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# Governing the transition away from fossil fuels: The role of international institutions

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## ABSTRACT

There is an increasing recognition that to avoid dangerous climate change, most fossil fuel reserves will need to be left in the ground. This calls for increased attention for policies focusing on the supply side of fossil fuels. While national policies play a key part in governing fossil fuels and any transition away from them, international institutions can also play an important part. This paper starts by examining how different international institutions govern fossil fuel extraction and the extent to which their governance approaches overlap, complement or conflict with one another. It maps the institutions according to their objective, governance functions and activities relevant to fossil fuel development, to get an overview of the existing roles of international institutions. The paper then examines the potential role some of these institutions can play in governing the transition away from fossil fuel extraction, focusing in particular on options to address the supply side of fossil fuels within the United Nations Framework Convention on Climate Change (UNFCCC) and the World Trade Organization (WTO).

## CONTENTS



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## 1. INTRODUCTION

There is an increasing recognition in policy and academic circles that to avoid dangerous climate change, most fossil fuel reserves will need to be left in the ground (IEA 2012). Achieving this will be a daunting challenge, given that fossil fuel extraction remains central to energy and development plans in many countries, and energy policy has emphasized the expansion of fossil fuel supply and markets. To date, climate policy – both at the global and domestic levels – has focused largely on the demand for fossil fuel energy. The role of fossil fuel supply, in particular fossil fuel extraction, has received far less attention in both policy discourse and research (Princen et al. 2013, pp.162–3).

Yet climate change mitigation strategies that focus only on reducing fossil fuel demand may not be enough to adequately limit greenhouse gas emissions. The SEI project "Risks of, and Responses to, the New Fossil Fuel Economy" has highlighted the importance of addressing fossil fuel development in mitigation efforts, and explored policy options to do so (see, e.g., Erickson and Lazarus 2013; Erickson and Lazarus 2014; Lazarus and Tempest 2014). As part of that project, this paper explores the role of international institutions in governing fossil fuel development.

While national policies play a key part in governing fossil fuels and any transition away from them, international institutions can also influence behaviour, constrain activity, and shape expectations in a manner conducive to such a transition (cf. Keohane 1989). A wide array of international institutions influence the behaviour of state and non-state actors in the field of fossil fuel extraction, such as the International Energy Agency (IEA) and the Organisation for Economic Co-operation and Development (OECD), the Organization of Petroleum-Exporting Countries (OPEC), multilateral development banks, the World Trade Organization (WTO) and the United Nations Framework Convention on Climate Change (UNFCCC). In addition, summit processes such as the G20 also play a key role in global climate change and energy governance.

This paper focuses on two questions: How do these different international institutions govern fossil fuel extraction? And what role could these institutions play in governing a transition away from fossil fuels?

The paper starts by mapping these institutions according to their objective, governance functions and activities relevant to fossil fuel development, in order to get an overview of the existing roles of international institutions. It also examines the extent to which these governance approaches overlap, complement or conflict with one another – and how those institutions now deal with fossil fuels. For instance, while subsidies for fossil fuel consumption and production are frequently discussed in the G20, the IEA and the OECD, they have barely been raised in the WTO, the only multilateral organization that administers a legally binding agreement on subsidies. While avoiding dangerous climate change is central to its mission, which implies leaving the majority of fossil fuel resources in the ground, the UNFCCC process rarely addresses fossil fuel extraction; specific policy options to address it remain underdeveloped. Building on the mapping exercise, the paper explores several policy options to address fossil fuel extraction, with a particular focus on opportunities within the UNFCCC and the WTO.

## 2. FOSSIL FUEL DEVELOPMENT AND CLIMATE CHANGE MITIGATION

Notwithstanding mounting policy attention, as exemplified by high-level discussions in forums such as the IEA, OECD and G20, governing the supply side of fossil fuels will likely prove to be challenging. First, most of the world's energy still comes from fossil fuels. While high and volatile prices have raised concerns, the reality is that resources are sufficiently abundant to power the global economy for decades to come, even if the costs of extraction are likely to go up. Second, large investments are channelled to fossil fuel production and consumption. These do not only include significant government subsidies for fossil fuel production and consumption – estimated by Bast et al. (2012) at US$ 80–285 billion annually for developing and emerging economies[1] – but also investments by large institutional investors such as pension funds (Leaton et al. 2013).

Third, fossil fuels are integrated in modern economies in complex ways – what OECD Director-General Angel Gurría (2013) referred to as "carbon entanglement" – with some fossil fuel-producing countries heavily dependent on revenues from the sector. Moreover, in many countries in the global South, fossil fuels are still seen as essential for combating energy poverty. Fossil fuel-producers and exporters may also see these resources as central to the overall economy. Finally, fossil fuel producers include some of the largest corporations in the world (e.g. ExxonMobil, Shell), and wield enough political influence to stymie energy and climate policies not to their liking. In short, the barriers to an energy transition away from fossil fuels are high.

Nonetheless, there is a variety of policy options that could limit fossil fuel extraction at the national level. These include existing options such as compensation for not developing reserves (as in the Yasuní-ITT initiative in Ecuador; see Davidsen and Kiff 2013), phasing out fossil fuel subsidies (Whitley 2013a; 2013b), as well as innovative policy options such as using oil rents to shut down coal mines (Harstad 2012; Collier and Venables 2014).

The feasibility of these options largely depends on their political economy. For instance, while fossil fuel subsidy reform is often discussed as a "win-win-win" option that would reduce trade distortions, save public funds, and support climate policy objectives, achieving this in practice has been highly challenging because "interest groups and investments solidify around the existence of the policy and make change difficult" (Victor 2011, p.7). This means that any attempt at reform will need to be based on a solid understanding of the political logic that created the subsidy in the first place. Policy reform thus needs to build on an analysis of the energy transition that identifies the opportunities for the winners (e.g. renewable energy producers) and offers ways of compensating the losers (e.g. low-income people who need affordable energy).

National-level institutions play a key role in addressing fossil fuel development, and further work on the political economy of fossil fuel extraction at the national level is needed. While such research is emerging (e.g. Baker et al. 2014), the potential role of *international* institutions in addressing fossil fuel extraction remains mostly unexamined. The next section therefore starts by discussing which international institutions are of (potential) relevance, and what types of incentives emerge from these institutions.

[1] Given a lack of data and variations among studies in assumptions and subsidy definitions, estimates of fossil fuel subsidies vary significantly; the International Monetary Fund's upper estimate is US$1.9 trillion (IMF 2013).

# 3. INTERNATIONAL INSTITUTIONS AND FOSSIL FUEL DEVELOPMENT

## 3.1 Mapping the field

The governance of fossil fuel extraction needs to be viewed in the context of the so-called "energy trilemma" (e.g. World Energy Council 2013): energy policy seeks to simultaneously secure the supply of energy, reduce energy poverty, and ensure environmental sustainability (e.g. by promoting decarbonization). Given these different energy policy goals, it should not be surprising that fossil fuel extraction falls under the purview of several international institutions. Yet as Newell (Newell 2014, p.414) writes, "intergovernmental and public control over the actors and processes which extract and burn most carbon is either weak and indirect or often non-existent". In other words, fossil fuel extraction is only tangentially governed by international institutions, and in a fragmented way.

Table 1, on the next page, presents an overview of the most relevant intergovernmental institutions, outlining their membership, objectives, governance functions, legal status,[2] and activities relevant for fossil fuel development. The overview is certainly not exhaustive. For instance, energy policy is also influenced by a series of bilateral and regional economic agreements (including bilateral investment treaties and regional trade agreements). Moreover, fossil fuel extraction may be influenced by the success of institutions promoting the uptake of renewable energy, such as the International Renewable Energy Agency.

The overview also does not include relevant organizations influencing energy policy at the regional level, such as the African Energy Commission, the Asia-Pacific Economic Cooperation forum, the Association of South East Asian Nations, and the Latin American Energy Organization. Nonetheless, the table offers a broad overview of the different signals offered by the patchwork of international institutions. Finally, the overview does not include the activities by relevant non-state actors, such as the Global Subsidies Initiative, which has become a key non-governmental player in promoting fossil fuel subsidy reform.

The European Coal Organization, which had a rather short lifespan (1945–47), was the first intergovernmental organization in the energy field (Van de Graaf 2013, p.46). The development of international institutions took off in the 1960s, when the global oil market was dominated by the "seven sisters", composed of multinationals such as Shell and the national predecessors of now-multinational BP and ExxonMobil. Growing worried about their lack of influence on oil prices, several major oil-exporting states founded OPEC in 1961. A decade later, the organization started to influence oil prices, as was highlighted by its role in the oil crisis of the early 1970s. During this crisis, oil-importing countries became aware of the need for an institution to help address supply shortages; this emerging awareness led to the establishment of the IEA in 1974 under the OECD framework (which had been created 13 years earlier).

For many years, these institutions dominated global energy governance, broadly pitting consumers against producers and exporters. Until recently, most international energy governance was mainly directed at oil markets. In 2001, the creation of the Gas-Exporting Countries Forum (GECF) led to another institution largely consisting of gas producers. However, although OPEC has often (incorrectly) been labelled a "cartel" (Colgan 2014), the GECF should mainly be seen as a discussion forum (Kasayev 2013). What is striking is that

[2] These are only rough indications of the normative force of international institutions. For instance, while the UNFCCC and Kyoto Protocol are legally binding treaties, many of their provisions (especially in the UNFCCC) are hortatory. Furthermore, while the IEA and OPEC are mostly engaged in analysis and policy coordination, they are based on legally binding instruments and can potentially make legally binding decisions.

despite various efforts to expand the number of participants, the membership in all of these institutions has remained limited to a number of producers or consumers, thus reflecting their historical origins.

In the early 1990s, several energy-specific and energy-related institutions were created that brought producers and consumers together. The 1990–1991 Gulf War in particular highlighted the need for a producer-consumer dialogue. Following a series of conferences in the 1990s, this dialogue became institutionalized as the International Energy Forum (IEF) (Fattouh and van der Linde 2011). Around the same time, the Energy Charter Treaty (ECT) brought together energy exporters and importers from the Eurasian continent, with a view to facilitating investments in, and trade of, energy and energy products.

Energy investments are further governed by a host of bilateral and regional investment agreements, whose rules have facilitated a range of investment arbitrations launched by oil companies against states (see, for instance, the ongoing Chevron case against Ecuador). Trade in energy is also covered by the WTO, which came into being in 1995, even though energy-specific provisions were not included in the agreements under the WTO (Selivanova 2007; Marhold 2013). The WTO emerged out of the 1948 General Agreement on Tariffs and Trade (GATT) system and, building on its predecessor, has developed a sophisticated dispute settlement system. Membership in the international trading regime has expanded over time, initially including mainly developed countries, but over time also bringing on board the main developing countries and eastern bloc countries.

Environmental regimes, meanwhile – in particular the climate regime established by the UNFCCC – can play an important role in the governance of fossil fuel development, even if they were not necessarily established to do so. Although the climate treaties do not contain specific provisions discouraging the extraction of fossil fuels, their general climate change mitigation goals can be seen as promoting low-carbon alternatives. As an environmental framework treaty, participation in the UNFCCC has been near-universal.

In the late 2000s, a range of institutions took up the challenge of addressing fossil fuels more directly. These include Bretton Woods institutions such as the World Bank and the International Monetary Fund (IMF), the G20 and the OECD, all created for broader purposes than just energy governance. While for the World Bank (as well as other multilateral and regional development banks), the focus has been primarily on the investments made in fossil fuel development, the focus of the G20, OECD and IEA (as well as OPEC) has increasingly turned to addressing fossil fuel subsidies.

**Table 1: International institutions governing fossil fuel extraction**

| Institution | Year | Scope | Member states | Objective(s) | Governance function(s) | Legally binding | Activities relevant for fossil fuel extraction |
|---|---|---|---|---|---|---|---|
| Energy Charter Treaty (ECT) | 1991 | Regional | 52 (incl. EU); both P and C[3] | Build secure framework for energy investment and trade | Norm development; dispute settlement | Yes | - Promotes investment in, and free trade of, energy, irrespective of carbon content of energy source.<br>- Environmental protection measures promoted, but qualified and hortatory (Article 19); focus primarily on demand side (energy efficiency). |
| G20 | 1944 | Major economies | 20 (incl. EU); both P and C | Discuss economic and financial policies | Agenda-setting | No (political dialogue) | - Commitment to phase out inefficient fossil fuel subsidies.<br>- Created working groups on fossil fuel subsidies and fossil fuel price volatility. |
| Gas-Exporting Countries Forum (GECF) | 2001 | Gas exporters | 11; mainly P | Allow members to independently plan and manage development, use and conservation of natural gas resources | Agenda-setting | No (discussion forum) | - Largely information exchange and dialogue. |
| International Energy Agency (IEA) | 1974 | Developed countries | 29; mainly C | Ensure reliable, affordable and clean energy | Capacity-building; MRV; policy coordination | In part | - Emergency measures in case of oil supply shortfalls.<br>- Ensuring environmental sustainability one of the "shared goals" (including using fossil fuels cleanly).<br>- Research and information on climate/energy nexus. |
| International Energy Forum (IEF) | 1991 | Global | 75; both P and C | Reduce volatility in oil markets; promote transparency | Agenda-setting | No (political dialogue) | - Dialogue between energy producers and consumers.<br>- Joint Oil Data Initiative (JODI) collects oil market data. |
| International Monetary Fund (IMF) | 1944 | Global | 188 both P and C | Foster global monetary cooperation and secure financial stability | Capacity-building; Financing | No (financing) | - Reducing fossil fuel subsidies a condition for lending. |
| Organisation for Economic Co-operation and Development (OECD) | 1961 | Developed countries | 34; mainly C | Promote policies to improve economic and social well-being | Agenda-setting; Capacity-building | No | - Work on estimating fossil fuel subsidies (e.g. OECD 2013). |

[3] With the Russian withdrawal from the ECT in 2009, the ECT does not include major fossil fuel producers outside the EU.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Organization of Petroleum-Exporting Countries (OPEC) | 1961 | Oil exporters | 12; mainly P | Coordination and unification of OPEC member petroleum policies | Agenda-setting; Policy coordination | In part | - Assigns production quotas to its members.<br>- Modest influence on oil prices and production levels (Colgan 2014). |
| United Nations Framework Convention on Climate Change (UNFCCC) | 1992 | Global | 196; both P and C | Avoid dangerous climate change | Capacity-building; Norm development; MRV | Yes (legally binding) | - Promotes low-carbon development.<br>- Created forum and work programme on the impact of the implementation of response measures to help address consequences of climate mitigation measures. |
| World Bank | 1945 | Global | 188; both P and C | Financing development | Capacity-building; Financing | No (financing) | - Financing for fossil fuels declining, but still significant (US$1 billion in 2013; Makhijani 2014).<br>- Policy to not fund coal-fired power plants (with limited exceptions) (The World Bank 2013). |
| World Trade Organization (WTO) | 1995 | Global | 160; both P and C | Promoting trade liberalization | Capacity-building; Norm development; MRV; dispute settlement | Yes (legally binding) | - WTO law allows for trade measures in pursuit of environmental protection in some cases.<br>- "Dual pricing" may violate WTO law, but difficult to challenge (Meyer 2013).<br>- Acknowledgement of relevance of fossil fuel subsidy reform for WTO agenda (WTO 2010), but no concrete action. |

*'P'=Producer; 'C'=Consumer; MRV=Measurement, reporting and verification.*

### 3.2 Discussion

Several inferences can be drawn from this short overview. First, the global governance of fossil fuel development – like global energy governance more broadly (Lesage et al. 2010, pp.51–74; Dubash and Florini 2011; Meyer 2012) – is inevitably fragmented. Not only is not there no central institution – such as a World Energy Organization – but it is also difficult to point to a dominant institution.

This fragmentation should not be surprising. Historically, it can be traced back to the creation of producer and consumer clubs such as OPEC and the IEA. Although the situation is starting to change, with several international institutions (e.g. ECT, G20, IEF, UNFCCC, WTO) bringing producers and consumers together, none has assumed a dominant role. The fragmentation can further be explained by the changing importance of different fossil fuels and the fact that different energy sources – including not only fossil fuels, but also renewable sources of energy – involve different sets of actors. Whereas oil has been the main focus for several decades, leading to the creation of both OPEC and the IEA, natural gas has assumed an increasingly prominent role in achieving energy policy objectives, as evidenced by the establishment of the GECF. Finally, fragmentation in global energy governance can be viewed as a logical outcome given the diverse objectives of energy policy.

Second, although several international institutions are of (potential) relevance in governing fossil fuel development, their influence on energy policy decision-making is rarely direct. Instead, incentives to spur or limit fossil fuel extraction tend to operate through the market price of fossil fuels (e.g. OPEC implementing export quotas, which influence oil prices, which may influence extraction). The influence of the climate change regime to date is also indirect: at best, it could be argued that by seeking to increase the social cost of carbon, the regime could limit fossil fuel development (though the climate treaties themselves do not establish a carbon price).

There are exceptions to this rule, of course. For instance, the World Bank, other development banks and export credit agencies can play an important direct role by either financing fossil fuel projects or choosing not to do so. Moreover, the various institutions involved in phasing out "inefficient" fossil fuel subsidies (G20, IEA, OECD) can be said to directly target fossil fuel development; however, most of these initiatives are still at the stage of enhancing transparency about the level of such subsidies, rather than considering concrete measures to phase them out, and most focus on consumer rather than producer subsidies.

Third, the fragmented architecture of global energy governance may lead to conflicting objectives and policies. For instance, the goals of the IEA may favour lower oil prices, which the UNFCCC might see as impeding a shift towards a low-carbon economy (Meyer 2012). Conversely, climate policies adopted in pursuit of the objectives of the UNFCCC might undermine the objectives of energy-specific institutions that seek to promote the continued production and use of fossil fuels. A challenge in this regard is that where there are inconsistencies and trade-offs between different institutions' objectives, there is no international arbiter to manage or resolve them (Dubash and Florini 2011).

In short, the influence of international institutions on fossil fuel development remains opaque, and further studies of individual institutions – and of their interactions with one another, will be fruitful. At the same time, however, it is important to view such institutions in their country-specific context, through case studies, to help understand their influence. For instance, whether the UNFCCC will have any influence on domestic energy policy decisions will likely depend on whether there is a strong national-level counterpart (e.g. an integrated climate and energy ministry). Whether the Bretton Woods institutions can help steer finance toward or away from fossil fuel development will likely depend on how much each country relies on them for finance. Such studies would need to take into account the national governance context, help assess how international institutions interact at the national level, and bring in non-state governance initiatives into the analytical framework.

## 4. EXPLORING THE ROLE OF MULTILATERAL INSTITUTIONS

This section delves deeper into the potential role of two international institutions: the UNFCCC and the WTO. They are of particular interest for several reasons:

- They provide multilateral venues where most, if not all, countries of the world have a say,[4] including both fossil fuel producers and consumers from the developed and developing world.
- They offer platforms for the negotiation and development of rules addressing fossil fuel development, and provide mechanisms to ensure those rules are complied with.[5]
- Both institutions have built a strong administrative apparatus that helps apply rules.
- Both institutions can incorporate the flexibility needed to address the diverging contexts of fossil fuel-producing countries, with reference to principles of differential treatment.

Clearly, neither institution operates in isolation; references to the potential role of other international institutions will be made where appropriate.

### 4.1 The UNFCCC

Historically, the UN climate change regime has focused primarily on the demand side of climate policy. This is clear not only from the types of policies and measures listed in the climate treaties (e.g. enhancing energy efficiency; reducing emissions from agriculture), but also from its accounting and reporting system, which is focused on greenhouse gas emissions by sources and removals by sinks. However, even within the inherent limitations of its architecture, there are several ways in which the UNFCCC could contribute to supply-side policy making. This section identifies three possibilities: (i) accounting and reporting; (ii) fossil fuel subsidies; and (iii) net avoided emissions.

#### *Accounting and reporting*

The entire UNFCCC system is based on *territorial-emissions*-based accounting. Countries follow emissions reporting guidelines drafted by the Intergovernmental Panel on Climate Change (IPCC) to report the emissions from fuels burned (or removed by sinks) within their territory (Eggleston et al. 2006). The territorial accounting system of the UNFCCC and its Kyoto Protocol does not account for international emissions (e.g. emissions from international transport), and policies that rely upon this accounting approach can often induce carbon leakage as an unintended consequence (i.e. increased emissions elsewhere due to the implementation of climate policy domestically). For these reasons, several authors have suggested a move towards consumption-based accounting (see, notably, Peters and Hertwich 2008). A third option, extraction-based emissions accounting, has also been suggested (Davis et al. 2011; Erickson and Lazarus 2013).

It is beyond the scope of this paper to discuss the advantages and drawbacks of these types of accounting mechanisms. What is important to note, however, is that the different types of accounting need not be mutually exclusive (Peters and Hertwich 2008). In the context of the UNFCCC, it would not make sense to try to *replace* territorial-based accounting with another approach. There are good reasons to place the focus of accounting and policy on the locations where greenhouse gas emissions are released: the accounting is straightforward and need not rely on modelling (which is needed for consumption-based emissions) or simplified assumptions (e.g. how much of extracted fossil fuel is actually burned), and the system forms the rational basis for assessing the most significant emission reduction policies in place today, such as emissions standards and emissions trading systems.

[4] The UNFCCC enjoys universal ratification, with 196 Parties. The WTO has 160 members.

[5] The strength of compliance mechanisms differs, however. For the UNFCCC, the strongest way of ensuring compliance – assuming that the sanctions of the Kyoto Protocol's compliance mechanism are not part of a future climate change agreement – lies mainly in procedures for monitoring, reporting and verification. The WTO, by contrast, has a strong and legally binding dispute settlement mechanism.

However, there are good arguments for supplementing this system with others – including both consumption- and extraction-based accounting. The UNFCCC should be sufficiently flexible to allow for multiple approaches, where these can add value to achieving its mission.

UNFCCC Article 12(1)(a)[6] limits the compulsory national inventories to "anthropogenic emissions by sources and removals by sinks", meaning that a consumption- or extraction-based accounting system would need to be kept separate from the national inventories. Nevertheless, such inventories may offer relevant information. For instance, for emissions inventories in the energy sector, developed country (Annex I) Parties may include information on the number of coal mines, oil and gas wells as well as the oil and gas throughput (UNFCCC 2006, p.19).

Moreover, UNFCCC Article 12(1)(c) suggests that Parties shall report "[a]ny other information that the Party considers relevant to the achievement of the objective of the Convention and suitable for inclusion in its communication, including, if feasible, material relevant for calculations of global emission trends". In other words, the National Communications submitted regularly by Parties are a reporting tool flexible enough to include extraction-based information.

Guidelines for National Communications for Annex I Parties explicitly invite Parties to submit information on their energy resource base, production and trade, among others (UNFCCC 2000, para. 8(f)). Parties generally already include information relevant for extraction-based accounting in their National Communications. For instance, Australia's latest report offered basic information about the country's primary energy supply (Australian Government 2013, pp.20–21). This also holds for developing-country (non-Annex I) Parties: for instance, China's latest National Communication offers basic information about fossil fuel extraction in the country (Government of China 2012, p.31). These examples show that governments are not necessarily unwilling to share data that could allow for extraction-based emissions accounting. At the same time, additional reporting requirements would likely have to be introduced gradually, taking into account the principle of common but differentiated responsibilities and respective capabilities, as for some countries the relevant data may not (yet) be available and/or may be costly to collect.

In addition to the National Communications, information relevant for extraction-based accounting may also be provided through the more frequently submitted Biennial Reports (for Annex I Parties) and Biennial Update Reports (for non-Annex I Parties). While the guidelines for these reports make no specific reference to energy sources, they include open-ended invitations to Parties to submit further information (UNFCCC 2012, Annex I, para. 25; Annex III, para. 19).

From a practical viewpoint, following progress in tools and methods for consumption- and extraction-based accounting (e.g. Davis et al. 2011), reporting of extraction-based emissions could draw on guidelines from the IPCC in the same way as production-based emissions inventories.

### *Fossil fuel subsidies*

As noted above, the issue of fossil fuel subsidy reform is on the agenda of several international institutions. There is certainly no lack of high-level statements that seek to address fossil fuel subsidies. For instance, the outcome document of the Rio+20 Summit in 2012 suggests that "[c]ountries reaffirm the commitments ... to phase out harmful and inefficient fossil fuel subsidies that encourage wasteful consumption and undermine sustainable development (United Nations 2012, para. 225). Similarly, at the 2009 G20 summit in Pittsburgh, heads of government decided to "rationalize and phase out over the medium term inefficient fossil fuel subsidies that encourage wasteful consumption" (G20 2009). Following up on this commitment, most G20 members drafted

[6] For the full text of the Convention, see: http://unfccc.int/essential_background/convention/items/6036.php. For the full text of the Kyoto Protocol, see: http://unfccc.int/essential_background/kyoto_protocol/items/6034.php.

implementation strategies and submitted reports tracking progress.[7] However, given that the G20 process is based on self-reporting and that there is no common definition of "inefficient fossil fuel subsidy", several members (Brazil, China, France, Italy, Japan, Russia, Saudi Arabia, South Africa and the UK) reported no subsidies (IISD 2012). To improve transparency, the G20 agreed in St. Petersburg in September 2013 on a methodology for voluntary peer review (G20 2013, para. 94).

While discussions in the G20 – in collaboration with the OECD, IEA and IMF and OPEC – are thus slowly shifting from high-level commitment to practical action, the UNFCCC has remained notably silent on the issue. Nevertheless, following the high-level commitments made in other forums, Parties and observers have started to raise the option in the context of the Ad Hoc Working Group on the Durban Platform for Enhanced Action (ADP). In particular, fossil fuel subsidy reform has been suggested as a means to raise ambition in the pre-2020 period – i.e. Workstream 2 of the ADP (e.g. UNFCCC 2013, p.12).[8]

Neither the UNFCCC nor the Kyoto Protocol mentions fossil fuel subsidies or their reform. In fact, the UNFCCC does not specify the types of policies and measures that Parties could or should adopt to address climate change. The Kyoto Protocol does include an illustrative list of such policies and measures, including "[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) Kyoto Protocol). Decision 31/CMP.1[9] contains a similar formulation. This decision was adopted pursuant to Article 3(14) of the Protocol, which suggests that Annex I Parties shall implement their commitments "in such a way as to minimize adverse social, environmental and economic impacts on developing country Parties". These two provisions suggest that at least Annex I countries should strive to reduce or phase out fossil fuel subsidies. However, there is no legally binding obligation to phase out – or even reduce – fossil fuel subsidies, nor is there any reporting procedure in place to track progress toward their reduction.

There are several possible ways forward for Parties to address fossil fuel subsidies under the UNFCCC umbrella, if they choose to do so. A first – and perhaps least controversial – option would be to reiterate the high-level commitments put forward in other forums. In doing so, however, it may be possible to make such commitments more concrete – such as by agreeing on a specific date by which to phase out subsidies. Whitley (2013b), for instance, suggests that such a commitment could entail a phase-out of all subsidies by 2025, with G20 countries taking the lead by 2020.

Second, Parties could choose to use the UNFCCC reporting systems to support and complement the work of the OECD and IEA on enhancing transparency around fossil fuel subsidies and reform efforts. As noted above, the reporting guidelines for National Communications of Annex I Parties invite the Parties to provide different kinds of energy-related information, including energy subsidies (UNFCCC 2000, para. 8(f)). Both Annex I and non-Annex I Parties could report fossil fuel subsidy data under information in the chapter on "national circumstances"; Annex I Parties could add further information under "policies and measures" and non-Annex I Parties under the heading of "general description of steps taken or envisaged to implement the Convention" (Benninghoff 2013, p.5). Furthermore, both sets of guidelines include possibilities to include "other information". In other words, the guidelines do not restrict countries in reporting further data on subsidies. To ensure comparability and foster a greater

[7] Implementation strategies are available at: http://www.eenews.net/assets/2010/06/28/document_cw_03.pdf.

[8] By mid-2014, fuel subsidy reform was raised in submissions by: the Alliance of Small Island States (AOSIS); the EU, the United States, Nepal (on behalf of the least-developed countries); the Environmental Integrity Group (Liechtenstein, Mexico, Monaco and Switzerland); Japan; New Zealand; Norway; the Coalition of Rainforest Nations (Bangladesh, Cameroon, Costa Rica, Dominica, Dominican Republic, Gabon, Guyana, Honduras, Kenya, Nigeria, Papua New Guinea, Republic of Congo and Uganda); and the United States. See http://unfccc.int/bodies/awg/items/7398.php.

[9] See: http://unfccc.int/resource/docs/2005/cmp1/eng/08a04.pdf#page=8.

understanding of the extent of fossil fuel subsidies, a common definition of "subsidies" would be required; this could potentially be linked to discussions in the WTO (Bast et al. 2012, p.25; see also below). Alternatively, countries could seek to use similar data being collected by the OECD, IEA and the Global Subsidies Initiative, among others (Benninghoff 2013, p.5).

In addition to fossil fuel subsidies themselves, subsidy reform could also be reported, both through the National Communications and through the biennial reports (for Annex I Parties) and biennial update reports (for non-Annex I Parties), which broadly allow for reporting on mitigation actions (Bast et al. 2012; Benninghoff 2013; Whitley 2013b).

A third option would be to consider fossil fuel subsidy reform as a possible nationally appropriate mitigation action (NAMA) for developing country Parties (von Moltke 2014, p.252). The concept of NAMAs – while generally referring to policy-based as opposed to project-based mitigation action – is broad enough to capture possible measures to reduce fossil fuel subsidies. This means that developing countries interested in receiving international support for implementing fossil fuel subsidy reform could communicate such measures as a NAMA to the UNFCCC Secretariat (e.g. by listing such a measure in the NAMA Registry maintained by the Secretariat). 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. Moreover, in some cases it is sensible to use NAMAs to tie fossil fuel subsidy reform to other measures promoting alternative energy sources (Benninghoff 2013, p.4).

Fourth, Parties could choose to include fossil fuel subsidy reform in their "intended nationally determined contributions" (INDCs), which are to serve as the foundation for a new climate agreement applicable to all Parties beyond 2020. The INDC concept is sufficiently open-ended to allow this, and one advantage of using INDCs instead of NAMAs is that they would not be limited to developing countries. At this stage, neither the contents of INDCs nor the process for their review is clear, meaning that the added value of suggesting fossil fuel subsidy reform as an INDC is uncertain. However, the lack of clarity also provides an opportunity for a small group of countries to get together and jointly promote fossil fuel subsidy reform as an INDC, and agree on common metrics and benchmark that would facilitate the monitoring, reporting and verification process (cf. Lang et al. 2010, p.34).

Other options to take up fossil fuel subsidy reform in the UNFCCC context may well be conceivable. However, the feasibility of some options may be constrained by the political economy of the climate regime: fossil fuel-producing countries would likely oppose multilateral measures aimed at fossil fuel subsidy reform, as they stand to lose the most. Combined with the consensus rule of the UNFCCC, this may make far-reaching options (e.g. concrete phase-out targets) difficult to achieve (Lang et al. 2010). Still, other options – such as the coordinated inclusion of fossil fuel subsidy reform in an INDC or voluntary reporting of subsidies or their reform – are possible also without consensus.

### *Net avoided emissions*

In 2011, a submission by Ecuador highlighted the concept of "net avoided emissions" (NAE) as an alternative market-based mechanism under the UNFCCC (Republic of Ecuador 2011). The background of this submission was formed by the Yasuní-ITT initiative, which had been launched in 2007 by President Rafael Correa. The idea behind this initiative was that Ecuador would refrain from exploring oil reserves underneath the Yasuní National Park in return for international payments compensating for the forgone revenues. Although the initiative itself was unsuccessful – the Ecuadoran government reversed its decision, citing insufficient payments as the main reason[10] – the idea of "net avoided emissions" may continue to be discussed in the context of discussions on a

[10] Ecuador argued the reserves were worth US$3.6 billion. After six years, only $13 million had been collected. See, e.g., Krauss, C. (2013). Plan to Ban Oil Drilling in Amazon Is Dropped. *The New York Times*, 16 August. http://www.nytimes.com/2013/08/17/business/energy-environment/ecuador-drops-plan-to-ban-drilling-in-jungle.html.

framework for various approaches and a new market mechanism. In fact, discussions about avoided emissions have become commonplace in the climate change regime with the advent of Reducing Emissions from Deforestation and Forest Degradation (REDD+) programmes, which similarly focus on avoiding emissions as opposed to reducing emissions.

Under an NAE mechanism, a country would need to establish a baseline and develop scenarios to quantify the emissions to be avoided. Similarly, the net present value of the activity not undertaken would need to be calculated (Republic of Ecuador 2011). However, as simple as this may sound, there are several challenges in such calculations. The main challenge lies in estimating the market impacts of any decision to leave fossil fuel reserves in the ground. The question is, first, whether this would lead to reduced demand for such energy products; and, second, if not, whether the fossil fuels will be replaced by a more or less carbon-intensive alternative (Köhler and Michaelowa 2014, p.58).

Given the uncertainties of market responses, determining the environmental benefits of NAE would therefore be challenging. Related to the calculation of avoided emissions is whether NAE would be truly "additional" (i.e. in a business-as-usual scenario the activity would be carried out), which is challenging given the difficulty of accessing reliable data on extraction costs (Köhler and Michaelowa 2014, p.62).

In addition to calculating the benefits of NAE, a second challenge will be to ensure that such benefits remain. In other words, a mechanism needs to ensure the "permanence" of avoided emissions. This issue already came up in the REDD+ discussions, as well as in earlier debates on land use, land use change and forestry, where mechanisms to deal with this issue have been proposed and adopted over time (Dutschke and Angelsen 2008). Several options to ensure permanence are conceivable, including:

- Providing economic incentives to continue to refrain from exploration, for instance, by tying payments to future non-activity (Köhler and Michaelowa 2014);
- Creating disincentives to start exploration by establishing a mechanism of sanctions in case of non-compliance (Köhler and Michaelowa 2014);
- Establishing a liability regime that involves not only the country seeking to avoid emissions, but also other countries, offering them an incentive to support continued non-exploration (cf. Dutschke and Angelsen 2008, pp.81–2); and
- Physically changing the fossil fuel reserves in such a way that makes them useless (Köhler and Michaelowa 2014).

Should it be possible to overcome these challenges, a third challenge will be to ensure that such activities will actually lift off and be funded (i.e. avoiding a repetition of the experience in Ecuador). This could initially take place through a trust fund, like the one established between the Ecuadoran government and the United Nations Development Programme. Over time, however, the concept of NAE could also be linked to the Green Climate Fund, or separate emission credits could be created.

Discussions on market and non-market mechanisms under the UNFCCC remain contested, reflecting uncertainty about the role of market-based mechanisms at the international level. Whether these ongoing discussions will result in the adoption of any mechanism likely depends on the overall outcomes of the negotiations. Nonetheless, through the notion of NAE it is possible to keep options on the table for creating a mechanism to offer economic incentives to leave fossil fuels in the ground.

### 4.2 The WTO

The relationship between the WTO and energy is fuzzy. In part, this is due to the complex characteristics of energy and energy markets that make it unlike other goods regulated by the international trading system. In addition, major fossil fuel-exporting nations, such as Russia and Saudi Arabia, were not members of the General Agreement on Tariffs and Trade (GATT), the WTO's

predecessor (although by now both are WTO members). Nevertheless, it is clear that energy as such is not excluded from WTO obligations (Cottier et al. 2011; Farah and Cima 2013).

Energy can be seen as both a good or as a service, meaning that it is governed by different WTO disciplines. Fossil fuels themselves (oil, coal, gas) are "goods" under WTO law, meaning they fall under the GATT. Energy-related services such as the transportation and distribution of energy, however, would fall under the General Agreement on Trade in Services (GATS) (WTO 1998). In addition, WTO disciplines on subsidies, and in particular the WTO Agreement on Subsidies and Countervailing Measures (SCM Agreement),[11] are relevant for the discussions on fossil fuel subsidy reform. Even within the WTO, therefore, energy governance can be seen as fragmented.

Through these different agreements, the WTO could potentially play a role in addressing fossil fuel development. For instance, the GATT would arguably allow for differential taxation of fossil fuel and non-fossil fuel-based energy inputs (Howse and Eliason 2009, p.82). Another suggestion has been to implement export restrictions for fossil fuels (Mattoo and Subramanian 2013, pp.8–10).[12] The rest of this section, however, will focus on the possible role of the WTO in fossil fuel subsidy reform.

Discussions about the role of the WTO in addressing fossil fuel subsidies need to be seen in their historical context. While energy subsidies as such may have not received much attention, the notion of "dual pricing" has been contested. Dual pricing refers to practices by fossil fuel exporters that set a lower domestic price for fuels than the price charged internationally. Such practices have drawn the ire of fossil fuel importers, such as the EU, who argue that dual pricing violates provisions in both the GATT and the SCM Agreement (Marhold 2013).

Given the unresolved disagreements over energy under the WTO, it is not surprising that fossil fuel subsidy reform has hardly been discussed. However, there is a clearly relevant body of law, with the SCM Agreement providing the main rules on subsidies. According to the treaty, subsidies need to entail a "financial contribution by a government or any public body" or "any form of income or price support" that confers a benefit (Article 1(1)). A key question is whether measures are defined as "prohibited" or "actionable" subsidies under the agreement. Prohibited subsidies are contingent upon export performance or upon the use of domestic over imported goods (Article 3). Actionable subsidies are subsidies that are "specific" (aimed at certain enterprises or industries; prohibited subsidies are specific by rule) and that create "adverse effects". The latter refers to injury to the domestic industry of another member, nullification or impairment of the benefits accrued by another member under the GATT, or serious prejudice to the interests of another member (Article 5). If a subsidy is not specific, it is non-actionable.

In addition, the SCM Agreement obliges WTO Members to notify other Members about subsidies, providing sufficient details to allow other Members to assess the impacts on trade (Article 25). Subsidies that are notified are reviewed through a surveillance mechanism involving the Committee on Subsidies and Countervailing Measures (SCM Committee) every three years (Article 26). In addition to the SCM Agreement, GATT provisions may also be invoked to challenge fossil fuel subsidies, as the subsidies may be tied to requirements that violate the GATT's core provisions (i.e. national treatment and most-favoured nation treatment), or amount to an illegal quantitative export restriction.

Using these provisions in practice has proven difficult. No fossil fuel subsidy has been challenged by a WTO Member. Perhaps more importantly, however, notification rates of subsidies have generally been low, due to a lack of commitment (possibly due to fear of starting a trade dispute), a lack of clarity

[11] See: http://www.wto.org/english/tratop_e/scm_e/scm_e.htm.

[12] Within the WTO context, export restrictions may well fall afoul of Article XI of the GATT, which prohibits quantitative restrictions. While such measures may be defended under the GATT's environmental exceptions (Article XX), a recent case before the WTO's dispute settlement body rejected China's claim that its export restrictions on extracted minerals could be justified by environmental arguments. See http://www.wto.org/english/tratop_e/dispu_e/cases_e/ds431_e.htm.

about which subsidies need to be reported, or inherent difficulties of estimating them (IEA et al. 2010; Casier et al. 2013). Even if Members do report subsidies, the surveillance mechanism rarely leads to the questioning of the subsidies (Collins-Williams and Wolfe 2010; Steenblik and Simón 2011).

In other words, as a first step it is important to think about ways in which the WTO could help enhance the transparency of fossil fuel subsidies. Several suggestions have been made in this regard, including: (i) the establishment of a new subsidiary body under the SCM Committee to examine whether notifications are in line with the actual support provided (Bigdeli 2008; Cottier et al. 2011); (ii) adopting a new notification template providing further details on subsidies in a standardized fashion (Steenblik and Simón 2011); and (iii) allowing non-governmental organizations to report on the level of non-actionable subsidies (Casier et al. 2013). These suggestions offer ways forward for greater transparency on fossil fuel subsidies without requiring changes in the WTO's legal framework.

While greater clarity about the level of subsidies provided is important, the WTO could do more to incentivize subsidy reform. Incentives for reform could arise if a subsidy would qualify as either "prohibited" or "actionable", meaning that other WTO Members can take action under Article 4 or 7 of the SCM Agreement, respectively. A key challenge will be to determine whether fossil fuel subsidies are specific, given that the benefits of such subsidies generally accrue to a broad group of producers and/or consumers (Lang et al. 2010; Meyer 2013). Another difficulty will be to determine whether there are any adverse effects. It can be argued that subsidies resulting in cheaper energy prices will result in adverse trade effects for some energy-intensive sectors (e.g. cement, steel, pulp and paper) where the costs of energy input are a significant part of the overall production costs (Bigdeli 2008).

At this moment, it seems quite unlikely that WTO Members will be able to renegotiate the subsidies regime to take into account the climate impacts of fossil fuel subsidies. Although there has been progress in other areas of environmentally harmful subsidies, namely fisheries, the stakes are higher in the case of fossil fuel subsidies (Bigdeli 2008). It may be possible to move the issue forward through discussions among a smaller group of WTO Members, potentially involving several "Friends of Fossil Fuel Subsidy Reform".[13] However, unless this group engages the countries responsible for the largest subsidies, the effectiveness of such a plurilateral agreement would be limited (Lang et al. 2010).

In addition to re-negotiating the WTO disciplines on subsidies, WTO Members could also discuss fossil fuel subsidies as a barrier to climate-friendly technologies in negotiations on liberalizing trade in environmental goods and services (Lang et al. 2010). Although the WTO negotiations on this topic have largely stalled – reflecting a lack of progress in the Doha Round of trade negotiations – it is notable that a group of key Members (including China, the EU and the United States) have stated their intention to develop an agreement to reduce tariffs in green goods.[14] While discussions will likely start off on a plurilateral basis, the 14 countries involved have said they would like other major trading nations to join them.

[13] Friends of Fossil Fuel Subsidy Reform is a group of non-G20 countries that support the reform of "inefficient fossil fuel subsidies". See: http://www.mfat.govt.nz/fffsr/.

[14] See: http://trade.ec.europa.eu/doclib/docs/2014/january/tradoc_152095.pdf.

## 5. CONCLUSIONS

The aim of this paper has been to launch a broader discussion on the role of international institutions in facilitating or obstructing a move away from fossil fuel dependence. It merely scratches the surface of the complex system of global energy governance, and only focused on a few international institutions that affect fossil fuel development. Clearly, a more in-depth and comprehensive analysis is needed. Nonetheless, the paper offers a few preliminary findings that could guide further inquiries.

First, it is notable that – with the exception of OPEC and the GECF clearly promoting oil and gas exploration in their member states, respectively – none of the institutions offer strong incentives to either promote or discourage fossil fuel development. Some organizations in which rule development takes place – notably the UNFCCC and WTO – do not have clear provisions affecting member states' energy choices. While the climate change treaties encourage measures promoting low-carbon energy, they do not specifically discourage extraction of high-carbon fossil fuels.

The ECT, another institution promulgating rules, is arguably indifferent when it comes to the energy sources it covers, but in practice its emphasis on promoting energy investments may lead to a *de facto* favouring of fossil fuels. However, recent discussions seem to suggest that the institution may change course in the near future and more actively pursue the promotion of low-carbon energy (Cameron 2012). The WTO has been reluctant to deal with energy-related issues such as dual pricing. Other institutions have taken a clearer stance. In particular, the G20, OECD and IEA activities on fossil fuel subsidies show that their members view this as an area requiring urgent policy attention. At the same time, these institutions lack the power to develop norms under their auspices, let alone enforce them. Moreover, all three have limited membership, and do not include all major fossil fuel producers.

Second, the goals and objectives of different international institutions may in fact overlap or even conflict with one another, pointing to a need for enhanced coordination in the global energy governance complex. Coordination does not necessarily mean that trade-offs and inconsistencies are avoidable, however. In some cases, a prioritization of different energy policy goals will be required. Such coordination is already taking place to a limited extent, with various institutions (G20, IEA, IMF, OECD, OPEC, World Bank) collaborating on enhancing transparency around fossil fuel subsidies, for instance. A related question is whether a focal institution within the global energy governance complex would be helpful. This role could be played by an institution such as the IEA, but to play that role, the organization would need to open up to non-members first (Van de Graaf 2013).

Third, concrete measures to address fossil fuel development are in fact conceivable under both the UNFCCC and the WTO. Such measures could be adopted, taking into account the fact that energy policy remains one of the issues where states are least likely to cede much sovereignty to international institutions. Under the UNFCCC, a significant first step would be to expand the possibilities for extraction-based accounting, without seeking to replace the system of production-based accounting that has been in place for over 20 years. Moreover, several ways forward exist for Parties to the UNFCCC to start addressing fossil fuel subsidies more explicitly, ranging from high-level commitments to practical action to enhance the transparency of subsidies. Another option under the UNFCCC will be for Parties to engage more deeply with the concept of "net avoided emissions". Such engagement may take place in the context of REDD+, but the ideas presented – as well as the challenges – merit further investigation.

As for the WTO, the paper identifies ways in which WTO Members could more actively engage with the issue of fossil fuel subsidies. An initial step would be to improve the transparency of fossil fuel subsidies by making better use of the notification and surveillance system of the SCM Agreement. This may be possible through changes in practice rather than law. Putting such harmful subsidies on the negotiation agenda will undoubtedly be challenging, given the general state of the trade negotiations. However, there may be ways of starting informal discussions among a smaller group of countries.

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