

**Policy Pathways to Decarbonization: An analysis of the Global Subsidies Initiative's
Fossil-fuel Subsidy Reform Program**

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Abstract

Fossil-fuel subsidy reform represents a promising initiative that travels a pathway towards decarbonization. In 2012, the fossil-fuel subsidies paid by governments around the world amounted to US\$ 544 billion (IEA 2013). Expanding the definition of subsidy to include environmental and social externalities, like congestion, air pollution, accidents and untaxed carbon emissions, the figure rises to US\$ 1.9 trillion, according to the IMF (2013). While these subsidies help protect fossil-fuel producers and consumers from rising and fluctuating prices, they encourage wasteful spending and wasteful use of energy, depress private investment, reinforce inequality by disproportionately benefiting higher-income households, and increase carbon pollution. If subsidies were removed from fossil-fuels, the IMF (2013) estimates that global carbon pollution would decrease 13 per cent. The Global Subsidies Initiative (GSI) is a nongovernmental organization that encourages national governments to eliminate harmful subsidies and engages international fora to seek systemic action on phasing out subsidies that are trade-distorting and undermine sustainable development. This case study examines the role of the GSI as an intervention in the larger climate governance experiment of fossil-fuel subsidy reform. It explores the role of scaling, entrenchment, norm change, coalition building and capacity building. It finds strong preliminary evidence of scaling and entrenchment of the GSI's efforts in the larger governance experiment. Furthermore, norm change, capacity building and coalition building is also occurring in the broader policy community advocating for fossil-fuel subsidy reform.

1. Introduction

Fossil-fuel subsidy reform, as a set of initiatives, is gathering momentum to travel a pathway towards decarbonization. If subsidies were removed from fossil-fuels, the International Monetary Fund (IMF) (2013) estimates that global carbon pollution would decrease 13 per cent. Moreover, the significant lost state revenues from subsidies could be redirected to initiatives that create additional emission decreases. In 2012, the fossil-fuels subsidies paid by governments around the world amounted to US\$ 544 billion (IEA 2013). Expanding the definition of subsidy to include environmental and social externalities, like congestion, air pollution, accidents and untaxed carbon emissions, increases the estimate to US\$ 1.9 trillion, according to the IMF (2013). The Global Subsidies Initiative is the only nongovernmental organization in the world that is exclusively dedicated to subsidy reform and has managed over the last ten years to become a key player in both domestic and international efforts to reform fossil-fuel subsidies.

This case study of the Global Subsidies Initiative (GSI) begins by outlining a conceptual framework developed by Bernstein and Hoffmann (2013) and Hoffmann (2014), which includes explaining the role of experimental governance, governance models, scaling, entrenchment, norm change, coalition building, and capacity building. The paper then explains why fossil-fuel subsidy reform, in general, and the Global Subsidies Initiative, in particular, is the subject of this paper. Subsequently, an in-depth descriptive narrative is provided of the history of the GSI's work on fossil-fuel subsidy reform, followed by a look at the broader impact of the GSI. In particular, any preliminary evidence that demonstrates scaling, entrenchment, coalition building, capacity building or a normative shift is discussed. The purpose of this paper is to contribute to theorizing efforts on the role of experimental climate governance initiatives in creating pathways to decarbonization (Bernstein and Hoffmann 2013; Bulkeley and Castán Broto 2013; Hoffmann 2011). The case study concludes with a summary of findings, some thoughts on the challenges of finding causal pathways, and avenues for future work.

This paper is part of a larger research project that seeks to explain the decarbonizing trajectories of several dozen interventions through narrative histories that explore the causal mechanisms of each intervention (Hoffmann and Bernstein 2013). Ultimately, this project is interested in explaining the link between specific intervention trajectories and broader system outcomes, *i.e.*, whether the intervention reinforces the carbon-based socio-economic and policy

systems that have locked in those systems to high-carbon development or whether the intervention improves or transforms those systems toward decarbonization.

2. Conceptual Framework

The failure of mega-multilateral treaty making to effectively address the threats posed by climate change is causing increasing numbers of scholars to examine the ability of a wide range of climate governance initiatives to reduce carbon pollution (*e.g.*, Hoffmann 2011, Levin *et al.* 2012). These experiments or policy interventions involve a diverse array of non-state and state actors that seek policy pathways outside of the formal international agreement process. They include large-scale initiatives like Germany's national energy plan (*energiewende*) and small-scale endeavours like an urban cycling initiative. They can also be specific in scope, focusing on a single activity (*e.g.*, Chicago Climate Exchange), or integrated in scope, looking at multiple activities (*e.g.*, UK Climate Change Act). They can also be policy processes directly linked to legal authority (*e.g.*, emissions trading in China) or experimental initiatives that can be completely voluntary or combine legal and other forms of authority (*e.g.*, C40 Electric Vehicle Network). These means and mechanisms to promote decarbonization hold promise if they can result in system-transforming outcomes that can reduce emissions, disrupt carbon lock-in (Unruh 2000), and create new policy path dependencies and/or practices independent of carbon (Hoffmann and Bernstein 2013).

A critical aspect of climate initiatives leading to decarbonization may be their ability to scale up and entrench. Scaling occurs when a specific governance initiative or intervention grows larger (Bernstein and Hoffmann 2013, 3) and entrenchment takes place when a governance initiative becomes more durable (Levin *et al.* 2012). The sheer number of relatively small governance initiatives that exist at multiple scales (Hoffmann 2011; Bulkeley *et al.* 2012; Betsill and Hoffmann 2011; Newell and Paterson 2010) and the size of climate change problem necessitates a scaling up and out so that greater emissions reductions or other changes that lead to decarbonization at required scales can be realized. Hoffmann (2014) outlines four types of scaling: simple scaling, where individual initiatives grow larger in size or range of activities; self-organized scaling, where an initiative creates the political, economic, or technological spaces that other initiatives can fill; modular scaling, where initiatives are consciously copied elsewhere; and isomorphic scaling, where similar, but unrelated initiatives emerge in new areas.

Hoffmann (2013) outlines a fifth type of scaling, cross-over scaling, which takes place when an initiative motivates action in a more conventional governance process.

Like with scaling, there are multiple forms of entrenchment that will prove useful in this analysis. Levin *et al.* (2012) introduce four causal processes that can lead to entrenchment:

- Lock-in occurs when a policy intervention has immediate durability, such as when legislation is passed.
- Self-reinforcing takes place when the costs to reverse any changes rise over time.
- Increasing returns is a mirror image of self-reinforcing, where the benefits that accrue to those participating in the initiative increase over time.
- Positive feedback occurs when an initially untargeted population joins an initiative and thereby reinforce the choices of the initial target population to be part of the initiative.

Entrenchment can also occur indirectly. As advanced by Van der Ven (2014), indirect entrenchment occurs when “a governance experiment leads to durable and positive impacts that are tangential to the experiment’s original objective.”

Both scaling and entrenchment of governance initiatives are catalysts of transformational change. Hoffmann (2014) identifies three potential mechanisms that lead a climate governance intervention towards a pathway to decarbonization: norm change, capacity building, and coalition building. First, these initiatives can benefit from a larger societal norm change and also hasten norm change through its activities, which can in turn create a new normal for decision makers where taking aggressive action on climate change is seen as common sense. Second, capacity building can influence domestic policy making (Bernstein and Cashore 2000) improve the ability to make informed decisions through learning and demonstration effects (Selin and VanDeveer 2005). Lastly, coalition building can help initiatives strengthen ties across a wide variety of political actors and build the alliance needed to support strong climate action.

This conceptual framework of simple, self-organized, modular, isomorphic, and cross-over scaling, lock-in, self-reinforcing, increasing returns, positive feedback and indirect entrenchment, and the transformative mechanisms of norm change, capacity building and coalition building will be applied to the case of the Global Subsidies Initiative. However, first I justify why we selected

fossil-fuel subsidy reform in general, and the Global Subsidies Initiative in particular, for this analysis.

3. Why Fossil-fuel Subsidy Reform?

Fossil-fuel subsidies technically exist to help keep the price of fossil fuels lower than market prices and shield producers and consumers from price shocks from volatile global energy markets. Producer subsidies either help reduce the price received by suppliers when it surpasses a benchmark price. Consumer subsidies occur when the price paid by consumers is below a benchmark price. In 2012, the fossil-fuel subsidies paid by governments around the world amounted to US\$ 544 billion (IEA 2013). Expanding the definition of subsidy to include environmental and social externalities, like congestion, air pollution, accidents and untaxed carbon emissions, the figure rises to US\$ 1.9 trillion, according to the IMF (2013). To put this figure in perspective, this amounts to 2.9 per cent of global GDP, or 8.5 per cent of government revenues worldwide.

While these subsidies help protect fossil-fuel producers and consumers from rising and fluctuating prices, they encourage wasteful spending and wasteful use of energy, depress private investment, reinforce inequality by disproportionately benefiting higher-income households, and increase carbon pollution. If subsidies were removed from fossil-fuels, the IMF estimates that global carbon pollution would decrease 13 per cent. Moreover, fossil-fuel subsidies divert scarce government funds that would have been spent in other priority areas, such as education or healthcare. According to Achim Steiner, the United Nations Under-Secretary-General and Executive Director of the United Nations Environment Programme, fossil-fuel subsidies, "...divert government resources from pro-poor spending in Africa where governments spend an estimated 3 per cent of GDP – equivalent to their total health care allocation – on fossil-fuel subsidies" (GSI 2014). Keeping fossil fuels inexpensive also makes low emission alternatives, like renewable energy, energy efficiency and public transport systems seem more expensive.

Phasing out fossil-fuel subsidies does have risks. The poor are particularly vulnerable to rapid changes in energy prices. The interests of the fossil-fuel industry are entrenched in many countries and the industry is not a proponent of subsidy reform. Meanwhile poor transparency,

corruption, economic competitiveness concerns, along with multiple subsidy accounting standards make any reform initiatives challenging.

4. History of the GSI

There are many specific initiatives or interventions active in fossil-fuel subsidy reform that interact to form a larger governance experiment. One key player in this larger effort is the Global Subsidies Initiative, which is the focus of this analysis. It is the only NGO that is exclusively dedicated to subsidy reform and has managed over the last ten years to become a key player in both domestic and international efforts to reform fossil-fuel subsidies. This case study treats the GSI as the intervention, although a later study may examine the movement toward ending fossil fuel subsidies as a whole as the intervention in the context of the wider energy system.

Fossil-fuel subsidy reform has historically received spotty attention from government agencies (e.g. US EPA.), intergovernmental organizations (e.g., OECD, IEA), and environmental organizations (e.g., WWF, WRI, Green Scissors). However, subsidy reform did manage to get onto the agenda of the Doha Round of trade negotiations at the WTO, which began in 2001. As countries with major subsidies sought WTO membership, existing member used these negotiations as a way to push for the phase out of trade-distorting subsidies that could put existing WTO members at a competitive disadvantage. According to the GSI, subsidies related to agriculture, fisheries and services were the foremost issue on the minds of negotiators, who saw subsidies as an impediment for trade. Furthermore, several international environmental agreements like the Convention on Biological Diversity and the Kyoto Protocol, which came into force in 2005, have attempted to raise the profile of harmful subsidies (Steenblik 2007). At the time, a global commodities boom partly driven by rapid industrialization in China, rising profits of oil companies, increasing public concern over climate change, and interest in an emergent clean tech sector all coincided and generated unprecedented interest in subsidy reform. Yet country-level comparisons of subsidy estimates were often difficult to calculate and unreliable, if estimates existed at all. The US EPA, the World Bank and the US EIA all employed different ways to quantify subsidies.¹ Furthermore, information on subsidies was highly technical and isolated in disparate policy communities (Steenblik 2007). There was a

¹ Interview #2, consultant on energy subsidy reform, 20 May 2014

clear need for policy translation of subsidies across disciplines and coordination among different attempts at reform. A GSI staff member explains:

A group of NGOs, CSOs, some of the development banks, people like OECD, the intergovernmentals, recognized [in 2005] that there was a lot of interest in subsidy reform as an issue but there was not a specialist organization that was looking to push it forward and I think that categorization still holds true... There is lots and lots of support for it as an issue. But for most people it is something they would like to see but not something that they would like to specialize on. So it is secondary to their primary aim, whatever they may be interested in – whether its renewable energy, or climate change or poverty reduction. They can see that it is an important element but it is not their focus and not something that they are expert in or want to become, necessarily, experts in.²

A window of opportunity opened in 2005 in the lead up to Doha Round of WTO negotiations and with the Kyoto Protocol coming into force, both of which sought subsidy reform (Steenblik 2007). The International Institute for Sustainable Development (IISD), a Canadian NGO that works globally on sustainable and international development issues, marshalled funding from several European countries and philanthropic foundations to found the Global Subsidies Initiative, based in their Geneva Office. In 2005, the GSI became the first nongovernmental organization solely devoted to the issue of subsidy reform. The goal of the Global Subsidies Initiative (n.d.) is, “to encourage individual governments to undertake unilateral reforms on subsidy policy where these would deliver clear economic, environmental and social benefits and to generate a consensus in the World Trade Organization and in other forums on the need to take resolute, ongoing and systematic action to reduce or eliminate subsidies that are both trade-distorting and undermine sustainable development.” According to a former GSI staff member, “the idea of the GSI is that it would be a pioneer, shed some light on things that needed to be addressed, and fill in data gaps.”³ A current employee of the GSI expands on this: “...we thought we can sort of fill that [expertise] gap and become a facilitator, a repository of good knowledge and practice, a matchmaker that brings people together, an advisor and leverage other people’s efforts and all those kinds of things. So that’s why it started – the GSI.”⁴

There are four primary activities of the GSI: research, communication, facilitation, consulting. The GSI has published dozens of research reports on the characteristics of producer and

² Interview #4, GSI employee, 2 June 2014

³ Interview #3, former GSI employee, 23 May 2014

⁴ Interview #4, GSI employee, 2 June 2014

consumer subsidies, identifying lessons for reform, country-specific research, and reports on subsidy estimation methodology. Communication of its findings to non-experts is also a major role of the GSI. It publishes the Subsidy Watch Blog, publicizes subsidy reform-related events and news articles on its website, produces policy brief versions of many of its reports, and provides an online archive of subsidy reform research from a host of organizations. The GSI facilitates discussions on fossil-fuel subsidy reform among key governments, intergovernmental and non-governmental organizations, and organizes side-events at major meetings, such as the UNFCCC Conference of the Parties, Rio+20, G20 or APEC. It also acts as a consultant that governments, intergovernmental or non-governmental organizations hire for technical and communications advice on subsidy reform. For instance, a Middle Eastern country recently hired the GSI to provide insights on how the country can communicate about subsidy reform to their population.⁵

The GSI's mandate is to look at all subsidies that undermine sustainable development, which includes agriculture (biofuel and irrigation), trade and investment subsidies, not simply fossil-fuel subsidies. Indeed the first major initiative of the GSI focused on biofuel subsidies. The idea was to "cut their teeth" on this issue area that was "exploding at the time" and then take those skills, networks and credibility, and target fossil-fuel subsidy reform.⁶ It saw biofuel subsidy research as "a high leverage point, both because of its environmental impact and because no one else was really doing any of the work."⁷ The demand for this research was high: the GSI's first report on biofuels was downloaded over 250,000 times (Steenblik 2007). This demand is in part because the organization did considerable outreach to environmental groups and other organizations, but also because of its critical stance against subsidies of biofuels.⁸ At the time, environmental groups biofuels often heralded biofuels as an alternative to reliance on fossil fuels, but the GSI report criticized their purported benefits due to the high levels of distortionary public subsidies.⁹

⁵ Interview #4, GSI employee, 2 June 2014

⁶ Interview #3, former GSI employee, 23 May 2014

⁷ Interview #2, consultant on energy subsidy reform, 20 May 2014

⁸ Interview #4, GSI employee, 2 June 2014

⁹ Interview #3, former GSI employee, 23 May 2014

It was not until 2009 that the GSI began to focus in earnest on fossil-fuel subsidy reform. This coincided with two major non-binding commitments by the G20 and APEC to phase out fossil fuels. In September 2009 in Pittsburgh, the G20 countries committed “to phase out and rationalize over the medium term inefficient fossil-fuel subsidies while providing targeted support for the poorest. Inefficient fossil-fuel subsidies encourage wasteful consumption, reduce our energy security, impede investment in clean energy sources and undermine efforts to deal with the threat of climate change” (G20 2009). The G20 (2009) also asked the IEA, OPEC, OECD and the World Bank to “provide an analysis of the scope of energy subsidies and suggestions for the implementation of this initiative.” This announcement, pushed by Larry Summers, Director of President Obama’s National Economic Council, who had long been an advocate of fossil-fuel subsidy reform, and a few US environmental groups (Kirton 2013), caught many organizations working on fossil-fuel subsidy reform off-guard, including the GSI. A few months later, APEC, the premier Asia-Pacific economic forum agreed to a similar non-binding commitment to phase out inefficient fossil-fuel subsidies, adding 11 new countries to the group committed to the G20 phase out.

After this major announcement, the GSI provided technical and logistical assistance to the organizations pledged with procuring information on subsidy reform,¹⁰ and with the G20, its members and the APEC Energy Working Group.¹¹ The GSI also tracked the progress of the G20 and made recommendations on how G20 countries can fulfill the phase out commitment (e.g., GSI 2010), and published a paper on how G20 countries can peer review the subsidy estimates of other G20 countries.

The GSI also produces country-specific research on fossil-fuel subsidies, mostly for developing countries. To develop long-standing partnership in all countries where they work, the GSI works alongside, and often hires, local research institutions and experts to conduct some of the necessary research (Merrill 2014). They most recently have been active supporting reform efforts of national governments in Indonesia, India, Bangladesh, Vietnam, Egypt and Nigeria, but also raise citizen awareness about the subsidy reform process and impacts. The GSI uses several selection criteria to determine which country to examine: the ability to have a “good

¹⁰ Interview #3, former GSI employee, 23 May 2014

¹¹ Interview #4, GSI employee, 2 June 2014

public debate” about subsidies, the potential of finding local partners who have the necessary expertise and are sufficiently connected that the study can have some influence, and the degree to which other organizations have pursued fossil-fuel subsidy reform in that country.¹² Because of the length of time it takes to support reform efforts, typically 18 months to two years, and because of funding and staffing constraints, the GSI only works with a few countries at a time where, “the debate can really move and we have some influence and we can stay there.”¹³ The GSI also conducts retrospective case studies on the lessons countries may learn from attempts to reform fossil-fuel subsidies. Since 2010, they have carried out case studies on Brazil, France, Ghana, North Sudan, Malaysia, India, Indonesia, Iran, Poland and Senegal. Currently, the GSI is a 10-person FTE team with an annual budget of US\$ 2.5-3 million.¹⁴ Core and project specific funding is largely provided by government agencies of northern European countries.

The GSI encouraged the formation of a Friends of Fossil-fuel Subsidies Reform (FFFSR) group and currently plays a support function for the FFFSR.¹⁵ Spearheaded by New Zealand, this group is comprised of representatives from Costa Rica, Denmark, Ethiopia, Finland, New Zealand, Norway, Sweden and Switzerland (FFFSR 2014). The FFFSR meets twice a year, hosts side events at major international meetings (*e.g.* COPs, G20, and WTO meetings), and encourages interactions with countries that are typically less friendly to subsidy reform (*e.g.* Indonesia) with intergovernmental organizations and media. The original stated purpose of this group was to “...reinforce early signs of political commitment [for fossil-fuel subsidy reform] ... as set out in the most recent G20 and APEC Leaders’ communiqués.” by holding G20 member countries accountable to their commitment to fossil-fuel subsidy reform.¹⁶ Merrill (2014, 22) notes that FFFSR has been “instrumental in bringing governments together on fossil-fuel subsidy reform and raising the profile of the issue globally...”

The 2012 Rio+20 United Nations Conference on Sustainable Development provided another opportunity for the GSI to facilitate discussions that lead to the development of a pledge and a reaffirmation of the commitment to phase out inefficient fossil-fuel subsidies (IISD 2011; UNCSD

¹² Interview #4, GSI employee, 2 June 2014

¹³ Interview #4, GSI employee, 2 June 2014

¹⁴ Interview #4, GSI employee, 2 June 2014

¹⁵ Interview #3, former GSI employee, 23 May 2014; Interview #4, GSI employee, 2 June 2014

¹⁶ Interview #4, GSI employee, 2 June 2014

2012). An employee of the GSI explains, “We became a kind of unofficial coordinator of that [pledge], if you like, and put together the document that was the pledge and got about thirty other organizations to put their logo and sign up on to that and then held the pen on that before and during the Rio thing on what paragraphs and text could look like. So for that one we got quite centrally in.”¹⁷

Beyond the supporters of the GSI, namely the FFSR, donor countries and foundations, intergovernmental organizations involved in subsidy reform, client countries, partner research institutions and researchers, and environmental NGOs, the GSI has also had some critics. As mentioned earlier, many environmental NGOs were critical of their initial biofuels report in 2006. Canada, home to the GSI’s parent organization, IISD, has been the location of some of the most vocal criticisms against the GSI’s work. For instance, the Canadian Renewable Fuels Association was highly critical of a GSI report on Canadian biofuel subsidies (Pratt 2006).¹⁸ The Montreal Economic Institute (Chassin 2014) and University of Calgary Professors McKenzie and Mintz (2011) have both been critical of the fossil-fuel subsidy estimation methodology used by the GSI, arguing the GSI has a far too broad definition of subsidies. The McKenzie and Mintz study has been used by the Canadian Association of Petroleum Producers to argue that Canada’s oil and gas industry receives no subsidies from the federal government (Huffaker 2012). Further afield, there has been some criticism of funding sources for the GSI. The GSI is situated in a unique position where it is criticized by both environmental groups and biofuel industry associations for being captive to oil industry interests and the oil industry criticizes the GSI for being captive to environmental group interests.¹⁹

5. Scaling and Entrenchment of the Global Subsidies Initiative

*They took an issue from nothing to something in a very short period of time.*²⁰

Former IISD employee

¹⁷ Interview #4, GSI employee, 2 June 2014

¹⁸ Interview #3, former GSI employee, 23 May 2014

¹⁹ Interview #1, former IISD employee, 23 April 2014

²⁰ Interview #1, former IISD employee, 23 April 2014

Given this historical narrative of the Global Subsidies Initiative, it is now possible to return to the conceptual framework and examine which pathways in its attempts to scale and entrench fossil-fuel subsidy reform, look for evidence of the transformative mechanisms of norm change, capacity building and coalition building, and search for preliminary evidence of catalysts of transformational change.

Scaling

To revisit, scaling occurs when an initiative grows larger. This case study looks for evidence of five variations of scaling: simple, self-organized, modular, isomorphic, and cross-over. Simple scaling occurs when an individual initiative grows or increases its activities. For example, over time the GSI has engaged with more countries and expanded its operations, activities, and networks.

Self-organized scaling takes place when an initiative spawns further initiatives [or interventions] as other groups begin to occupy the niches created by the original initiative. This type of scaling was seen in how other groups would use analysis conducted by the GSI in their own work. In Canada, the GSI producer subsidy report estimated there was \$1.3 billion in federal subsidies to the fossil-fuel industry (Sawyer and Steibert 2010). Groups such as the Green Budget Coalition, labour and environmental NGOs, and political parties all publicly used this \$1.3 billion estimate (BlueGreen Canada 2012, NDP n.d). For example, the Green Budget Coalition used the GSI's analysis to successfully lobby Finance Canada for subsidy reform (Green Budget Coalition 2013). These activities, independent of the work of the GSI and often much more public, were highly complementary to the stated goals of the GSI. Outside of Canada, the work of the GSI has been leveraged by environmental groups like Greenpeace to inform their position at the Rio+20 conference (Lerner and Tsenikli 2012). As described by a former IISD employee, "They [the GSI] populate an area then somebody comes up behind them and they move on to another area and sow the seeds as it were."²¹

²¹ Interview #1, former IISD employee, 23 April 2014

Modular scaling is seen when governance interventions are consciously copied elsewhere. There is no indication that modular scaling has taken place, as the GSI remains the only NGO solely focused on subsidy reform. Elements of the approach taken by the GSI can be seen in programs like the World Bank Energy Sector Management Assistance (ESMA) Program, which like the GSI, provides technical assistance to countries attempting to reform fossil-fuel subsidies. However, as an intergovernmental organization, the World Bank clearly has a different role than a small NGO in subsidy reform efforts of developing countries. More research is needed to determine how conscious the World Bank efforts through ESMA program copied the GSI.

Isomorphic scaling occurs when similar but unrelated initiatives emerge in new areas. Because of the facilitation role played by the GSI between environmental NGOs, intergovernmental organizations, and national governments, it is challenging to make the case that the experimentation seen in national governments or intergovernmental organization to support fossil-fuel subsidy reform is unrelated to the GSI.

Cross-over scaling happens when an initiative's activity spurs a response in a traditional governance mechanism, like national policy or multilateral negotiations. This type of scaling is difficult to solely attribute to the GSI's efforts because of the number of actors and arenas involved. For instance in Canada, beyond the GSI report, there was also subsidy estimates produced by the Pembina Institute and the Federal Commissioner on the Environment and Sustainable Development which likely shaped the federal government's decision to phase out fossil fuel subsidies.²² The GSI did have an instrumental role in advocating for the Rio +20 pledge to phase out fossil-fuel subsidies, a position that was ultimately reflected in the final report for the Rio +20 conference (UNCSD 2012). Cross-over scaling is happening as the agenda of fossil-fuel subsidy reform is increasingly prioritized by intergovernmental organizations like the IEA, IMF, World Bank, OECD, who are now investing more resources into fossil-fuel subsidy reform efforts. For instance, the World Bank ESMA Program now has a US\$15 million program to help countries phase out fossil-fuel subsidies subsidy reform that the GSI considers an indicator of success for their organization (ESMA 2014).²³

²² Interview #1, former IISD employee, 23 April 2014

²³ Interview #4, GSI employee, 2 June 2014

Entrenchment

Entrenchment takes place when a governance initiative becomes more durable and difficult to reverse. As noted above, there are four causal processes that can lead to entrenchment (Levin *et al.* 2012): lock-in, self-reinforcing, increasing returns, and positive feedback. Lock-in is seen when an intervention has immediate durability. An example of this is when a national government eliminates fossil-fuel subsidies. In Canada, the federal budgets of 2007, 2011, and 2012 eliminated approximately US\$400 million of fossil-fuel subsidies (Green Budget Coalition 2013). While it is often not possible to make a direct link between the GSI's effort and the action of a national government to eliminate subsidies, because of the ubiquity of their subsidy estimate figure, it can be argued that the GSI did play a key role in this case. Additional interviews with governmental officials may provide additional insights on this link with entrenchment.

Self-reinforcing occurs when the costs to reverse rise over time. For the case of fossil-fuel subsidy reform, these costs are more political than economic: when national governments re-affirm their pledge to phase out subsidies. This can be seen in the re-affirmation of some G20 countries at the APEC summit a few months later, at subsequent G20 meetings (2010, 2011, 2012, and 2013), and at larger venues like Rio +20 in 2012. Each subsequent re-affirmation makes it politically more costly for a country to avoid reforming fossil-fuel subsidies. The rising political costs of reversing commitments to subsidy reform also contribute to normalization, as efforts to phase out fossil-fuel subsidies becomes taken for granted. Entrenchment through a self-reinforcing causal mechanism can also happen within intergovernmental organizations. The IMF, in a high profile report release in 2013, advocated that beyond the standard WTO definition of subsidies, any estimate should also include the untaxed social and environmental costs. This helped to push the boundary of what is considered a fossil-fuel subsidy from a more conservative global estimate from the IEA of US\$ 544 billion to US\$ 1.9 trillion (IEA 2013; IMF 2013), making it more difficult for other intergovernmental organizations like the OECD, who are using a more tightly bounded definition of subsidies, to communicate their work to the press and

national governments.²⁴ As the IMF continues to use the broader definition and it continues to be cited by more environmental groups, CSOs and media, it makes it more challenging for other lower estimates to remain credible, despite the discrepancy in estimates being simply the result of different scope.

Increasing returns occurs when the benefits to those participating in the initiative increase over time. This can be seen as more intergovernmental organizations become more consistently involved in fossil-fuel subsidy reform. The IEA, IMF, OECD, and World Bank, along with the GSI, have since 2013 been meeting every three to four months to coordinate efforts and collaborate on future initiatives.²⁵ As more funding, technical expertise, and senior staff time is committed by these intergovernmental organizations to fossil-fuel subsidy reform, their role as advocates on this issue becomes more entrenched.

Positive feedback takes place when an initially untargeted population joins an initiative and thereby reinforce the choices of the initial target population to be a part of the initiative. The clearest example of this is the 2009 G20 commitment to phase out fossil-fuel subsidies, which caught many working on this policy issue by surprise and “completely changed the game. There is an order of magnitude difference in the political attention on that issue from one day to the next.”²⁶ All of a sudden “we have political commitment but we don’t have the data.”²⁷ The G20 announcement helped the larger fossil-fuel subsidy reform governance experiment to “gain traction globally. They [the GSI] were well positioned to lead...” reform efforts after this announcement.²⁸ In this vastly changed policy landscape, the GSI advocated for creating a consistent definition of subsidies, mapping out the stages needed to obtain greater transparency, selecting which countries should be more closely examined and where the GSI could best contribute to the larger effort.²⁹ The trajectories created by increasing returns and positive feedback causal mechanisms help expand supporting coalitions for fossil-fuel subsidy reform and further enhance entrenchment (Levin *et al.* 2012).

²⁴ Interview #3, former GSI employee, 23 May 2014

²⁵ Interview #4, GSI employee, 2 June 2014

²⁶ Interview #4, GSI employee, 2 June 2014

²⁷ Interview #3, former GSI employee, 23 May 2014

²⁸ Interview #1, former IISD employee, 23 April 2014

²⁹ Interview #3, former GSI employee, 23 May 2014

The final type of entrenchment is indirect entrenchment (Van der Ven 2014), where durable and positive impacts occur that are peripheral to an initiative's core objective. Many of the indirect or tangential benefits of fossil-fuel subsidy reform have been recognized by the GSI and its parent organization, the IISD. While some proponents of fossil-fuel subsidy reform may only want to remove tax expenditures and simplify the tax code, the GSI has been clear—as shown in the stated goal of the organization—to seek reforms that would deliver not just economic benefits but also environmental and social benefits (GSI n.d.). A current GSI staff member explains, “IISD as a sustainable development organization would like to see reductions in carbon dioxide emissions, reduction in local air pollution, in some of the externalities around energy securities...”³⁰ As a result, most seemingly tangential benefits of fossil-fuel subsidy reform have been a core consideration for the GSI from its inception. Consequently, indirect entrenchment as a concept is not applicable to this particular case study.

Mechanisms for Transformation

Norm Change

Hoffmann (2014) identifies three potential mechanisms or pathways through which climate governance initiatives can lead to decarbonization: norm change, capacity building and coalition building. Norm change can be seen from both larger societal normative shifts and resulting from an initiative's activities. The work of the GSI has clearly benefitted from a normative shift in how policymakers from around the world see fossil-fuel subsidy reform. An interviewee, who has been working on fossil-fuel subsidy reform for thirty years, observed the following:

I think there's been a mainstreaming and it has made it more difficult for industry to try to argue away that they are getting support. In the beginning they would say 'it's not cash. It's not a subsidy.' But now they can't make that argument anymore... There's been an increased rigour and consistency with how these issues are defined but it is not a battle that is over.³¹

The GSI has been a key player in advocating for improved rigour and consistency in fossil-fuel subsidy reporting but there has also been a larger trend in many countries towards improved transparency and accountability of financial reporting both for the private and the public sector.

³⁰ Interview #4, GSI employee, 2 June 2014

³¹ Interview #2, consultant on energy subsidy reform, 20 May 2014

This larger shift in norms helps provide a more fertile context in which to plant the GSI's call for reform. A GSI employee notes the change over the last three years has been tremendous but that the shift in norms has also coincided with a challenging fiscal environment:

I think if we look at that from the perspective with a level of awareness of the level of subsidies and their impacts and the level of willingness to discuss this issue nationally or internationally, the change over the last three years has been enormous. There are countries in the Middle East North Africa region who had previously said, 'Don't go there. Don't talk about subsidy reform because you can't have that conversation.' Now you can. Partly that is due to a better understanding of the issue, and so on, and also because of the high energy prices we have had over the last few years have really imposed an enormous fiscal burden on those countries. They realized that you can't maintain guaranteed prices to your population and have public finances that are able to invest in all the other things you want to do and are stable. There at some point is a choice there. That has been a fundamental normative shift, absolutely, no doubt about it. There is a better understanding of this issue. I think that if you look at when World Bank goes to countries and talks about this issue, its better understood than it was. The GSI's work has come out enormously over the last three years. IMF, a new player on the block to some extent, again has a very good understanding of the issue now. OECD's work, GIZ's work, and then you see the standard of papers that people are writing when they write a review of the issue. The standard of those papers compared to three years ago is fundamentally much, much better. So, yes, I think there has been a normative shift. Partly, by the organization's work in the area and a lot to do with the seriousness of the fiscal challenge.³²

The GSI is able to link norms around financial responsibility during the time of a fiscal crisis to norms of social justice and environmental stewardship. When these multiple frames are invoked, the barriers to removing fossil-fuel subsidies are reduced, as actions aimed at reform become more commonsense.

Capacity Building

The transformative mechanism of capacity building focuses on the ability for initiatives to teach how to act on climate change and sometimes on providing the direct financial or political resources to the governance initiative and/or groups that support it to pursue or implement the initiative's. Capacity building may also involve influencing domestic policy making processes and potentially using their knowledge and resources to create change (Bernstein and Cashore 2000). The role of the GSI as an influencer and capacity builder of domestic policy is seen in its strategic approach to country-level engagement. As noted earlier, it will only engage countries

³² Interview #4, GSI employee, 2 June 2014

that can have a “good public debate” about subsidies, knowing that closed-door policy making on a high-profile issue like consumer fossil-fuel subsidies is ill-advised. The GSI will not engage a country whose policy space around fossil-fuel subsidy reform is already crowded. Working with reputable local experts and respected research institutions who already have policy influence for around 18 months to two years is needed before the GSI can expect results and impact. At the level of intergovernmental organizations, the GSI has worked closely with top experts and influential organizations from before the organization was officially launched at the end of 2005. Having access to and relevance with some of the major intergovernmental organizations was critical for the GSI as well as the ability to be a pioneer and push more aggressively for subsidy reform than these larger organizations.³³ This approach to working alongside intergovernmental organizations, as the following section on coalition building will attest, has proven to be an effective strategy for the GSI.

Climate governance initiatives can also leverage the role of demonstration effects and policy learning for states as a way of building capacity (Selin and VanDeveer 2005). For example, the GSI has published dozens of country-level case studies and reports on lessons learned from various reform efforts. All of these publications can be found in a library on the GSI website along with a database of non-GSI studies on fossil-fuel subsidy reform. One energy subsidy reform consultant has highlighted the importance of consistency of the GSI’s focus on subsidy reform.³⁴ One-off reports or inconsistent financial support has limited the effectiveness of NGOs and intergovernmental organizations advocating for fossil-fuel subsidy reform. In contrast, the GSI has been around for nine years and has a solid base of institutional knowledge and publications. The GSI is also able to go to where the decision makers meet host side events at G20, APEC, COP, and WTO meetings, where they can often attract ministerial level attendance from key states. These side events are essential for sharing the best practices that the GSI and other countries and institutions have developed to reform fossil-fuel subsidies.

Coalition Building

³³ Interview #3, former GSI employee, 23 May 2014

³⁴ Interview #2, consultant on energy subsidy reform, 20 May 2014

The final transformation mechanism discussed in this paper is coalition building. It can help initiatives strengthen ties across a wide variety of political actors and build the alliance needed to support strong climate action. The GSI offers many instances where it has leveraged and built diverse coalitions to advocate for fossil-fuel subsidy reform. The Friends of Fossil-fuel Subsidy Reform is an example of the GSI sowing the seeds for the formation of a coalition of countries that helps hold G20 members accountable to their commitment to phase out fossil-fuel subsidies. A former IISD staff member describes GSI's role as a "catalyst and connector."³⁵ For the case of GSI's role in fossil-fuel subsidy reform in Canada, the GSI worked with the Green Budget Coalition, a group of the country's leading environmental organizations to successfully lobby the Department of Finance officials.³⁶ The GSI has earned a role as a "neutral player" and has worked with countries from five continents and with organizations as diverse as Greenpeace and OPEC.³⁷ When the G20 requested the IEA, OECD, World Bank and OPEC work together on the scoping of fossil-fuel subsidies and reform implementation strategies, the GSI, who was familiar working with the other three intergovernmental organizations, worked with OPEC to explain how to engage the IEA, OECD, and the World Bank and to share with OPEC what the GSI knew about fossil-fuel subsidies.³⁸ The GSI has also been invited to assist the APEC Energy Working Group's subsidy reform efforts and to provide technical assistance to the OECD for country-specific fossil-fuel subsidy estimates and is invited to the fossil-fuel subsidy reform coordination meetings between the OECD, IEA, IMF and World Bank.³⁹

6. Conclusion

This case study provides a narrative analysis of the GSI's fossil-fuel subsidy reform program. Data gathered thus far indicates evidence of simple scaling, self-organized scaling, and cross-over scaling. Lock-in, increasing returns, positive feedback, and indirect entrenchment all appear to be occurring in this case. The three potential mechanisms or pathways advanced by Hoffmann (2014) through which a climate governance initiative can lead to decarbonization are present: norm change, capacity building, and coalition building.

³⁵ Interview #1, former IISD employee, 23 April 2014

³⁶ Interview #1, former IISD employee, 23 April 2014

³⁷ Interview #2, consultant on energy subsidy reform, 20 May 2014

³⁸ Interview #3, former GSI employee, 23 May 2014

³⁹ Interview 2, consultant on energy subsidy reform, 20 May 2014; Interview #3, former GSI employee, 23 May 2014

Despite this evidence of scaling and entrenchment and of potential transformation mechanisms, identifying a discrete causal pathway between Global Subsidies Initiative activities and actualized fossil-fuel subsidy reforms is difficult for four main reasons. First, timing. The coincidence of rising energy prices, growing interest in climate change, a global economic recession, and strained public finances combined with the US hosting the G20 in 2009 and wanting to make a mark with a pledge for phasing out fossil-fuel subsidies. As a GSI employee pointed out, it was in this convergence of issues where, “People started recognizing the strong links between stable public finances, about how subsidies held back renewables, energy efficiency, clean energy solutions.”⁴⁰ In this *mêlée*, GSI was able to occupy the space of facilitator and knowledge broker. However, it would be presumptuous to assume that GSI’s effectiveness as an organization was entirely the result of its own efforts. Also, fossil-fuel subsidy reform remains a very active public policy issue for many countries and organizations, it is challenging to assess the role of the GSI before the dust has settled.

Second, fossil-fuel subsidy reform is being advocated by the GSI in multiple arenas (e.g., a host of countries, UNFCCC, WTO, APEC, G20). These efforts and arenas interact and make it difficult to determine, for instance, the impact of the GSI on Indonesia’s subsidy reform efforts, because the GSI is engaged with Indonesia through its work at the G20 and APEC, in addition to direct interaction between Indonesia and the GSI.

Third, beyond multiple arenas, multiple organizations are involved in fossil-fuel subsidy reform efforts. From national NGOs like Canada’s Green Budget Coalition or Green Scissors in the United States, to intergovernmental organizations like IMF, IEA, OECD, UNEP, the policy advocacy space on fossil-fuel subsidy reform is now rather busy compared to pre-2009. Because fossil-fuel subsidy reform is now dominated by large, well-resourced intergovernmental organizations, the GSI is looking to shift to new, less crowded areas that have data gaps and where it can add the most value. For instance, leveraging its current work on fossil-fuel subsidies, it seeks to expand to work on subsidies in electricity markets, or subsidies for renewable power.⁴¹

⁴⁰ Interview #4, GSI employee, 2 June 2014

⁴¹ Interview #4, GSI employee, 2 June 2014

Fourth, there is a notably absent paper trail between the work of the GSI and the recent work of intergovernmental organizations working on fossil-fuel subsidy reform. A document analysis of major reports from the IMF, IEA, World Bank, and the OECD from 2009 to present yielded very few mentions of the GSI or its analysis. This comes despite interview data that suggests a much more close relationship between the organizations than what the documents suggest. While it is typical of many intergovernmental organizations to not cite the work of NGOs in their analysis, this makes the identification of the causal link between the GSI's efforts and the work of intergovernmental organizations more challenging to establish without additional interviews with IMF, World Bank, IEA and OECD staff.⁴²

Despite this apparent resistance of the Global Subsidies Initiative case to having a discrete causal chain identified, it is possible to sketch out a contextualized, networked understanding of the organization's role in a much larger climate governance experiment. Initial outreach and involvement of key organizations and individuals in subsidy reform from the beginning helped to form links with established authorities on the subject. The GSI's work on biofuel subsidy reform propelled the organization forward as a leader in promoting subsidy reform and grew its expertise and credibility. The G20 and APEC commitments to phase out fossil-fuel subsidies provided a fortuitous opening for the GSI to play the role of an infrastructure builder and networker at both the domestic and international level. While many signatory countries to the G20 commitment have demonstrated little progress on subsidy reform (Koplow 2012), there is a much more significant and sustained commitment by several key intergovernmental organizations (e.g., IEA, IMF, OECD, World Bank) on the issue and the GSI has earned a seat at the table at those high-level discussions. The GSI continues to advocate for consistent and accurate producer and consumer fossil-fuel subsidy estimates, to facilitate discussions on subsidy reform and expand its work into electricity system subsidies. There is strong preliminary evidence of scaling and entrenchment of the GSI's efforts in the larger governance experiment. Norm change, capacity building and coalition building is clearly occurring in the broader policy community advocating for fossil-fuel subsidy reform.

⁴² Interview #1, former IISD employee, 23 April 2014; Interview w #2, consultant on energy subsidy reform, 20 May 2014

Further research is needed to strengthen and expand the findings of this case study. Additional staff at key intergovernmental organizations could be interviewed to better determine the role of the GSI in the efforts of those larger organizations. Local researchers who have partnered with GSI to conduct country-level subsidy estimates could provide key information on the effectiveness of the GSI analysis in domestic subsidy reform efforts. Bureaucrats or elected officials in national governments who have been engaged on fossil-fuel subsidy reform could also provide insights on the role of the GSI.

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