# The Political Economy of Incumbency Fossil Fuel Subsidies in Global and Historical Context

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#### 4.1 Introduction

This chapter situates the contemporary policy and academic debate about the politics of fossil fuel subsidies and their reform within a wider historical and material context. Fossil fuel subsidy reform represents a prerequisite for any serious attempt to dismantle the fossil fuel economy and accelerate what is being referred to openly as an 'energy revolution' (Greenpeace 2015) or more specifically as a 'clean energy revolution' (Climate Group 2016). Yet it is ultimately just one of a series of political moves and interventions in a hotly contested political terrain over energy futures, a space dominated by some of the most powerful governments and corporations in the world, but increasingly also occupied by new social movements. Understanding this terrain and locating fossil fuel subsidy reform's place in the broader politics of decarbonisation help to provide a clearer sense of the challenges that face reform initiatives. They can also highlight where such initiatives might thrive and ride on the back of other waves of reform eroding the bedrock of fossil fuel power that has held such sway over the global economy over the last century (Mitchell 2011; Huber 2013).

This requires an understanding of the politics and political economy of energy transitions because fossil fuel subsidy reform is seen as a key lever to accelerate a transition to a low-carbon economy. But reforms to subsidy regimes also touch upon the deeper politics of transformations to sustainability (Scoones et al. 2015), since energy use is so closely tied to all other aspects of sustainability, such as food, water, housing and transportation. This has been brought to the fore by the 2015 Sustainable Development Goals, which demand simultaneous action on land, food, agriculture, water and energy – domains where questions of access, security and sustainability give rise to political trade-offs among competing demands and pathways. Because of these connections, the decisions on which forms of energy production and consumption are supported and subsidised, or transitioned away from, have wide-reaching and highly uneven implications for the economy and

society as a whole. It is therefore unsurprising that the politics of fossil fuel subsidy reform serve as a lightning rod for the expression of a wide range of social concerns and economic interests.

In this sense we need to think about fossil fuel subsidy reform as part of a wider societal challenge because the forces, actors and institutions who oppose and support it are also powerful actors in broader debates about energy transitions and transformations towards sustainability. To use an analogy, we might prune the branches and dead leaves with fossil fuel subsidy reform, but the trunk of the tree (or the fossil fuel economy) could remain sturdy, with roots that spread and branches that grow back in different directions. Our use of the term 'regime' to describe the organisation of fossil fuels in the global economy differs both from the way in which it is used by some scholars to refer to national-level transition processes (Geels and Schot 2007) and by other scholars to refer to norms, rules and decision-making procedures within international institutions (Krasner 1983). We instead refer to the mutually reinforcing assemblage of actors, institutions, infrastructures and webs of finance that work together to enable the global fossil fuel economy to function.

Evidence of the depth and reach of the fossil fuel regime's power is not hard to find. It manifests itself in the gaping chasm between government policies proposed thus far and the types of action that science suggests is necessary to keep global warming below dangerous levels. In the wake of the adoption of the much-feted 2015 Paris Agreement, it has become clear that the nationally determined contributions that are on the table leave us on course for warming of up to 3.4°C (UNEP 2016). Recognising the extent of the depth and reach of fossil fuel incumbency also helps us understand why, in spite of the evidence of potentially catastrophic climate change, governments and corporations still invest heavily in fossil fuels and support their extraction and use through fossil fuel subsidies. Indeed, the power of the fossil fuel industries to secure benefits for themselves is reflected in the distribution of fossil fuel subsidies. The figures are a constantly moving target depending on the prices of fossil fuels and which policies and measures are defined as subsidies (Sovacool 2017; see Chapter 2). Whichever way you look at it, though, the numbers are huge. The International Monetary Fund (IMF) reported that in 2015 fossil fuel subsidies (including the non-pricing of externalities) amounted to USD 5.3 trillion. This equates to USD 145 billion per day, USD 600 million per hour, USD 10 million per minute and USD 168,000 per second (IMF 2015). Beyond the vast scale of the subsidies, what is notable is the imbalance in favour of fossil fuels compared to other forms of energy production. A 2017 report from several non-governmental organisations (NGOs) suggested that Group of 20 (G20) countries provided four times as much public finance to fossil fuels as they did to clean energy (Oil Change International et al. 2017). With declining costs and an anticipated rise in end-user electricity prices by the 2030s, they predicted that global subsidies to renewables are on a declining trend.

So how do we account for this level of systemic organised bias in favour of fossil fuel energy sources and pathways?

## 4.2 Thinking about Incumbency

One seemingly obvious place to look for answers to this question is the rich literature on socio-technical transitions, much of which addresses questions regarding the role of innovative niche technologies in driving energy transitions and, more recently and to a lesser degree, questions of the political economy of energy transitions (Baker et al. 2014; Newell and Phillips 2016). A recent key focus in these literatures has been on the 'destabilisation' of fossil fuel regimes (Turnheim and Geels 2012, 2013), where the reduction of subsidies to fossil fuels is one policy instrument that is particularly significant in fostering 'creative destructive' policy mixes that simultaneously promote renewables and withdraw support from fossil fuel incumbents (Kivimaa and Kern 2016).

In order to promote the 'undoing' of fossil fuel regimes, though, it is necessary to have a deeper understanding of the broader relations through which fossil fuels remain 'locked in' (Unruh 2000; Erickson et al. 2015). There are two interlinked discussions in this broader literature that are particularly pertinent to understanding issues around fossil fuel subsidies and their reform. First, there is increasing focus on understanding incumbency in socio-technical systems. This has involved looking at the ways in which relations of incumbency slow or constrain transitions to lowcarbon futures, including the financial, technological and institutional mechanisms through which fossil fuel industries are maintained and which need to be undone in order to accelerate sustainable transitions. Second, the role of national contextual and institutional factors (Andrews-Speed 2016; Lockwood et al. 2016) and, to a lesser extent, the role of the state (Meadowcroft 2011; Johnstone and Newell 2017) are increasingly acknowledged as enabling and constraining forces within the literature on socio-technical transitions. These two aspects – the politics of incumbency and the role and nature of the state – afford important insights into the dynamics of fossil fuel subsidies and their reform. We briefly outline them below.

Until recently, research on sustainability transitions was focused on how new, low-carbon energy technologies such as wind and solar can be protected, developed and nurtured (Schot and Geels 2008). However, attention has shifted towards the resistance of incumbent fossil fuel—based actors to low-carbon transformations (Geels 2014) given the increasing urgency around the need for climate change mitigation and a recognition that dominant actors in current carbon-intensive energy systems are actively slowing transitions towards low-carbon futures

(Smink 2015). This literature has explored broader understandings of the lock-in of fossil fuel regimes that take into account the political dynamics that work to sustain incumbent energy pathways.

Analysis of the role of incumbent actors therefore has become an important strand of enquiry, as countering their power politically will be an important part of weakening the fossil fuel regime to bring about a sustainable transition. Fossil fuel subsidies help fossil fuels maintain a privileged status in energy systems. Campaigns and actions to end these mechanisms form an important part of the 'weakening' or 'destabilisation' of the fossil fuel regime (Turnheim and Geels 2012). Recent studies have looked at the lobbying strategies of incumbent actors and how they secure preferential policy treatment by making full use of privileged access to politicians (Smink et al. 2013; Wesseling 2015). It is through such channels of privileged access and institutional work that fossil fuel subsidies are maintained. Researchers have also found that 'political coalitions' play a crucial role in fossil fuel incumbency, spanning across political party lines and forming powerful pressure groups that influence national and international policy alike (Newell and Paterson 1998; Hess 2014).

This draws important attention to how political lobbying significantly constrains transformations towards a low-carbon future. The diffusion of sustainable technologies is unlikely to bring about a sustainable transition any time soon without simultaneous removal of the privileged positions of fossil fuel industries. However, such research often focuses solely on the strategies of certain actors within the energy sector when in fact it is through ostensibly 'non-energy-related' domains – including state institutions and cross-sectoral and institutional alliances – where some of the most persistent sticking points to a sustainable transition are found. Attention to these 'non-energy' areas has been opened up by recent work in sustainability transitions on political-economic and institutional perspectives to understand how broader contextual factors of a given policy setting influence the directionality of transitions (Hansen and Coenen 2015; Andrews-Speed 2016; Kuzemko et al. 2016; Lockwood et al. 2016). Such contextual factors include the nature of electoral systems and coalition politics, degrees of federalism and decentralisation and the distinct form that national-level policy processes take.

Incumbency goes beyond particular lobbying activities undertaken by fossil fuel actors in one sector, and researchers are beginning to identify the different 'locations' through which incumbency is maintained, whether it is through state institutions or financial and military-related interests (Johnstone and Newell 2018). For example, Cox et al. (2016) describe the 'deep incumbency complex' to understand the United Kingdom's energy policy in terms of cross-sectoral and distributed relations between a number of often seemingly disparate actors. Likewise, Baker et al. (2014) draw on Fine and Rustomjee's (1996) work on

the 'minerals-energy-complex' to understand how incumbency frustrates transitions to a low-carbon economy in South Africa. They employ this concept to understand power and key networks in South Africa's political economy. These networks are a product of the historical alignment of social forces, which are organised around the provision of cheap energy to producers of minerals and energy. This creates a deep dependence of the state upon particular modes of accumulation for securing its legitimacy and retaining power (see also Chapter 13). This research draws attention to the kinds of relations that can get overlooked when focusing on a particular sector (such as energy) as a tightly bound domain.

## 4.2.1 The Role and Nature of the State

The state is crucial here because it is within and through its institutions that incumbency is often solidified and reproduced, including through the provision of fossil fuel subsidies. Particular decision-making cultures of the state are important to understanding channels of access to influence the state. For example, the coordinated and consensual approach of German policymaking tends to involve a greater diversity of actors (including NGOs and trade unions) than the market-based approach of the United Kingdom (Lockwood et al. 2016). Elsewhere, researchers have studied the ways in which control over key fossil fuels sustains the global hegemony of key states, such as the United States, in the international system (Bromley 1991) and the particular model of neoliberalism that it promotes (Huber 2013) or more broadly, how key states in the global economy promote, protect and benefit from 'petro-market civilisation' (Di Muzio 2015).

This more global, geopolitical and multidimensional account of incumbency points to the need to pay attention to the role of the military. An extended notion of the state would incorporate what are sometimes referred to as 'military-industrial (and university) complexes' (Koistinen 1980). This is important because of the vast amount of fossil fuels militaries consume. They are both primary beneficiaries of fossil fuel subsidies and secondary ones, given that in several countries the military owns companies involved in fossil fuel production and distribution (see Chapters 11 and 15). The military also frequently secures and maintains access to these resources through the use of force.

Understanding incumbency enacted through the state is a potentially useful way to think about fossil fuel subsidies and energy subsidies more broadly. For example, both kinds of subsidies can be understood as state aid granted to the private sector to help deliver explicit policy goals. This can be done benignly in the creation of safety nets for the poor, in de-risking investments in lower-carbon

forms of energy or through tax breaks for improving access to key technologies that improve the energy security of the poor, in line with the Sustainable Development Goals. But it also serves less explicit state strategies of clientelism – and securing and buying support from key political constituencies – by using subsidies for particular groups of the poor and the rich. Examples from the literature include the provision of kerosene subsidies for farmers in India, where the subsidies create a political constituency dependent on their provision and resistant to their reform (Shenoy 2010), or tax breaks for large investors to induce them to invest in particular regions, sectors or infrastructures (e.g. Chapter 14). Hence, a combination of poor and wealthy political 'clients' benefits from fossil fuel subsidies, which makes it harder to bring about their reform in the face of broadbased resistance. The dual use of subsidies both to keep fossil fuel business interests solvent and to keep the wider public tied into fossil fuel systems of production is revealing of the dynamics of incumbency power. Likewise, as Sovacool (2017: 157) notes, 'subsidies become self-replicating because, once enacted, they continue to shape energy choices through the long-lived infrastructure and capital stock they create. This justifies further expenditures to operate, maintain, and improve existing technologies. Coal and nuclear plants built 40 years ago, for example, still receive subsidies for coal mining and uranium enrichment.' Koplow (2014) refers to this as the energy subsidy 'trap', whereby once a government begins subsidising, such efforts become protected and defended by beneficiaries.

# 4.2.2 Rent-Seeking and the Materiality of Fossil Fuels

The material and political properties of fossil fuels also make them attractive to state elites and entrench reluctance to reduce state subsidies to them. Work on the 'resource curse' emphasises the shared interests of (neo-)extractivist elites, such as in Nigeria and Venezuela, in using rents from oil to insulate themselves from popular pressure (Ross 2012). The 'lootability' (Bridge and Le Billon 2013) of oil makes it an attractive 'political resource' because it provides a steady flow of lucrative revenue for state and corporate actors. It also generates sufficient surplus rent to buy off local opposition or dissipate pressure for reform through populist distributional measures, including subsidies for energy consumption. The ability to extract rents and maintain high degrees of control over the production and consumption of fossil fuels is often preferable to state and corporate elites over pathways organised around off-grid, decentralised and renewable energy systems, where the same degree of rent-seeking might not be possible. In Kenya, for example, Newell and Phillips (2016) show how fossil fuel extraction and geothermal exploration enjoy fuller state support compared

to off-grid renewable energy provision because it enables political control over key resources and the negotiation of contracts remains in the hands of national elites.

Fossil fuel subsidies are not just a subsidy to private actors, however. Given the ongoing dominance of state-owned enterprises, especially in many of the world's 'rising powers', they essentially serve as a subsidy by the state for the state (Victor et al. 2012). Governments own 50 per cent of the world's production of fossil fuels, and 70 per cent of oil and gas production occurs through companies that are wholly or partly state owned. It is unsurprising, therefore, that there are often high levels of policy support for, and fewer regulatory demands made of, state-owned enterprises, even in the face of citizen protests (Newell 2005). This poses challenges both for subjecting state-owned enterprises to state climate regulation and for discontinuing financial support in the form of subsidies – when there may be few incentives to reduce the activities of enterprises whose revenues flow directly to state coffers.

Whether energy sectors are organised more along state- or market-led lines, it is also worth noting that the intimate relationship between energy and growth means that there is arguably a better 'fit' in terms of the materiality of fossil fuels and contemporary expressions of capitalism (Malm 2015). Their ability to fuel global trade and transportation and enable the interchangeability of power sources was key to the development of the 'growth paradigm' (e.g. Dale 2011). This helps us to understand both the reluctance demonstrated at the highest political levels to moving away from fossil fuels and the political, social, technological and infrastructural barriers that stand in the way of concerted attempts to do so. It also emphasises the challenges that renewable energy providers face in this context. Renewable energy producers are often pressed to show how their preferred pathway is consistent with the way in which energy provision is organised in contemporary capitalism around centralised infrastructures and grids (even if ownership is 'unbundled'). Organising energy systems in this way reinforces the possibilities of control by state elites within nations. It also enables globalised production and transport infrastructures for the movement of commodities around the global economy, which continues to be heavily reliant on the use of fossil fuels, especially oil. Subsidy changes or tax increases to transport fuels can provoke controversy, and blockades and strikes can hold governments ransom because of the potential disruption to these circuits of exchange that they can cause. Lockwood (2015: 475), for example, cites the example of Nigeria's attempt to remove subsidies on petrol and diesel; after little more than two weeks of violent protests, 'the government reduced prices again by 60%, reversing a large part of the reform. Over a year later, subsidies for road transport fuels in Nigeria remain in place.'

## 4.2.3 Political Lock-in

The fact that the globalised, export-led form of market integration that characterises the contemporary global political economy is heavily dependent on cheap energy for transporting goods (roads, shipping, air), and given the 'sunk costs' and 'increasing returns' established through the long-term construction of fossil fuel infrastructures (which in itself constitutes a huge subsidy to fossil fuel production) – alongside inadequate pricing of externalities from fossil fuel production – carbonintensive forms of energy production continue to appear cheaper compared to alternative forms of (cleaner) energy. This relates to infrastructural lock-in, where strong preferences traditionally exist for centralised electricity grids and large projects over decentralised local solutions and ownership structures. It underscores the point about the capacity for elites to extract rents at multiple points along supply chains, centralising power and control in potentially undemocratic ways. This also makes it easier for fossil fuel industries to claim that the expansion of their sectors is compatible with the broader growth imperatives of capitalism. In political economy terms, this is about the ability of fossil fuel interests, as one fraction of capital, to present their interests as representing those of capital in general (Newell and Paterson 1998).

A more nuanced understanding of the state requires, therefore, that we adopt a broader understanding of how incumbency is achieved through different locations and activities across the diverse array of institutions that constitute the state, as well as the state's role in reproducing the conditions for growth in a capitalist economy. The turn towards focusing on issues of institutions, political economy, power asymmetries and other contextual themes in sustainability transitions is to be welcomed (Kern 2011; Stirling 2014; Andrews-Speed 2016; Kuzemko et al. 2016; Lauber and Jacobsson 2016; Lockwood et al. 2016). However, a focus on broader cultural dynamics and national contextual factors – without discussing the nature of the state and the deeper social relations and economic dependencies upon which its power and legitimacy rest – only takes us so far in understanding incumbency and the special place afforded to fossil fuel industries (Johnstone and Newell 2018).

In short, states are not distant actors overseeing decisions affecting fossil fuel industries. The above-cited examples seek to highlight how states are often fully embedded, integral nodal points within networks of power through which fossil fuel incumbency is constituted. It is not simply that the state is 'lobbied' by the fossil fuel industry; rather, the problem is that the demarcations between public representatives and the private interests of large fossil fuel—based corporations are often blurred by the revolving door between the corporate sphere and public office (Wedel 2014). Examples include the appointments of Rex Tillerson, former head of

oil giant ExxonMobil, as US Secretary of State and Scott Pruitt as head of the Environmental Protection Agency (EPA); before his appointment, Pruitt filed multiple lawsuits against the EPA's regulations on behalf of the oil and gas companies that represent some his largest campaign contributors. This is captured graphically in the image of the 'fossil fuel web of power' used by the campaigning group Global Justice Now (GJN 2016). Taking these insights as a point of departure can assist in more detailed empirical assessments of incumbency in different contexts, where the location of incumbency is not assumed as being contained within a particular sector or regime, but rather is identified by looking more closely at how differing forms of the state prohibit or enable proactive action at reforming fossil fuel subsidies. Identifying more clearly the particular connections and relations sustaining fossil fuel incumbency can reveal the kinds of persistent embedded relations that will have to be undone for a transformation away from fossil fuels to take place within the timeframes deemed necessary by the scientific community.

# 4.3 The 'Ungovernance' of Energy Globally

Incumbency is not confined to domestic politics. The power of the fossil fuel regime is also manifest in the global governance and *un*governance of fossil fuels. 'Ungovernance' refers to areas of deliberate neglect – where policies and interventions are consciously not considered or pursued through self-censure because of the anticipated reaction of powerful incumbent actors and informed by previous experience. As Phillips and Newell (2013: 654) put it: 'Un-governed areas of energy policy are often as revealing of the exercise of power as areas where there explicit policy is in place.' In the arena of fossil fuel subsidy reform where there have been interventions, much of the momentum for change has come from initiatives such as the Global Subsidies Initiative (Victor 2009; see Chapter 10). The World Bank, IMF, Organisation for Economic Co-operation and Development (OECD) and other global governance actors are also heavily involved, suggesting a potentially important role for global energy governance.

Yet, despite the G20 fossil fuel subsidy reform commitment from 2009 (see Chapter 5), global energy governance remains weak in terms of appropriately regulating fossil fuel industries in line with the scale and urgency of the climate change problem. For example, the World Bank – a key actor promoting fossil fuel subsidy reform and governing climate finance – continues to provide high levels of finance to fossil fuels, indeed doubling its funding for fossil fuels between 2011 and 2015. It has provided USD 1.7 billion in total investments for exploration or projects that included an exploration component during these years (Oil Change International 2016), despite its ambition to lead the world on climate change (Mathiesen 2015). It is clear that the purpose of existing global bodies with

a direct mandate to address energy issues revolves around 'market-enabling' rather than 'market-restricting' measures. While bodies such as the International Energy Agency (IEA), World Bank and OECD have promoted fossil fuel subsidy reform (albeit in different ways; see Skovgaard 2017), their ideological preferences to achieve decarbonisation through pricing, innovation and technology development and transfer exclude the possibility of interventions aimed at directly regulating access to remaining reserves of fossil fuels. The more proactive governance of energy finance in the form of loans, aid, investment or subsidies across public and private domains has thus far been notable by its absence (Newell 2011).

The observed underdevelopment of global energy governance is unsurprising given the proximity of energy to core state strategy; its centrality to security and growth, as noted earlier, make it a central political priority. This is not to rule out an important future role for institutions of global governance in setting new rules and regulations or coordinating attempts at fossil fuel subsidy reform by international institutions (Van de Graaf and van Asselt 2017). In the meantime, though, given the political sensitivities that surround the issue of stricter regulation of fossil fuel subsidies, there is an unsurprising emphasis on voluntary approaches, such as voluntary peer review of fossil fuel subsidy reform within the G20 (Gerasimchuk 2013). At the same time, key international regimes such as the United Nations Framework Convention on Climate Change and the World Trade Organization have avoided addressing fossil fuel subsidies directly (see Chapters 7 and 8).

# 4.4 Political Tipping Points?

Despite the challenges and barriers to sustainability transitions created by the depth and scope of fossil fuel incumbency both at the nation-state level and at the global level, one question that looms large is whether we are now approaching a key conjuncture in the demise of the global fossil fuel regime (Leggett 2014). Initiatives to reform fossil fuel subsidies are central to this question, as are declining oil prices and (contested but prevalent) claims of peak oil, with even the Organization of the Petroleum Exporting Countries making statements regarding the importance of diversifying their energy mixes. Further indicators of an emerging political tipping point away from fossil fuels might be the growing power of the divestment movement and moves from universities, pension funds and sovereign wealth funds to discontinue investments in these industries. This has been combined with greater pressure on companies to disclose their carbon assets and a wave of shareholder activism (Newell 2008). There are shifting perceptions among some investors about the long-term future of fossil fuels amid concerns over stranded assets, despite the bullish attitude of oil majors such as ExxonMobil

about the security of their investments. Carbon Tracker (2013) suggests that as much as 80 per cent of coal, oil and gas reserves are now unburnable from a climate point of view. The falling costs of solar in particular make renewables cost competitive with fossil fuels. Pressure from the international climate regime in the wake of the Paris Agreement and statements from the Group of 7 that fossil fuel emissions should not be allowed in any sector of the economy by the end of the century send clear signals about the overall direction of change. There are also the increasing successes of climate justice movements to leave fossil fuels in the ground. Pressure to reform fossil fuel subsidies has to be seen against this broader confluence of pressures to transform the fossil fuel economy.

Should they choose to, states can use plenty of levers to accelerate decarbonisation through and beyond fossil fuel subsidy reform. Trade regimes could contain provisions aimed at reducing fossil fuel subsidies (see Chapter 7), and border adjustment measures could reduce the unfair competitive advantage enjoyed by fossil fuel—intensive energy sectors, such as cement and steel, that are not subject to carbon constraints. Other state-led measures that could be used to reorient broader industrial interests around a lower-carbon economy include the more widespread use of local content requirements, infant industry protection, carbon taxes and, where necessary, subsidies that have been so critical to reducing the role of fossil fuels in energy systems in countries such as Germany, Spain and the United Kingdom. There are clearly opportunities to create new sites of accumulation and opportunities for powerful fractions of capital to provide new models of growth along the lines of 'climate capitalism' (Newell and Paterson 2010).

The experience of fossil fuel subsidies to date illustrates the need to engage with the social justice dimensions entailed in the decarbonisation of the economy. This means minimising impacts on the poor, who may be disproportionately hit by the removal of fossil fuel subsidies. Dampening the impacts of fossil fuel decline on workers and communities can be enacted by using a mix of safety nets, vouchers and cash transfers (see Chapters 3 and 12). This implies developing and negotiating explicit social contracts for sustainability transitions with losers as well as winners, including compensation and severance packages, as has occurred in Poland, or (re-)training assistance, which is currently a contested terrain in China in the face of closures of coal plants (Whitley and van der Burg 2015; see Chapter 2). Also as a means of enacting a 'just transition', some governments have sought to impose social obligations on investors through, for example, Black Economic Empowerment criteria in South Africa's Renewable Energy Independent Power Producer Procurement Programme (Baker et al. 2014), or by developing regional economic development programmes (as has been done in Germany) to manage transitions away from fossil fuels in more equitable ways (Pegels and Lütkenhorst 2014).

We are seeing these issues play out in struggles over fossil fuel subsidy reform as attempts to dislodge incumbent power proliferate. There is a huge sensitivity to the social base of state power; poorer groups and movements can destabilise regimes over changes to fossil fuel regimes, as we have seen in Bolivia and Nigeria. More successful initiatives appear to be those which work with the grain of differing political economies and go beyond the issue of reducing carbon emissions – and towards recognising broader sustainability issues that must be considered when moving away from fossil fuels, including sustaining the jobs, livelihoods and skills of those dependent on those very industries. In other words, there are limits to one-size-fits-all policy prescriptions to fossil fuel subsidy reforms if they are not seen in this broader, long-term sustainability perspective, in which there is explicit recognition and treatment of the economic, social and environmental dimensions of reform.

### 4.5 Conclusion

In conclusion, we have seen how fossil fuel subsidy reform is an important site in the struggle to decarbonise the global economy. But it should be understood as only one tool, albeit an important one, to achieving a broader transformation. We examined the relations of incumbency related to fossil fuel industries to demonstrate how the same state institutions upon which we depend for a range of redistributional purposes are often fully embedded within broader networks of power that sustain fossil fuel economies. Thus, transformative change is unlikely through the sole focus on particular economic instruments that support certain industries but instead relies on reconfiguring the broader networks and uneven power relations upon which these instruments depend.

Experience to date is revealing of the broader political challenges around just transitions and the need to address the social justice dimensions of climate action. Multiple dimensions are entailed in the challenges of dislodging the global fossil fuel regime: political, institutional, material, economic and socio-cultural – and there needs to be active engagement on all fronts. Clearly, there are positive signs of progress, yet many challenges remain. While we see potential tipping points in the rise of social movements and powerful campaigns to eliminate fossil fuel subsidies – as well as the sensitisation of investors to the risks associated with continued investments in fossil fuels – the next crucial step will be when such calls are combined with regulation of access to remaining reserves of fossil fuels. Without this, it may be that the rate of sustainability transitions continues to lag behind the urgency articulated by climate goals. History suggests that such transformations take decades or centuries but that they always seem impossible until they are achieved.

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