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Fossil Fuel Subsidies and the Global Climate Regime

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8.1 Introduction

The adverse environmental, economic and social implications of the sizeable subsidies handed out by governments for the production and consumption of fossil fuels are increasingly clear. These implications are particularly significant for the socio-environmental challenge of addressing climate change. Anthropogenic climate change mainly results from the combustion of fossil fuels such as coal, oil and gas, with fossil fuel combustion accounting for 69 per cent of global greenhouse gas (GHG) emissions in 2010 (Blanco et al. 2014: 354). Indeed, there is an increasing recognition that to avoid dangerous climate change, most fossil fuel reserves will need to be left in the ground (IEA 2012; McGlade and Ekins 2015). By promoting the extraction and use of fossil fuels, subsidies thus exacerbate the climate problem.

Against this background, it is perhaps striking that the global climate regime put in place by the United Nations Framework Convention on Climate Change (UNFCCC) hardly addresses fossil fuel subsidies. This is in part due to the mitigation architecture of the global climate regime: the international climate treaties do not specify which policies and measures countries are required to implement to reduce GHG emissions, leaving each country free to choose how to mitigate climate change. However, the lack of substantive obligations related to fossil fuel subsidies – or, conversely, measures to reform or remove them – also reflects broader concerns about the governance of this sensitive issue area of energy policy.

This chapter explores how the global climate regime established by the UNFCCC has governed and could govern fossil fuel subsidies. It begins by reviewing the literature documenting the relationship between fossil fuel subsidy (reform) and climate change (mitigation), which reveals not only that there is increasing evidence of the impacts of fossil fuel subsidies on GHG emissions but also that efforts to reform subsidies can yield important climate change mitigation benefits. The chapter then moves on to discuss how parties to the UNFCCC have by and

large sought to avoid addressing fossil fuel subsidies directly, notwithstanding efforts by some parties. Although this could lead one to conclude that the global climate regime has had no discernible influence on fossil fuel subsidy reform at the national level, the chapter moves on to discuss the various ways in which the UNFCCC can exert influence on fossil fuel subsidy reform in the future.

The chapter concludes that even though the role of the UNFCCC in the broader regime complex for fossil fuel subsidies may be constrained (Van de Graaf and van Asselt 2017), it can nevertheless be an important complementary venue for promoting fossil fuel subsidy reform by (1) increasing the reputational costs of not following through on voluntary pledges to reform subsidies, (2) improving transparency around fossil fuel subsidies, (3) changing incentive structures by providing financial support, (4) strengthening an emerging international social norm on fossil fuel subsidy reform and (5) offering a platform for inter-country learning.

8.2 The Climate Change Impacts of Fossil Fuel Subsidies and Their Removal

There is a growing body of literature highlighting the impact of fossil fuel subsidies and their removal on emission reductions at both the global and national levels, particularly for consumer subsidies. This section reviews some of the key findings from these studies.

In terms of the climate impacts of fossil fuel subsidies, the International Energy Agency (IEA) suggests that 13 per cent of global carbon dioxide (CO₂) emissions in 2014 were from subsidised fossil fuels (equivalent to a subsidy of USD 115 per tonne of CO₂). In comparison, all the emissions trading schemes in the world in 2014 covered only 11 per cent of global CO₂ emissions (IEA 2015b: 23). This estimate (based on the IEA's price-gap methodology; also see Chapter 2) may still be conservative, however. Stefanski (2014, 2016), for instance, estimates that subsidies led to 36 per cent of global CO₂ emissions between 1980 and 2010. Focusing on the US government's tax breaks to the oil and gas industry, Erickson et al. (2017: 3) further suggest that 'the CO₂ emissions associated with subsidy-dependent future U.S. oil production are equivalent to 1% of the remaining carbon budget for the entire world' (emphasis in original).¹

In addition to their contribution to increased fossil fuel production and consumption (and, by implication, to GHG emissions), fossil fuel subsidies prevent the uptake of renewable energy because they 'impair the competitiveness of renewable-energy technologies, reinforce the continuation of fossil fuel-based systems

¹ The 'carbon budget' refers to the maximum amount of CO₂ that can be released into the atmosphere to keep the global average temperature increase below 2°C with a more than 66 per cent likelihood (IPCC 2013).

and distort investment decisions in favour of fossil fuel technologies' (Bridle and Kitson 2014: 18). The negative climate impact of fossil fuel subsidies thus could be even greater if their effects on renewable energy promotion are considered part of the equation.

Various studies have modelled the impact of removing fossil fuel subsidies on emission reductions globally and for individual countries. The range of emission reductions from the phasing out of consumer fossil fuel subsidies is very broad, depending on the scenarios employed, the countries included in the modelling, the scale of the subsidies and the timeframe for the phase-out. For example, research by the Organisation for Economic Co-operation and Development (OECD) shows that removal of fossil fuel consumption subsidies could lead to global GHG emission reductions of about 3 per cent by 2020, rising to about 8 per cent by 2050 (Burniaux and Château 2014; Durand-Lasserve et al. 2015). The IEA (2015a) finds that accelerating the partial phase-out of subsidies to fossil fuel consumption would lead to a 10 per cent reduction in energy-sector emissions by 2030. Focusing on producer subsidies, Gerasimchuk et al. (2017) reveal that the removal of upstream subsidies to fossil fuel producers alone could result in emission reductions of up to 37 gigatonnes (Gt) of CO₂ equivalent, roughly corresponding to total annual global emissions.

In addition to these global estimates, several studies offer national estimates. Merrill et al. (2015a) examine 20 countries,² finding that if these countries would reduce their fossil fuel subsidies to zero between 2016 and 2020, this would result in average GHG emission reductions of about 11 per cent across these countries. Others have carried out country-specific studies. For instance, Lin and Ouyang (2014) estimate that the removal of consumer subsidies in China in 2006–10 led to emissions savings of 3.72 per cent of total CO₂ emissions during that period. In Turkey, the elimination of production subsidies to coal could yield CO₂-equivalent emission reductions of 2.5 per cent by 2030, and the removal of regional investment subsidies could result in reductions of 5.4 per cent (Acar and Yelden 2016).

Studies on the relationship between the phase-out of fossil fuel consumption subsidies and emissions reductions stress that although the removal of subsidies to consumers can lead to domestic and international GHG emission reductions, it requires policies to cap emissions (Burniaux and Château 2014; Schwanitz et al. 2014; Merrill et al. 2015b). For example, Burniaux and Chateau (2014) suggest that fossil fuel subsidy reform in the presence of an emissions cap increases emission reductions from about 8 to 10 per cent.

² Algeria, Bangladesh, China, Egypt, Ghana, India, Indonesia, Iran, Iraq, Morocco, Nigeria, Pakistan, Russia, Saudi Arabia, Sri Lanka, Tunisia, United Arab Emirates, United States, Venezuela and Vietnam.

A related finding is that fossil fuel subsidy reform will only have long-term impacts on emission reductions if it is implemented alongside complementary energy and climate policies. Notably, the savings can be reinvested into social safety nets to mitigate the impacts of rising energy prices or swapped in the energy system to enable a shift towards low-carbon energy sources. This is key to enabling a switch towards sustainable electricity, access to cleaner and sustainable fuels, investment in energy efficiency and domestic finance for public transport and sustainable-energy infrastructure such as renewables. For instance, Merrill et al. (2015a) found that if 30 per cent of the funds saved by removing fossil fuel subsidies were used for renewable energy (10 per cent) and energy efficiency (20 per cent), average emissions reductions from across 20 countries could go up from 11 to 18 per cent by 2020. This point is not new: in 1987, a paper noted that '[b]y redirecting the funds spent on energy subsidies, governments could mitigate the impacts of energy price increases on lower income groups. Tax rebates or investments in improving the energy efficiency of equipment used by the poor (kerosene lanterns and stoves, for instance) are two alternatives' (Kosmo 1987: 50). Although technologies have improved since then, the proposition is still valid. For example, a United Nations Environment Programme (UNEP) report explains that hypothetically redirecting one year's worth of kerosene subsidies towards kerosene-free lighting systems (e.g. solar) would eliminate the need for all subsequent subsidies for the service life of those new systems (UNEP 2014). More generally, achieving the combined renewable-energy targets for 2020 in the Middle East and North Africa could cost up to USD 200 billion, which is less than one year's worth of fossil fuel subsidies in the region (USD 237 billion; Bridle 2014).

In summary, fossil fuel subsidies emerge as a policy instrument that can engender carbon lock-in (i.e. the building of costly and long-lasting energy infrastructure; see Unruh 2000; Erickson 2015), further contributing to climate change. This also means, however, that *reform* of fossil fuel subsidies is a potentially powerful tool and catalyst for other policies to help deliver climate change goals, potentially helping to disrupt the existing lock-in. Yet, as Section 8.3 will show, this potential has thus far remained largely untapped in the main international regime addressing climate change: the UNFCCC.

8.3 Fossil Fuel Subsidies and the Climate Change

Convention: The Story So Far

Throughout its evolution over the past 25 years, the global climate regime has, by and large, eschewed the issue of fossil fuel subsidies.³ Even though some parties

³ This section is adapted from van Asselt and Kulovesi (2017).

have drawn attention to the linkages between such subsidies and climate objectives since the inception of the UNFCCC, support to fossil fuel production or use is not explicitly mentioned in any of the three climate treaties – let alone made subject to legally binding obligations. Indeed, fossil fuels are not directly addressed at all in the UNFCCC, the Kyoto Protocol or the Paris Agreement (van Asselt and Lazarus 2015; Piggot et al. 2017).

One of the key reasons for this omission is that countries are generally reluctant to cede their national sovereignty over natural resources. They are also prone to challenge any supra-national effort to govern energy, including fossil fuels. This can be witnessed in other areas of international governance, such as energy trade, but it is also true in cases of supra-national governance, such as the European Union (Van de Graaf et al. 2010: 103). Throughout the history of the climate regime, developing countries have also tended to resist the idea of international climate change mitigation obligations, fearing that these would limit their economic development opportunities. Addressing energy – including fossil fuel subsidies – under the UNFCCC therefore links to long-standing concerns over national sovereignty and the divides between developed and developing countries.

Rather than highlighting fossil fuel production and consumption as a source of GHG emissions, the debate in the climate regime has focused on fossil fuel-producing nations' concerns that taking climate action would have a negative impact on their economies. Members of the Organization of the Petroleum Exporting Countries, including Kuwait and Saudi Arabia, initially sought to emphasise scientific uncertainty over climate change and 'went to great lengths to . . . avoid any reference to energy' in the Convention (Dessai 2004: 19). Their concerns were reflected in the Convention and have led to a protracted discussion on the impacts of 'response measures' on developing countries (Depledge 2008; Chan 2016).

All this is not to say that no attempts have been made to address fossil fuel subsidies through the climate regime. Already during the negotiations of the UNFCCC in the early 1990s, Vanuatu, on behalf of the Alliance of Small Island States, suggested that the climate treaty should have a provision including a 'prohibition on subsidising activities which contribute to climate change' (UNFCCC 1991a: 30). Sweden likewise called for a commitment to reduce 'subsidies for the production and use of fossil fuels with a view to abolish such subsidies at the latest by the year (2000)' (UNFCCC 1991b: 4). Notwithstanding such calls, countries decided against listing any specific mitigation measures in the Convention that parties would need to adopt.

In the negotiations leading up to the 1997 Kyoto Protocol, some parties – including France, New Zealand, Norway and Switzerland – raised the prospect

of fossil fuel subsidy reform or phase-out as possible ‘policies and measures’ to mitigate climate change (Depledge 2000: paras. 72–73). Switzerland, for example, suggested to either put in place targets for subsidy reduction or to have a blanket removal of ‘all types of subsidies except those related to research and environmental protection’ (UNFCCC 1996: 4). But it was not only developed countries advocating for fossil fuel subsidy reform; some oil-producing nations also put proposals forward, with Iran proposing the removal of coal subsidies ‘as the most pollut[ing] source of energy’ (UNFCCC 1997: 32). But just as in the negotiations on the UNFCCC, countries could not agree on a list of policies and measures that Kyoto parties would be obliged to implement. Instead, they could only reach agreement on an indicative list of policies and measures. While fossil fuel subsidies are not mentioned in that list as such, the Protocol does mention the ‘[p]rogressive *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’ (Article 2.1(a)(v); emphases added). This could be seen as an implicit acknowledgement of fossil fuel subsidy reform as a possible climate mitigation measure.

Yet, while the Kyoto Protocol has arguably provided the most sophisticated international legal framework for climate mitigation to date, its importance is rapidly diminishing. The first commitment period from 2008 to 2012 included all key developed countries apart from the United States, which never ratified the Protocol, and Canada, which formally withdrew in 2011. The Protocol amendment for the second commitment period from 2013 to 2020 is yet to enter into force, but even if it did, other major developed countries such as Japan and Russia also have decided to opt out.

The future mitigation framework under the climate regime will be based on the Paris Agreement, which came into force in November 2016. The Agreement’s key achievements include setting long-term mitigation objectives, engaging all parties in mitigation action and introducing five-year ambition cycles. The Paris Agreement also includes provisions on enhanced transparency and regular global stocktaking (Bodansky 2016; van Asselt 2016). The Agreement’s main substantive provision provides that ‘[e]ach Party shall prepare, communicate and maintain successive nationally determined contributions that it intends to achieve’ and that ‘Parties shall pursue domestic mitigation measures, with the aim of achieving the objectives of such contributions’ (Article 4.2). The Agreement thus emphasises the role of national governments in determining their own mitigation ambition levels and measures in the form of nationally determined contributions (NDCs).

Although several developed and developing countries referred to fossil fuel subsidies in their submissions on issues to be included in the Paris Agreement (Benninghoff 2013), fossil fuel subsidies do not feature in the new treaty. However, as the Paris Agreement cements the discretionary approach to policies and measures under the UNFCCC regime, with countries being free to adopt the policies they choose to pursue their targets, it has provided an opportunity for some parties to put forward fossil fuel subsidy reform as a mitigation measure. Specifically, the lack of standardisation for NDCs leaves countries with the option to include the types of information they deem useful (Merrill et al. 2015b). The range of mitigation policies and actions in countries' NDCs could take the form of either specific actions and their expected outcomes or defining the outcome (e.g. an emissions target) and listing key policies and measures through which the target will be achieved. This has opened the door for some countries to include fossil fuel subsidy reform in their intended NDCs (INDCs). Terton et al. (2015) found that 13 countries included references to fossil fuel subsidy reform in their INDCs in the run-up to Paris. Ethiopia's INDC, for example, indicates that the country has 'already removed fossil fuel subsidies to enable enhanced generation and use of clean and renewable energy' (Ethiopia 2015: 7). Morocco's INDC commits the country to '[s]ubstantially reducing fossil fuel subsidies, building on reforms already undertaken in recent years' (Morocco 2015). And India's INDC explains how India has 'cut subsidies and increased taxes on fossil fuels (petrol and diesel) turning a carbon subsidy regime into one of taxation' (India 2015: 27). These developments thus show that even though the Paris Agreement offers no concrete guidance, parties have nevertheless started to link fossil fuel subsidies to climate change policy.

8.4 The UNFCCC and Fossil Fuel Subsidies: (Possible) Pathways of Influence

Section 8.3 suggests that the influence of the global climate regime on fossil fuel subsidy reform has been minimal thus far. However, it also shows that fossil fuel subsidies have not been completely absent from the political agenda and that with the new architecture put in place by the Paris Agreement, new opportunities may arise in which the climate regime, working through its parties and non-state actors, can exert influence on fossil fuel subsidy reform.

This section suggests that there are at least five possible pathways through which the UNFCCC could influence fossil fuel subsidy reform at the national level, following different schools of thought in international relations and international legal theory. While none of these pathways of influence rely on coercion

or enforcement, they nevertheless highlight that the climate regime could offer further support for national reform efforts.

The first pathway is inspired by Keohane's (1984) rational-functionalist account of regimes, which highlights the importance of reputational costs for cooperation. Drawing on Guzman (2008), Smith and Urpelainen (2017) elaborate on this idea in the context of international institutions addressing fossil fuel subsidy reform, focusing on the Group of 20 (G20) and the Asia-Pacific Economic Cooperation (APEC) group. They argue that the adoption of formal commitments by states to reform or remove fossil fuel subsidies can increase the reputational costs of reneging on that commitment. States have adopted such (voluntary) commitments already through the G20 and APEC. The NDCs communicated to the UNFCCC – some of which already include fossil fuel subsidy reform, as we saw earlier – could be similarly seen as voluntary commitments. Including fossil fuel subsidy reform in NDCs may make it harder for political leaders to backslide and may even make it harder for future governments to reverse reforms, as domestic stakeholders may try to hold their governments to account for their non-binding international commitment.

Yet the influence exerted through this first pathway is likely to depend on a second way in which an international institution can drive national politics and policies: by providing information. The G20 and APEC have followed their commitments up with peer reviews of the fossil fuel subsidies handed out by several countries (Aldy 2017).⁴ But the UNFCCC, like most other multilateral environmental agreements, also incorporates a reporting and review process that aims to increase the transparency of countries' performance (Gupta and van Asselt 2017). Although the transparency arrangements of the UNFCCC are in flux following the adoption of the Paris Agreement, existing rules offer space for countries to shed light on both the levels of their fossil fuel subsidies and their efforts to reform them (Benninghoff 2013), and future rules may similarly provide sufficient leeway for countries to do so. This information-producing function should not be underestimated. The generation and diffusion of information by an international institution can empower a variety of domestic stakeholders (e.g. non-governmental organisations, parliamentarians, opposition parties, or even other ministries) and help them hold their governments and leaders to account (Dai 2007; see also Kahler 2000).

Another pathway follows the rationalist assumption that by changing incentive structures, international institutions can influence national politics. The climate regime can do so by putting in place financial incentives, particularly for

⁴ Under the G20 process, reviews have taken place for the United States and China, as well as Germany and Indonesia. Under the APEC process, reviews have taken place for Chinese Taipei, New Zealand, Peru and the Philippines, with reviews of Brunei Darussalam and Vietnam forthcoming.

developing countries. One such incentive would be to make reform efforts eligible for financial support, for instance, through the Green Climate Fund. Support does not have to be limited to financial flows but could also be aimed at enhancing the technical capacity to understand the extent of subsidies or at generally building institutional capacity (cf. Cheon et al. 2013). Already countries such as Denmark are offering funding to support fossil fuel subsidy reform, for instance, through the World Bank's Energy Sector Management Assistance Programme. While providing climate finance for fossil fuel subsidy removal – which, on its own, ultimately should lead to increasing revenues for governments – may sound counterintuitive, such finance could take the form of bonds, which would generate finance upfront, allowing governments to repay when they make savings in the future (Hale and Ogden 2014). Such savings can be significant. For example, Indonesia freed up around USD 15.6 billion in 2015 (Pradipto et al. 2016), and India reduced the subsidy bill by USD 15 billion in 2014 (IEA 2015a).

A fourth pathway more closely follows social constructivist thinking. As pointed out by Van de Graaf and Blondeel in Chapter 5, fossil fuel subsidy reform could be viewed as an emerging norm – that is, a 'standard of appropriate behaviour' (Finnemore and Sikkink, 1998) – in international governance. To the extent that they are correct – and it is admittedly not yet crystal clear whether such an international norm indeed exists – the role of international institutions such as the UNFCCC can be to act as an 'organisational platform' to further clarify and diffuse this norm, amplifying the activities of other institutions and potentially helping to trigger a 'norm cascade' (cf. Finnemore and Sikkink, 1998). As discussed above, parties to the climate regime have so far refrained from referring to fossil fuel subsidies directly in any legal text. The closest they have come is the provision in the Paris Agreement that specifies that one of the goals of the treaty is to '[make] finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development' (Article 2). Although this provision does not mention fossil fuel subsidies as such, financing the continued production and consumption of fossil fuels is most certainly not in line with 'with a pathway towards low greenhouse gas emissions and climate-resilient development'.

One way to strengthen the climate regime as an 'organisational platform' for diffusing a norm on fossil fuel subsidy reform would be for the parties to adopt a decision containing specific language on the phasing out of fossil fuel subsidies, or acknowledging that this goal has been adopted in the context of other international forums, such as the outcome document of the Rio+20 Summit in 2012 (United Nations 2012: para. 225) and repeated declarations issued by the G20

(e.g. G20 2009). Reiteration of such goals would not necessarily mean that the UNFCCC would play a stronger role in the monitoring of whether this goal is being met, but it offers an important signal that the goal is supported by the international community of developed and developing countries and that fossil fuel subsidy reform is seen as a legitimate and useful tool to achieve climate policy objectives.

Finally, also along the lines of constructivist theories of international relations and international law (Brunnée and Toope 2012), environmental regimes such as the climate regime can be important facilitators of learning and the diffusion of policies (Haas 2000; Holzinger et al. 2008). One specific way in which the climate regime can foster learning is through its so-called technical expert meetings, which have been a regular staple on the negotiation agenda and will continue to be so until at least 2020. At these meetings, governmental and non-governmental experts share experiences and views on specific actions, technologies and policies with high mitigation potential. The meetings thus far have focused on topics such as energy efficiency in urban environments, renewable energy, non-CO₂ GHGs and carbon capture and storage (UNFCCC n.d.). Fossil fuel subsidy reform was proposed as a topic by some countries, including New Zealand (2013), and was included as a session as part of a broader technical expert meeting on the social and environmental costs of carbon in 2016. The subject has also been raised consistently by the Friends of Fossil Fuel Subsidy Reform in dedicated side events at UNFCCC Conferences of the Parties and inter-sessional meetings since 2013 (see Chapter 9), as well as via an international communiqué presented in 2015, which has been endorsed by over 40 countries and associations representing thousands of businesses (FFFSR 2015). Future meetings could address fossil fuel subsidy reform in more detail, with the UNFCCC providing a formal framework and venue for such capacity building. In addition, technical papers prepared in relation to the technical expert meetings have already repeatedly highlighted fossil fuel subsidy reform as an option for increasing mitigation ambition (e.g. UNFCCC 2016: 23–24).

The preceding discussion shows that there may be ways in which the global climate regime can help drive fossil fuel subsidy reform. However, the limitations of the regime – and the reasons why fossil fuels were never explicitly tackled in the first place – should also be acknowledged. As Keohane and Victor (2013) write, the problem structure of addressing climate change – focused on a global public good, with high levels of conflict over the distribution of costs and benefits – is not easily amenable to tackling energy challenges. The history of the climate regime's treatment of energy and fossil fuels likewise suggests that any efforts to explicitly address these issues will meet with resistance from at least

some parties. Combined with an already full agenda and consensus rule of the UNFCCC, this may make it challenging for the climate regime to exert any influence (Lang et al. 2010).

Moreover, as several other chapters in this book underscore, the UNFCCC would by no means be the only international institution influencing fossil fuel subsidy reform. On the contrary, it would step into an already crowded field occupied by other international organisations (e.g. the OECD, IEA, International Monetary Fund, and World Bank; see Chapter 6) and non-governmental organisations (e.g. the Global Subsidies Initiative; see Chapter 10). This means that the extent to which the climate regime affects fossil fuel subsidy reform efforts at the national level depends on how it acts in concert with other institutions. Yet the UNFCCC is unique in that it can link fossil fuel subsidies to their climate change impacts, and it offers a forum in which more than 190 countries from the developed and developing world participate.

8.5 Conclusion

This chapter has discussed what role, if any, the global climate regime established by the UNFCCC plays in the international governance of fossil fuel subsidies and in which ways the regime could exert influence in the future. The climate benefits of fossil fuel subsidy reform are clear. A growing number of studies show that these subsidies have led to a significant amount of GHG emissions. Moreover, research has indicated that even a partial reform of fossil fuel subsidy reform would lead to global emission reductions of between 3 and 8 per cent. Further mitigation gains can be made through the reinvestment of savings made in sustainable energy.

Given the climate change impacts of fossil fuel subsidies – and, conversely, the mitigation potential of measures to reform them – the climate regime is one of the international institutions that could be expected to address fossil fuel subsidies. However, as we have shown in this chapter, parties to the UNFCCC have so far refrained from addressing fossil fuel subsidies directly, even though some parties have started to include fossil fuel subsidy reform as a national climate change mitigation measure in the wake of the Paris Agreement.

Although it still remains to be seen whether the climate regime will become more active in the international governance of fossil fuel subsidies in the future, we have outlined five possible pathways through which the regime can influence the governance of fossil fuel subsidies at the national level. The first pathway highlights the reputational cost of cooperation in the context of voluntary commitments to subsidy reform made by UNFCCC parties, notably in their NDCs. A second pathway emphasises transparency and information linked to both NDCs and

UNFCCC reporting mechanisms. The third focuses on the possibility of building incentive structures through international private and domestic finance. A fourth pathway underscores the possible role of the UNFCCC in amplifying an emerging norm on fossil fuel subsidy reform. And finally, the UNFCCC could also influence subsidy reform by providing a framework for learning and building institutional capacity.

The extent to which parties to the climate regime (as well as other actors) pursue any of these pathways remains to be seen, and much will depend on developments and factors exogenous to the climate regime, from elections in fossil fuel-producing countries to the development and uptake of new clean-energy technologies. However, there seems to be at least some movement, as evidenced by the inclusion of fossil fuel subsidy reform in several NDCs. As parties continue to look for options that could deliver significant mitigation and sustainable-development benefits, it is more likely than not that fossil fuel subsidy reform will reappear on the political agenda of the climate regime. If and when it does, the potential impact of subsidy reform as a policy tool for reduced emissions and as a fiscal instrument to save and reinvest government resources towards sustainable energy should not be overlooked.

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