM Agreement of the WTO provide such a basis. However, the SCM Agreement is inadequately equipped to discipline fossil-fuel subsidies. Negotiating a new agreement will offer an opportunity to create new rules that provide effective support for global fossil-fuel subsidy reform efforts.

In light of the multiplicity of international organizations engaged in global fossil-fuel subsidy governance, this paper further explored the quest for an institutional home for the negotiation and implementation of such an agreement. In this respect, the UNFCCC and the WTO appear to be the best candidates for various reasons, which include their mandate, membership size, and strong institutional machinery. However, as the only international organization with a proven track record of negotiating and enforcing binding multilateral subsidy rules, the WTO seems to be the most appropriate forum for negotiating a multilateral agreement on fossil-fuel subsidies. But the issue has to be placed on its negotiating agenda first. In this regard, it is up to the FFFSR to emulate what the Friends of Fish did for fisheries subsidies and put fossil-fuel subsidies on the negotiating agenda. Norway and New Zealand (on behalf of FFFSR) recently raised the issue of fossil-fuel subsidy reform in the WTO's Committee on Trade and Environment. This is a very important step in the right direction, but it should be followed by a formal proposal for negotiations. Although reaching a multilateral agreement has become increasingly difficult in the WTO, the recent agreement to abolish agricultural subsidies reached at the 10th WTO Ministerial Conference held in Nairobi, Kenya, from 15 to 19 December 2015, proves that if there is a will, there is always a way.

References

- Aldy, J.E. (2015). 'Policy Surveillance in the G20 Fossil-fuel Subsidies Agreement: Lessons for Climate Policy'. Discussion Paper 2015–70. Cambridge, MA: Harvard Project on Climate Agreements.
- Alvarez, J.E. (2005). *International Organizations as Law Makers*. Oxford: Oxford University Press.
- APEC (2009). 'APEC Leaders' Declaration: Sustaining Growth, Connecting the Region'. 14–15 November, Singapore.
- Asmelash, H.B. (2015). 'Energy Subsidies and WTO Dispute Settlement: Why Only Renewable Energy Subsidies are Challenged'. *Journal of International Economic Law*, 18(2): 261–85.
- Barany, A., and D. Grigonyte (2015). 'Measuring Fossil-fuel Subsidies'. *ECFIN Economic Brief*, 40: 1–13.
- Bast, E., A. Doukas, S. Pickard, L. Van Der Burg, and S. Whitley (2015). *Empty Promises: G20 Subsidies to Oil, Gas and Coal Production*. London: Overseas Development Institute.
- Barnosky, A.D. (2015). 'Transforming the Global Energy System is Required to Avoid Sixth Mass Extinction'. *MRS Energy and Sustainability*, 2(10): 1–13.
- Beaton, C., I. Gerasimchuk, T. Laan, K. Lang, D. Vis-Dunbar, and P. Wooders (2013). *A Guidebook to Fossil-fuel Subsidy Reform for Policy-makers in Southeast Asia*. Winnipeg: IISD.
- Benes, K., A. Cheon, J. Urpelainen, and J. Yang (2015). 'Low Oil Prices: An Opportunity for Fuel Subsidy Reform'. New York: Columbia University.
- Bigdeli, S. (2008). 'Will the "Friends of Climate" Emerge in the WTO? The Prospect of Applying the "Fisheries Subsidies" Model to Energy Subsidies'. *Carbon and Climate Law Review*, 2(1): 78–88.
- Bridle, R., and L. Kitson (2014). *The Impact of Fossil-fuel Subsidies on Renewable Electricity Generation*. Winnipeg: IISD.
- Bridle, R., L. Kitson, and P. Wooders (2014). *Fossil-fuel Subsidies: A Barrier to Renewable Energy in Five Middle East and North African Countries*. Winnipeg: IISD.
- Burniaux, J.-M., and J. Chateau (2014). 'Greenhouse-gases Mitigation Potential and Economic Efficiency of Phasing out Fossil-fuel Subsidies'. *International Economics*, 140: 71–88.
- Casier, L., R. Fraseer, M. Halle, and R. Wolfe (2014). 'Shining a Light on Fossil-fuel Subsidies at the WTO: How NGOs Can Contribute to WTO Notification and Surveillance'. *World Trade Review*, 13(4): 603–32.
- Cheon, A. (2015). 'Instruments of Political Control: National Oil Companies, Oil Prices and Petroleum Subsidies'. *Comparative Political Studies*, 48(3): 370–402.
- Cheon, A., and J. Urpelainen (2012). 'Oil Prices and Energy Technology Innovation: An Empirical Analysis'. *Global Environmental Change*, 22(2): 407–17.
- Coady, D., and B. Shang (2015). 'Energy Subsidies in Developing Countries: Treating the Disease while Symptoms Abate'. Available at: <http://www.voxeu.org/article/energy-subsidies-developing-countries> (accessed March 2016).
- Coady, D., R. Gillingham, R. Ossowski, J. Piotrowski, S. Tareq, and J. Tyson (2010). 'Petroleum Product Subsidies: Costly, Inequitable, and Rising'. Staff Position Note SPN/10/05. Washington, DC: IMF.

- Coady, D., I. Parry, L. Sears., and B. Shang (2015a). ‘How Large Are Fossil-fuel Subsidies?’ IMF Working Paper WP/15/105. Washington, DC: IMF.
- Coady, D., V. Flamini, and L. Sears (2015b). ‘The Unequal Benefits of Fuel Subsidies Revisited: Evidence for Developing Countries’. Working Paper WP/15/250. Washington, DC: IMF.
- Commander, S. (2012). ‘A Guide to the Political Economy of Reforming Energy Subsidies’. IZA Policy Paper 52. Bonn: Institute for the Study of Labor.
- del Granado, J.A., D. Coady, and R. Gillingham (2010). ‘The Unequal Benefits of Fuel Subsidies: A Review of Evidence for Developing Countries’. IMF Working Paper WP/10/202. Washington, DC: IMF.
- Ellis, J. (2010). ‘The Effect of Fossil-fuel Subsidy Reform: A Review of Modeling and Empirical Studies’. Geneva: Global Subsidy Initiative.
- Fattouh, B., and L. El-Katiri (2012). *Energy Subsidies in the Arab World*. Arab Human Development Report Research Paper Series 2002. New York: UNDP.
- Feaver, D., W. McGoldrick, and V. Boyd-Wells (2010). ‘Is Australia’s EAP a Prohibited Export Subsidy?’. *Journal of World Trade*, 44(2): 319–47.
- Fernandez, R., and J. Portes (1998). ‘Returns to Regionalism: An Analysis of Nontraditional Gains from Regional Trade Agreements’. *World Bank Economic Review*, 12(2): 197–220.
- FFFSR (2015). Fossil-fuel Subsidy Reform Communiqué, 17 April. Available at: <http://fffsr.org/communique/> (accessed March 2016).
- G7 Leaders (2015). Leaders’ Declaration, 7–8 June, Schloss Elmau, Germany.
- G20 Leaders (2009). Leaders’ Statement: The Pittsburgh Summit, 24–25 September.
- G20 (2012). Leaders’ Declaration: The Los Cabos Summit, 19 June.
- Gerasimchuk, I. (2013). *Mapping Options for a Voluntary Peer Review of Fossil-fuel Subsidy Reform within the G-20*. Winnipeg: IISD.
- Gerasimchuk, I. (2015). ‘Fossil-fuel Subsidy Reform: Critical Mass for Critical Change’. Working Paper, May. Austin: University of Texas at Austin.
- GSI (2009). ‘Building Fossil-fuel Subsidy Reform: Have We Got All the Blocks?’. Global Subsidies Initiative Policy Brief. Available at: https://www.iisd.org/gsi/sites/default/files/pb3_buildblocks.pdf (accessed February 2016).
- GSI (2010). ‘Defining Fossil-fuel Subsidies for the G20: Which Approach is Best?’. Global Subsidies Initiative Policy Brief. Available at: https://www.iisd.org/gsi/sites/default/files/pb5_defining.pdf (accessed March 2016).
- GSI (2012a). *Reforming Fossil-fuel Subsidies to Reduce Waste and Limit CO2 Emissions while Protecting the Poor*. Geneva: GSI.
- GSI (2012b). ‘Overcoming the Barriers to Subsidy Reform for a Greener Economy’. Available at: https://www.iisd.org/gsi/sites/default/files/ffs_sideevent_overcoming.pdf (accessed March 2016).
- Gupta, S., and M. Keen (2015). ‘Global Energy Subsidies Are Big: About US\$5 Trillion Big’. Available at: <http://blog-imfdirect.imf.org/2015/05/18/global-energy-subsidies-are-big-about-us5-trillion-big/> (accessed February 2016).
- Haggard, S., and S.B. Webb (eds) (1994). *Voting for Reform: Democracy, Political Liberalization and Economic Adjustment*. New York: Oxford University Press.

- Houthakker, H.S. (1972). 'The Control of Special Benefit Programs'. In: U.S. Congress, Joint Economic Committee, *The Economics of Federal Subsidy Programs: A Compendium of Papers*. 92nd Congress. Washington, DC: Government Printing Office.
- Howse, R. (2010). 'Climate Mitigation Subsidies and the WTO Legal Framework: A Policy Analysis'. Winnipeg: IISD.
- IEA (2011). *World Energy Outlook 2011*. Paris: IEA.
- IEA (2012). *World Energy Outlook 2012*. Paris: IEA.
- IEA (2015a). *World Energy Outlook 2015*. Paris: IEA.
- IEA (2015b). *Energy and Climate Change: World Energy Outlook Special Report*. Paris: IEA.
- IMF (2013). *Energy Subsidy Reform: Lessons and Implications*. Washington, DC: IMF.
- IMF (2015). 'Learning to Live with Cheaper Oil Amid Weaker Demand'. IMF Regional Economic Outlook Update. Washington, DC: IMF.
- IPCC (2014a). *Climate Change 2014: Synthesis Report – Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Geneva: IPCC.
- IPCC (2014b). *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge: Cambridge University Press.
- IRENA (2015). 'Renewable Energy Target Setting'. Abu Dhabi: International Renewable Energy Agency.
- Kojima, M. (2009). *Government Response to Oil Price Volatility: Experience of 49 Developing Countries*. Washington, DC: World Bank.
- Koplow, D. (2009). 'Measuring Energy Subsidies Using the Price-Gap Approach: What Does it Leave Out?' Winnipeg: IISD.
- Koplow, D. (2012). 'Phasing Out Fossil-fuel Subsidies in the G20: A Progress Update'. Cambridge: Earth Track, Inc. and Oil Change International.
- Koplow, D. (2014). 'Global Energy Subsidies: Scale, Opportunity, and Barriers to Reform'. In A. Halff, Sovacool, B.K., and Rozhon, J. (eds), *Energy Poverty: Global Challenges and Local Solutions*. Oxford: Oxford University Press.
- Koplow, D., and J. Dernbach (2001). 'Federal Fossil-fuel Subsidies and Greenhouse-gas Emissions: A Case Study of Increasing Transparency for Fiscal Policy'. *Annual Review of Energy and Environment*, 26: 361–89.
- Krane, J. (2014). 'Navigating the Perils of Energy Subsidy Reform in Exporting Countries'. Baker Institute Policy Report 58. Available at: <http://bakerinstitute.org/files/8679/> (accessed March 2016).
- Kulovesi, K. (2014). 'Real or Imagined Controversies? A Climate Law Perspective on the Growing Link between the International Trade and Climate Change Regime'. *Trade, Law and Development*, 6(1): 55–92.
- Laan, T. (2010). *Gaining Traction: The Importance of Transparency in Accelerating the Reform of Fossil-fuel Subsidies*. Geneva: GSI.
- Lang, K. (2011). 'The First Year of the G20 Commitment on Fossil-fuel Subsidies: A Commentary on Lessons Learned and the Path Forward'. Winnipeg: IISD.

- Lang, K., P. Wooders, and K. Kulovesi (2010). *Increasing the Momentum of Fossil-fuel Subsidy Reform: A Roadmap for International Cooperation*. Winnipeg: IISD.
- Larsen, B., and A. Shah (1992). 'World Fossil Fuel Subsidies and Global Carbon Emissions'. Policy Research Working Papers WPS 1002. Washington, DC: World Bank.
- Looney, R. (1999). 'Subsidies'. In: R.J. Barry Jones (ed.), *Routledge Encyclopedia of International Political Economy*. London: Routledge.
- Merrill, L., M. Harris, L. Casier, and A.M. Bassi (2015). 'Fossil-fuel Subsidies and Climate Change: Options for Policy-makers within their Intended Nationally Determined Contributions'. Winnipeg: IISD.
- Milthorp, P., and D. Christy (2012). 'Energy Issues in Selected WTO Accessions'. In J. Selivanova (ed.), *Regulation of Energy in International Trade Law: WTO, NAFTA and Energy Charter*. Alphen aan den Rijn: Kluwer Law International.
- Morgan, T. (2007). 'Energy Subsidies: Their Magnitude, How they Affect Energy Investment and Greenhouse-gas Emissions, and Prospects for Reform'. Geneva: UNFCCC.
- OECD (1998). *Improving the Environment Through Reducing Subsidies – Parts I–III*. Paris: OECD.
- OECD (2015). *Companion to the Inventory of Support Measures for Fossil Fuels 2015*. Paris: OECD.
- Olson, M. (1965). *The Logic of Collective Action: Public Goods and the Theory of Groups*. Cambridge, MA: Harvard University Press.
- Overland, I. (2010). 'Subsidies for Fossil-fuels and Climate Change: A Comparative Perspective'. *International Journal of Environmental Studies*, 67(3): 303–17.
- Parry, I., D. Heine, E. Lis, and S. Li (2014). *Getting Energy Prices Right: From Principle to Practice*. Washington, DC: IMF.
- Pitt, M.M. (1985). 'Equity, Externalities and Energy Subsidies: The Case of Kerosene in Indonesia'. *Journal of Development Economics*, 17: 201–17.
- PricewaterhouseCoopers (2014). 'Two Degrees of Separation: Ambition and Reality—Low Carbon Economy Index 2014'. London: PricewaterhouseCoopers LLP.
- Rubini, L. (2009). *The Definition of Subsidy and State Aid: WTO and EC Law in Comparative Perspective*. Oxford: Oxford University Press.
- Shaffer, G., R. Wolfe, and V. Le (2015). 'Can Informal Law Discipline Subsidies?' *Journal of International Economic Law*, 18(4): 711–41.
- Smil, V. (2010). *Energy Transitions: History, Requirements, Prospects*. Santa Barbara, CA: Praeger.
- Steenblik, R. (2010). 'Subsidies in the Traditional Energy Sector'. In P. Joost (ed.), *Global Challenges at the Intersection of Trade, Energy, and the Environment*. Geneva: The Graduate Institute.
- UN (1992). UN Framework Convention on Climate Change. Available at: <https://unfccc.int/resource/docs/convkp/conveng.pdf> (accessed March 2016).
- UN (1998). Kyoto Protocol to the United Nations Framework Convention on Climate Change, 10 Dec. 1997. Available at: <http://unfccc.int/resource/docs/convkp/kpeng.pdf> (accessed March 2016).
- UN (2012). General Assembly Resolution 66/288: The Future We Want, A/RES/66/288. New York: United Nations.

- UNEP (2008). 'Reforming Energy Subsidies: Opportunities to Contribute to the Climate Change Agenda'. Available at: http://www.unep.org/pdf/pressreleases/reforming_energy_subsidies.pdf (accessed March 2016).
- UNEP and IEA (2001). 'Energy Subsidy Reform and Sustainable Development: Challenges for Policy Makers'. Background paper 14. New York: UNEP.
- UNFCCC (2015). Paris Agreement, FCCC/CP/2015/L.9, done at Paris, 12 December.
- Unruh, G.C. (2000). 'Understanding Carbon Lock-in'. *Energy Policy*, 28(12): 817–30.
- Vagliasindi, M. (2013). *Implementing Energy Subsidy Reforms: Evidence from Developing Countries*. Washington, DC: World Bank.
- van Asselt, H. (2013). 'Managing the Fragmentation of International Climate Law'. In E. Hollo, K. Kulovesi, and M. Mehling (eds), *Climate Change and the Law*. Berlin: Springer.
- Victor, D. (2009). 'Untold Billions: Fossil-fuel Subsidies, their Impacts and the Path to Reform. The Politics of Fossil-fuel Subsidies'. Geneva: GSI.
- WTO (1995) Agreement on Subsidies and Countervailing Measures (SCM Agreement). Available at: https://www.wto.org/english/docs_e/legal_e/24-scm.pdf (accessed March 2016).
- WTO (2004). WTO Appellate Body Report, United States—Final Countervailing Duty Determination with Respect to Certain Softwood Lumber from Canada, WT/DS257/AB/R, 19 January.
- World Bank (2015a). *Global Economic Prospects: Having Fiscal Space and Using It*. Washington, DC: World Bank.
- World Bank (2015b). *Global Economic Prospects: The Global Economy in Transition*. Washington, DC: World Bank.