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# Fossil fuel subsidies in developing countries

A review of support to reform processes

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July, 2014

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The authors are grateful for helpful comments provided by Ronald Steenblik of the Organization for Economic Cooperation and Development (OECD), Peter Wooders and Damon Vis-Dunbar of the International Institute for Sustainable Development (IISD) Global Subsidies Initiative (GSI) and Joerg Husar of the International Energy Agency (IEA), in addition to those provided by Dirk Willem te Velde of ODI.

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## Abbreviations

ADB	Asian Development Bank
APEC	Asia-Pacific Economic Cooperation
CSO	Civil society organization
ESMAP	Energy Sector Management Assistance Program
EU	European Union
FFS	Fossil-fuel subsidies
FFSR	Fossil-fuel subsidy reform
G20	Group of Twenty
GCF	Green Climate Fund
GDP	Gross Domestic Product
GHG	Greenhouse gases
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GSI	Global Subsidies Initiative
IDB	Inter-American Development Bank
IEA	International Energy Agency
IFI	International financial institution
IISD	International Institute for Sustainable Development
IMF	International Monetary Fund
MENA	Middle East and North Africa
NGO	Non-governmental organisation
OECD	Organisation for Economic Co-operation and Development
OCI	Oil Change International
ODI	Overseas Development Institute
SE4All	Sustainable energy for all
UN	United Nations
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change

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# 1 Introduction/Overview

## 1.1 Background

The McKinsey Global Institute estimates that governments are subsidising the consumption of resources (including water, energy, steel, and food) by up to \$1.1 trillion per year, and that many countries commit 5% or more of their GDP to energy subsidies (Dobbs, Oppenheim, Thompson, Brinkman, & Zornes, 2011). These amounts may be under-estimates, however, as subsidies for fossil fuel consumption in developing countries alone were estimated to be \$544 billion in 2012 (IEA, 2013a).

On top of their social and economic impact, fossil fuel subsidies have a significant impact on our climate. The International Energy Agency (IEA) lists phasing out fossil fuel subsidies as one of four necessary policies to keep the world on course for the 2-degree global warming target at no net economic cost (IEA, 2013b). The benefits to the climate of removing fossil fuel subsidies include:

- lowering the global cost of stabilising GHG concentrations
- shifting economies away from carbon-intensive activities
- encouraging energy efficiency, and
- promoting investment in the development and diffusion of low-carbon technologies (OECD, 2011).

In spite of important climate benefits, at present the crucial role of fossil fuel subsidy reform (FFSR) is not acknowledged in the United Nations Framework Convention on Climate Change (UNFCCC)<sup>1</sup>, and is only beginning to gain traction in discussions on the use of climate finance (Bast, Kretzmann, Krishnaswamy, Romine, & Traci, 2012)(Whitley, 2013a). There remain significant opportunities to support FFSR as part of wider climate mitigation efforts, which can play an important role in enabling the scale of investment required for the transition to low-carbon economies.

## 1.2 Objectives and methods

The aim of this research is to provide a review of the organisations and governments involved in supporting other countries to reform their fossil fuel subsidies and the approaches being undertaken. It builds a comprehensive understanding of which actors are working in the area of FFSR, what in-country advice and technical assistance is being proposed, planned, and undertaken, and finally to identify areas for strategic involvement, including through the use of climate finance.

The research covers:

- Types of interventions and their scope (Section 2). Types of activities are categorised into three areas: subsidy identification and estimation, country focused reform, and coordination. The scope of activities identifies countries of

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<sup>1</sup> Though there are some early proposals, for example Benninghoff et al, 2013

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focus; fossils fuels targeted; emphasis on consumer or producer subsidies<sup>2</sup>.

- Funding, delivery channels and entry points and delivery channels (Section 3).
- Opportunities for additional support to FFSR (Section 4).

This study was undertaken through literature review and by interviews with key actors in the subsidy reform space including: international organisations, donor countries, development banks and research organisations<sup>3</sup>. Where statements are not supported by citations or links the information has been sourced from the interviews.

This work was undertaken following an initial analysis of key programmes and stakeholders with UK government representatives from Department for International Development, Department of energy and Climate Change, The Treasury and the Foreign and Commonwealth Office.

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<sup>2</sup>Consumer subsidies typically lower prices (or consumer costs) below what they would be in a 'free market' and are used predominantly to lower the prices of fuels for transport, kerosene, and natural gas and liquid petroleum gas (LPG) used in homes, or fuels used by domestic petro-chemical industries. Producer subsidies usually take the form of preferential treatment for: selected companies, such as national oil companies; one domestic sector or product; and; sectors or products in one country when compared internationally. They commonly take the form of forgone government revenue, such as reduced taxes. (GSI, 2010)

<sup>3</sup> See list of interviewees in the annex.

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## 2 Types and scope of FFSR interventions

Activities to support FFSR can be broadly categorised in three areas:

- 1 Subsidy identification and estimation (international)
- 2 Country level support to FFSR, including reform-focussed research.
- 3 Coordination and learning platforms.

In the instances wherein organisations are involved in multiple activities, we have separated out their activities.

### 2.1 Subsidy identification and estimation

Typically seen as the primary step in a subsidy reform process, most of the organisations involved in FFSR are working on identifying subsidies and estimating their value to some extent. This work is also completed as part of country level support to FFSR (often building on the findings from international estimation activities), but this section profiles the key initiatives at the international level.

#### Current international inventories and resources

##### International Energy Agency (IEA)

The IEA is an intergovernmental organisation with a mandate to focus on energy security, economic development and environmental protection. It has a broad role promoting alternative energy sources, rational energy policies and multinational energy technology cooperation.

The IEA has been estimating fossil-fuel consumption subsidies in a number of developing and emerging countries since the late 1990s. The IEA calculates these subsidies using the 'price-gap method'. Where an energy product is traded internationally, this involves comparing the (lower) domestic price for the product with a benchmark, international price. The price gap multiplied by the affected volume equals the estimated consumption subsidy (IEA, 2012).

The IEA collects data annually from 40 developing countries and provides an estimate of the value of subsidies to oil products, natural gas, coal, and electricity generated from fossil fuels. Totals by country and fuel are published on-line, along with brief descriptions of subsidy reforms that are being implemented (IEA, 2013c). The IEA analysis is aimed at demonstrating the impact of fossil-fuel subsidies on energy markets, climate change and government budgets.

##### Organisation for Economic Co-operation and Development (OECD)

The OECD is an intergovernmental organisation of 34 countries founded with the aim of stimulating economic progress and world trade. In 2011, the OECD completed a first *Inventory of Budgetary Support and Tax Expenditures for Fossil Fuels* across 24 OECD countries (OECD, 2013); the Inventory was expanded to include all 34 OECD member countries a year later (OECD, 2013). The OECD's numbers are compiled from

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estimates of budgetary support and tax expenditures on a programme-by-programme basis, and include details of each element of government support. The main source of the OECD's information is official budget and tax-expenditure documents. The tax expenditures for each country, and each sub-national jurisdiction (in the case of federal systems), depend on the reference tax system for that country or sub-national unit, which means that the national-level estimates are not comparable across countries. The OECD covers government support to both production and consumption, and for all fossil fuels: peat, coal, natural gas, crude oil, refined petroleum products and (in certain limited cases) fossil-fuel based electricity. The OECD inventory provides an important information base for FFSR as it identifies and estimates the value of specific government policies and support. This contrasts with the IEA 'price gap method', which yields only aggregate national estimates of consumption subsidies that are manifest in price gaps.

The *Inventory's* chapters on OECD countries are currently being updated and are due to be published in early 2015. The OECD is also planning to publish a similar inventory for the BRIICS (Brazil, Russia, India, Indonesia, China, and South Africa) in late 2014.

The OECD is also aiming eventually to expand the *Inventory* to include the subsidy value of public support through guarantees and concessional loans, and equity injections. It might also expand the coverage to other countries. Meanwhile, it is preparing the database of support in a way that should allow the data to be used by computable general equilibrium (CGE) models.<sup>4</sup>

### **International Monetary Fund (IMF)**

The IMF is an international organisation with 188 member countries whose objectives are: to promote international economic co-operation, international trade, employment, and exchange-rate stability, including by making financial resources available to member countries to meet balance of payments needs. The IMF's activities to identify and estimate energy subsidies is driven by the aims of reducing expenses to domestic budgets, improving the targeting of support to the poor, and reducing incentives for excessive energy consumption. In 2013, the IMF published 'energy subsidy' estimates for 176 countries building directly on the data collected and compiled by the IEA and the OECD (IMF, 2013a).

Instead of categorizing their subsidy reporting by consumer and producer subsidies (the approach used by the IEA and OECD), the IMF report provides estimates on the basis of 'pre-tax' and 'post-tax' subsidies for coal, gas, oil and electricity (including non-fossil electricity) (IMF, 2013a). The IMF 'pre-tax' subsidies include: consumer subsidies for gasoline, diesel and kerosene (for 172 countries) and consumer natural gas and coal subsidies (for 56 countries) both using the price-gap approach; and producer subsidies for coal (for 16 OECD countries). The IMF 'post-tax' subsidies account for: the pre-tax subsidies listed above; tax breaks for fossil fuels such as reduced VAT; and the estimated gap between the actual end-user prices of fuels in a country and the IMF's estimate of a world-market price that includes also an optimal tax intended to internalize all negative externalities. Included in the IMF's list of external costs are the costs of damage to the climate

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<sup>4</sup> Computable general equilibrium (CGE) models are a class of economic models that use actual economic data to estimate how an economy might react to changes in policy, technology or other external factors.



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change (\$25 per tonne), health costs associated with emissions of local pollutants, and the costs to society of traffic congestion, road accidents, and wear and tear on roads (IMF, 2013a).

It is difficult to analyse opportunities for FFSR using IMF estimates as the post-tax data combines 1) tax breaks such as 'VAT', which fits a narrow definition of subsidy, and 2) the failure to account for externalised social and environmental costs, which takes a broader, non-standard definition of 'subsidy'. None the less, the IMF is sending an important message in referencing a global carbon price of \$25 per tonne, but may be double-counting environmental costs when referring to the emission-reduction potential of removing 'post-tax' subsidies (Whitley, 2013b).

Forthcoming analysis from the IMF includes:

- Refined estimates for appropriate taxes on fossil fuels in 150 countries (July 2014).
- A review of environmental policies (including carbon taxes and energy efficiency standards) with respect to their revenue generation and cost effectiveness.
- Research into traffic congestion pricing and the shift from fuel charges to fees based on the time and place of driving.

The IMF has also published reports and books on subsidy reform efforts at the country level (see Section 3.2).

## **GIZ**

GIZ is a federal enterprise owned by the German government, which mainly operates on behalf of the Federal Ministry for Economic Cooperation and Development (BMZ). It operates internationally and its main activities in developing countries are focussing on sustainable development and resource management.

GIZ began collecting information on fuel prices, taxation, and subsidies in sub Saharan Africa twenty years ago. This was completed with the aim of identifying how much income could be raised to support transport sector reform through fuel taxation. Since then the context for this work has expanded, to support taxation as good governance, environmental stewardship and the links between fuel taxation and technology development. The GIZ database has continued to expand over time, and has elaborated on the role of the instruments used to control fuel prices. It is currently updated every two years and includes retail prices for fuels for 170 countries (collected through a worldwide survey conducted on a particular day in November) and fact sheets with brief policy analysis for 120 countries (Wagner, 2013) (GIZ, 2014).

## **G20 and APEC**

The Group of Twenty (also known as the G-20 or G20) is a group of 19 individual countries<sup>5</sup> and the European Union (EU). Collectively, the G20 accounted for 78% of global carbon emissions from fuel combustion in

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<sup>5</sup> Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Republic of Korea, Mexico, Russian Federation, Saudi Arabia, South Africa, Turkey, United Kingdom, United States.

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2010. Asia-Pacific Economic Cooperation (APEC) is a forum for 21 Pacific Rim member economies that seeks to promote fair trade and economic cooperation throughout the Asia-Pacific region.

In 2009, the G20 agreed to 'phase out and rationalise over the medium term inefficient fossil fuel subsidies while providing targeted support for the poorest'. This G20 commitment was made on the basis that '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). This commitment was reinforced in 2009 by a similar leaders' statement from the APEC countries. Despite these high level commitments, a 2012 study found that across the G20 countries 'reporting of fossil fuel subsidies remains spotty'. This is, in part, because of the lack of three key elements: a commonly agreed definition; a framework for subsidy tracking and reporting; and sanctions for failing to report or under-reporting (Bast, Kretzmann, Krishnaswamy, Romine, & Traci, 2012).

In order to support subsidy reporting, in 2013 the Global Subsidies Initiative (GSI) published options for a voluntary peer-review process within the G20 and elsewhere for discussion at a roundtable event with members of the G20, APEC and Friends of Fossil Fuel Subsidy Reform (Gerasimchuk, 2014). This includes an annexed APEC document *Progress on Rationalizing and Phasing Out Inefficient Fossil Fuel Subsidies: Proposed Voluntary Reporting Mechanism*, which contains a proposed subsidy reporting form to be used as part of the peer review process.

In 2014 a sub-set of G20 and APEC countries have agreed to undertake a peer review of each other's policies (China and the United States in the G20, Peru and New Zealand in APEC). The APEC group is familiar with the process, having undertaken peer reviews in the past on energy efficiency, renewable energy policies and low carbon model towns. These efforts are being coordinated by APEC's Energy Working Group and the U.S. Department of Energy who are in turn coordinating with the similar effort in the G20 via the U.S. Treasury Department. APEC is planning up to ten economy peer reviews over the 2014-18 timeframe, with funding provided for the underdeveloped economies.

### **Friends of Fossil Fuel Subsidy Reform**

The Friends of Fossil Fuel Subsidy Reform was formed in 2010 by several non-G20 countries to encourage the transparent rationalisation and phase-out of inefficient (consumption and production) subsidies. Its membership now comprises eight countries<sup>6</sup>, but it is open to other non-G20 countries interested in promoting the cause of fossil-fuel subsidy reform. The group meets periodically, on occasion with G20 representatives, and is planning to undertake its own peer reviews. The GSI (see below) serves as its secretariat.

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<sup>6</sup> Costa Rica, Denmark, Ethiopia, Finland, New Zealand, Norway, Sweden and Switzerland.

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## **Global Subsidies Initiative (GSI)**

The International Institute for Sustainable Development's Global Subsidies Initiative (GSI) is a programme designed to shine a spotlight on subsidies and the effects they can have on environmental quality, economic development and governance.

Subsidy identification and measurement is one of GSI's focus areas, and the GSI works to improve subsidy estimates by undertaking detailed country surveys of these subsidies for producers, including detailed studies on Canada, Indonesia, Norway and Russia (GSI, 2012). With a focus on both consumer and producer subsidies, the GSI is developing highly detailed inventories for India, Indonesia and Thailand for the Asian Development Bank, and has also published estimates for Malaysia, Bangladesh, India and Nigeria as part of its series of 'Citizens' Guides to Fossil Fuel Subsidies'. The GSI has also developed a number of resources for identifying, measuring and assessing fossil-fuel subsidies, along with summaries of and opportunities for comparison of estimates of subsidies to fossil-fuels, renewable power, nuclear power and biofuels (GSI, 2010). The GSI is also tracking subsidies to renewable energy and biofuels alongside those to fossil fuels through an interactive map (GSI, 2014). Finally, the GSI has an increasing focus on electricity and has been identifying fossil fuel subsidies, and how their removal would affect renewables deployment, in MENA countries in partnership with the International Renewable Energy Agency (IRENA) and the Regional Center for Renewable Energy and Energy Efficiency (RCREEE, a regional organisation in MENA, based in Cairo).

## **Oil Change International (OCI)**

OCI is a research, communication, and advocacy organization focused on exposing the costs of fossil fuels and facilitating the coming transition towards clean energy. OCI manages the Shift the Subsidies database, an interactive tool to track and analyse energy subsidies (including to renewable energy) provided by international, regional and bilateral public financial institutions around the world (Oil Change International, 2014). This also includes subsidies at the national and subnational levels supporting oil, gas and coal development (building on OECD and other data sets).

OCI was one of the leading organisations in a civil-society campaign at the Rio+20 Conference on Sustainable Development in 2012, which called for governments to reach a global agreement on the phase-out of fossil fuel subsidies. This included a statement from 75 NGOs calling for the establishment of an independent international body on fossil-fuel subsidies from a number of organisations (Price of Oil, 2012). One fruit of this collaboration is a joint study by OCI and Overseas Development Institute (ODI) researchers to identify and estimate fossil-fuel exploration subsidies in the G20 countries, to be published in 2014.

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## Forthcoming inventories and resources

### Inter-American Development Bank (IDB)

The IDB supports Latin American and Caribbean economic development, social development and regional integration by providing lending and technical assistance to governments and government agencies. In 2014 the IDB, in conjunction with the World Bank, is commencing work on subsidy estimation through a two-year project to quantify the level of fiscal resources to fossil fuels and electricity in all of its 26 borrowing member countries. Subsidy estimates will be completed using the price gap method, with different approaches used to set benchmark fossil fuel prices (a comparison between retail prices and costs at closest international hubs) and electricity prices (a comparison with levelised generation costs for different technologies and transmission requirements).

### Additional subsidy estimation activities in developed countries

Beyond the activities outlined above, focused on subsidies in emerging markets and developing countries, there are a number of initiatives on subsidy identification and reform in (and from) developed countries, which are important, in part for demonstration purposes.

### European Commission (EC)

The European Commission's Directorate General for Energy is in the process of compiling an inventory (to be published in September 2014) of all types of subsidies in its member states related to the cost of electricity generation. This will include support to renewable energy and to nuclear power, as well as to fossil fuels. The objectives of this study are to identify the levels of spending on various energy sources across the EU, and to develop an accurate picture of the per-kWh costs of generating electricity by different technologies. DG-Energy hopes that the results of the study will inform policy making in the future and improve the effectiveness of investments in electricity generation.

The EC also prepared chapters on the [six non-OECD EU countries](#) (Bulgaria, Cyprus, Latvia, Lithuania, Malta, Romania) as a supplement to the OECD Inventory.

### National Governments

Many national governments have started to produce their own accounts of support to fossil fuels. Canada, for example, has prepared a Study of Federal Support to the Fossil Fuel Sector (Office of the Auditor General of Canada, 2013), France has completed a review of the environmental impacts of energy-related tax concessions (Cour des Comptes, 2013), and in 2013 an inquiry was completed on energy subsidies in the United Kingdom (UK Parliament, 2013). Sweden, Finland and certain German Länder have produced estimates of the scale of environmentally harmful subsidies in their jurisdictions.

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### **Institute for European Environmental Policy (IEEP)**

The IEEP is an independent research organisation that undertakes research and consultancy on the development, implementation and evaluation of environmental and environment-related policies in Europe. Its work in the subsidies space addresses environmentally harmful subsidies (EHS) across all sectors, including water, transport, waste and energy. Their work uses an inventory approach covers subsidies for infrastructure, not just direct production or consumption subsidies. Though not focussed on developing countries, this work develops definitions and tools and methodologies for identifying subsidies and determining whether they are harmful or effective, as well as step-wise approaches to reform.

**Table 1: Comparison of global subsidy identification and estimation initiatives<sup>7</sup>**

Initiative	Primary purpose	Subsidies covered	Types of analysis	Countries	Status	Next steps
<b>APEC</b>	Rationalise and phase out inefficient fossil-fuel subsidies that encourage wasteful consumption.	Fossil fuels; Consumption and production	Identification, estimation and peer review	Peru and New Zealand peer review in 2014	Forthcoming	Expansion to include all APEC countries (TBC)
<b>European Commission</b>	Identify fiscal expenditure on electricity subsidies and impact on energy generation costs.	Electricity (fossil fuels, nuclear, renewables); Consumption and production	Identification and estimation		Forthcoming	EU member states (all high income countries)
<b>G20</b>	Rationalise and phase out inefficient fossil-fuel subsidies that encourage wasteful consumption.	Fossil fuels; Consumption and production	Identification, estimation and peer review	USA and China peer review in 2014	Forthcoming	Expansion to include all G20 countries (TBC)
<b>GIZ</b>	Fuel prices, and efficient fuel taxation policies.	Fuels (gasoline and diesel); Consumption	Retail price analysis	170 countries	Completed ( <a href="#">see link</a> )	
<b>GSI</b>	Improve subsidy estimates	Fossil fuels, Electricity; Consumption and Production	Identification and estimation	Canada, Indonesia, Norway and Russia (producer); India, SE Asia, MENA (consumer subsidies and others)	Completed ( <a href="#">producer subsidies</a> and <a href="#">consumer subsidies</a> )	
<b>IDB</b>	Quantify fiscal resources from domestic budgets to energy and fossil fuels.	Energy; TBD	TBD		Forthcoming	26 borrowing member countries <sup>8</sup>
<b>IEA</b>	Creating long term energy demand and supply projections, understanding energy prices.	Energy; Consumption	Estimation (price-gap analysis)	40 developing countries	Completed ( <a href="#">see link</a> )	Expansion to additional African countries
<b>IMF</b>	Efficient taxation of energy, reducing fiscal costs of subsidy.	Energy; Consumption and production	Estimation (price gap analysis combined with modelling of tax expenditure and cost of climate change)	176 countries	Completed ( <a href="#">see link</a> )	
<b>OECD</b>	Quantitative estimates of support for the production or consumption of fossil fuels in OECD member economies.	Fossil fuels; Consumption and production	Identification and estimation	All 34 OECD members	Completed ( <a href="#">see link</a> )	Expansion to include Brazil, Russia, India, Indonesia, China, and South Africa.
<b>Oil Change International</b>	Energy subsidies from international, regional and bilateral public financial institutions	Energy; Production	Identification and estimation	International financial institutions	Completed ( <a href="#">see link</a> ) Forthcoming (G20)	Subsidies to FF exploration in the G20 (with ODI)

<sup>7</sup> See also Comparison of fossil-fuel subsidy and support estimates. OECD, IEA, IMF and GSI. Available at: <http://www.iisd.org/gsi/comparison-fossil-fuel-subsidy-and-support-estimates>

<sup>8</sup> [www.iadb.org/en/about-us/borrowing-member-countries,6005.html](http://www.iadb.org/en/about-us/borrowing-member-countries,6005.html)

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## 2.2 Country level support to FFSR processes

### Global Subsidies Initiative (GSI)

In addition to activities on subsidy identification and estimation, the GSI works at country level on identifying feasible reform options and processes for delivering reform, and supporting countries with reform. In 2013 the GSI published a guidebook on the process for formulating an effective FFSR strategy (Beaton, Gerasimchuk, Laan, Lang, Vis-Dunbar, & Wooders, 2013). The GSI has also undertaken detailed country-level projects including: advising national governments on how to reduce their fossil-fuel subsidies (such as through impact assessments, stakeholder analysis, and advice on strategic communications), and partnerships with civil society organizations (CSOs) and universities to raise awareness amongst the public (such as through training seminars for CSOs, the publication of guidebooks, and the organization of public debates). Over the last several years, the GSI has been most active in Bangladesh, India, Egypt, Vietnam and Indonesia (GSI, 2014a). The GSI is also managing grants from the Danish government to directly support CSOs to undertake fossil fuel subsidy-related work (research and communications) in India, Indonesia and Vietnam.

The GSI is also working with the Nordic Council of Ministers on a project to better understand the potential carbon reduction benefits from FFSR and explore options for linking reforms to national carbon mitigation measures. The project aims to develop a systematic and generic approach to both mapping potential carbon emissions reductions from FFSR and understanding links to complementary low-carbon energy policies with a partner country.

This work links into wider domestic debates on issues such as options for generating electricity, energy security, jobs creation, and economic growth. As a result the GSI have also published on the economic, environmental and social effects and political economy of subsidy reform. The GSI has also completed extensive research on lessons from reform processes based on experiences across APEC economies and case studies on Brazil, France, Ghana, India, Indonesia, Iran, Malaysia, Poland, Senegal and Sudan (GSI, 2014b).

As the GSI enters its fourth (2015-17) phase it will be focussed on subsidies to fossil fuels alongside those to electricity, biofuels, renewable energy, irrigation, and nuclear energy.

### The World Bank (ESMAP)

The Energy Sector Management Assistance Program (ESMAP) is a global knowledge and technical-assistance programme established in 1983 and administered by the World Bank. Its mission is to assist low- and middle-income countries to increase know-how and institutional capacity to achieve environmentally sustainable energy solutions for poverty reduction and economic growth.

In 2014 ESMAP launched an **Energy Subsidy Reform and Delivery Technical Assistance Facility**. During its initial 3- to 5-year period, this initiative will support up to 15 countries' efforts to design and

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implement subsidy reform programs (including the reform of subsidies to fossil fuels and electricity), in collaboration with key stakeholders including government ministries, think tanks, and civil society organizations (ESMAP, 2014).

Though ESMAP cannot disclose the list of countries that it is currently supporting, this initiative is based on country demand, and the facility offers financing for comprehensive technical assistance on issues related to subsidy reform, including:

- Analysis of the poverty, social, fiscal, macroeconomic, political economy, and climate change aspects of subsidy reform;
- Assessment of distributional impacts of subsidies at the household and macroeconomic levels;
- Support for policy dialogue, consultations, communications strategies, and consensus building;
- Support for improving the targeting and delivery of subsidies, including through technology-enhanced approaches; and
- Design and implementation of subsidy reform approaches, energy pricing frameworks, transition plans, energy efficiency and renewable energy solutions, and suitable social protection and other mitigation mechanisms

Beyond ESMAP, the World Bank has been involved in subsidy reform efforts in Eastern Europe and Central Asia, linked to support provided to government on balancing fiscal consolidation and energy tariff reform with social assistance demands, and in wider documentation of lessons from reform efforts (Ruggeri Laderchi, Olivier, & Trimble, 2013) (Vagliasindi, 2013).

### **Asian Development Bank (ADB)**

The ADB is a regional development bank established to facilitate the economic development of countries in Asia. The ADB has commissioned the GSI to undertake a comprehensive study through its regional technical assistance programme (RETA) to quantify subsidies, model the impacts of reform and evaluate necessary safety net options in three countries. The study covers India, Indonesia and Thailand and is to be published later in 2014. The aim of this work is to encourage energy efficiency, investment in clean energy, and reduce inequality and the fiscal vulnerability caused by energy subsidies and rising generation costs.

This study covers consumption subsidies for all fossil fuels and electricity, as well as elements of upstream (production) subsidies: coal in India and natural gas for transport in Thailand. The work of ADB includes a 'bottom-up', inventory approach to identify subsidies through public spending and credit support, foregone tax revenue, and losses of state-owned companies. It also uses models to understand the impacts of subsidy phase out including: an input output based model of household and industry sectors; a market allocation model of the energy system; and a CGE model focussed on emissions and the macro economy. Through this work, the ADBs will also seek to identify the best options for protecting the poor in the context of subsidy reform.



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## IEA

In 2014 the IEA is starting a three phased programme to support FFSR in two emerging market countries, through analysis, policy recommendations and facilitating policy dialogue. Though the IEA cannot share details of the countries it has targeted, the work consists of a background study which reviews global best practice, policy recommendations, and international policy dialogue. In one country this work is focussed on electricity subsidies, and in the other it is focussed on consumption subsidies to liquid fuels and transport.

The IEA will make proposals for FFSR based on projections of subsidy values, the technologies available to limit consumptions, approaches for generating public support, and links to social protection programmes. The programme will place a focus on communications, as part of efforts to overcome barriers to reform linked to vested interests and information asymmetries. Following the research phase, in 2015 a series of workshops and exchanges between the countries is planned, with findings to be published in 2016.

## IMF

As part of the IMF's wider activities to support fiscal consolidation, where relevant, it will raise the issue of fossil fuel subsidies as a potential additional fiscal burden. In addition, the IMF has begun to provide technical assistance for FFSR which has been initially focussed on energy price reform in the MENA region. This support is based on direct requests from governments, and includes identification of opportunities to establish automatic price mechanisms that reduce vulnerability to international price fluctuations, and opportunities to depoliticise energy pricing through the introduction of an independent energy regulator. This work is often linked to the expansion of social safety nets with parallel support provided through the World Bank.

In 2013 IMF published a number of case studies on experiences and lessons from reform to petroleum product subsidies and of subsidies to electricity and coal. These covered: Armenia, Brazil, Chile, Ghana, Indonesia, Iran, Kenya, Mauritania, Mexico, Namibia, Niger, Nigeria, Peru, Philippines, Poland, South Africa, Turkey, and Yemen (IMF, 2013b) (IMF, 2013c). Through its research, the IMF has shown the majority of benefits from fossil fuel subsidies accrue to higher income groups (Arze del Granado, Coady, & Gillingham, 2010)

## Chatham House

Chatham House (the familiar name of the Royal Institute of International Affairs) is an independent policy institute based in London. A team of researchers at Chatham House have been working over the past four years on a range of projects to reduce energy intensity in the Gulf Cooperation Council countries. This has included analysis of the cost of energy and water subsidies in the Gulf, the development of targets to promote energy savings, and of options for raising prices alongside efficiency, educational and infrastructure adaptation measures to smooth this transition (Lahn & Stevens, 2011) (Lahn & Preston, 2013) (Lahn, Stevens, & Preston, 2013). In addition, Chatham House researchers

have been undertaking wider analysis on resource valuation (beyond fossil fuels) with case studies on Iran, India, China, Australia, Algeria, and Iraq.

**Table 2: Actors providing in country support for FFSR**

Actor	Countries supported	Timeframe	Next steps
<b>ADB</b>	India, Indonesia, Thailand	Findings to be published in 2014	Additional countries in South and South East where the majority of electricity is derived fossil fuels.
<b>Chatham House</b>	Gulf Cooperation Council countries (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates)	Project completed in 2013	Ongoing work on resource valuation across developed and developing countries
<b>ESMAP and World Bank</b>	Country engagement has already begun in East Asia, Latin America, Eastern Europe, and the Middle East and North Africa (cannot be disclosed)		Investigating options for support in increased number of countries
<b>GSI</b>	India, Indonesia, and Bangladesh	2015-2017	Countries in MENA and additional countries in SE Asia
<b>IEA</b>	Two emerging market countries (cannot be disclosed)	2014-2016	
<b>IMF</b>	MENA region	On-going	

## 2.3 Coordination and learning platforms

There are a number of initiatives which aim to support global learning about FFSR processes and to coordinate and facilitate action in this space, in addition or in parallel to direct support to reform.

**ESMAP's [Energy Subsidy Reform and Delivery Technical Assistance Facility](#)** will support knowledge exchange, encouraging peer learning on FFS identification and estimation and FFSR at the international level. Part of this work will involve collaboration with other organizations that produce important analysis and research on subsidy reforms, such as the IMF, the OECD, the GSI, and the IEA. Conferences and workshops at the global, regional, and country levels will be organized periodically, aiming to foster a dialogue among countries that have undertaken energy subsidy reforms and those that may be considering such reforms.

The **GSI** has a [dedicated website](#) for tracking the progress of the G20 and APEC countries in phasing out inefficient fossil-fuel subsidies over the medium term. It is also convening a meeting of Civil Society organisations (CSOs) on FFSR in the first week of September 2014, supported by the Danish government. The GSI is also working with the Danish government to convene two separate meetings for representatives of both developed and developing countries. One for Ministries of Finance and Economy

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on their role in the subsidy reform process held during the 2014 IMF and WB fall meetings, and a similar meeting for Ministries of Energy, likely in 2015.

The **World Bank** is also providing coordinating support to the current G20 focus on FFSR, including liaising with the other international organisations and undertaking complementary analysis.

The **IMF** is undertaking outreach activities including conferences and meetings with ministers on environment and finance issues, in conjunction with the World Bank Group's annual meetings.

**UNEP, IMF, GIZ and the GSI** held a meeting in Nairobi in April 2014 entitled '[Reforming Fossil Fuel Subsidies for an Inclusive Green Economy](#)'. Sessions focussed on how fiscal policies can address the negative impacts of fossil fuel subsidies and strengthen government spending for sustainable development. Participants included government officials from ministries of finance, energy and environment; international and regional organizations; academic institutions; NGOs and local UN missions. This outreach activity is also linked to UNEP's previous work on energy subsidies (UNEP, 2008) (UNEP, 2003).

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## 3 Funding, delivery channels and entry points for FFSR

### 3.1 Funding to support FFSR

The three main FFSR activities outlined above are being supported by the following programmes and donor countries

- **ESMAP's** Energy Subsidy Reform and Delivery Technical Assistance Facility is currently supported by: the Nordic governments; UK; Germany; France; Canada; Australia and the EC<sup>9</sup>.
- The **GSI's** work on fossil-fuel subsidies includes funding for its current 3 year "GSI Phase 3" programme from Norway, Denmark and Sweden. Previous phases of GSI have also received funding from the governments of New Zealand, Switzerland, the United Kingdom and the EC.
- **GIZ's** work on fuel prices is funded by the German government (BMZ).
- **Chatham's House's** work in the Gulf was supported by the UK Foreign and Commonwealth Office's 'Gulf Prosperity Fund'
- The **IEA's** work on country level reform is funded by Denmark (the Danish Climate Fund) and the EC.

Most of the key intergovernmental organisations are also active in this field, as described above in this report.

- The subsidy estimation work carried out by the **OECD, IMF and IEA** is internally funded through existing contributions from member countries as part of the organisational mandate.
- The **World Bank** provides technical support to the G20 through its own resources.
- The **IDB's** new programme of research is funded by the bank's Climate Change and Sustainability Fund (separate from its core budget).

The organisations that perform contract or project-based work have had a wide diversity of clients beyond the typical donor countries.

- The **GSI** has received project-specific funding from a diverse range of organisations and has included: European Climate Foundation, Nordic Council of Ministers, Greenpeace, Nestlé, OPEC, UNEP, the Swiss National Centre of Competence in Research on Trade (NCCR) and The William and Flora Hewlett Foundation.
- **ESMAP and the World Bank** occasionally provide fee-based services (eg requested by several Gulf States) and also for partners with bilateral agreements (eg GIZ).

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<sup>9</sup> The EC's contributions in FFSR are managed by Denmark

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- The **IEEP** has been commissioned to undertake subsidy reform-related work by the EC, and the governments of France, Flanders, Sweden, Switzerland and the UK

## 3.2 Delivery channels and entry points for FFSR

### Subsidy identification and estimation

The organisations that primarily focus on subsidy calculation and estimation deliver the work through a combination of 'in-house' and commissioned consultants.

- **GIZ, IEA, GSI, IMF** and **OECD** conduct the data collection and analysis themselves. However the OECD's vetting process requires that it seeks feedback and input from its member countries before publishing.
- **APEC's** peer review is delivered in collaboration between the member countries involved in the reviews, and experts from other APEC countries. The process is coordinated by the US Department of Energy.
- The **EC's** work is being delivered by a consortium including Ecofys and KPMG, with input from Member States.
- The **IDB** proposes to conduct its subsidy identification and estimation research in-house, with consultants trained in the region collecting the necessary data.

### Country level support to FFSR (and entry points)

Support for country level reform often involves a number of institutions and collaboration with government and local organisations.

- **ESMAP** works closely with the **IMF** in countries where they both have programmes linked to subsidy reform or energy pricing, and with **GSI** providing support.
- **GSI** also, through core funding, delivers ongoing country work programmes that combining influence and research activities in India, Indonesia and Bangladesh
- The **IEA's** research and policy dialogue is delivered jointly by two regional desks, with a UK-based consultant. The team in-country is seconded by the energy ministries of both governments.
- The **ADB** is delivering its **RETA** project through collaboration between the national offices and a range of support consultancies and organisations, with the **GSI** as the lead consultant coordinating the work of local consultants and research organisations.

A critical issue identified as part of country level reform processes are the 'entry points' that can be used into national dialogues and reform processes, as it often shapes the requirements for local resources and partners. While improving equity or addressing global climate may be

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drivers for engagement by the funders and delivery organisations, they are not often identified as key entry points for FFSR. Though opportunities for engagement are wide-ranging and often country specific, there are some key themes which emerge across different programmes including: fiscal consolidation and reducing current account deficits, reducing vulnerability to commodity price shocks, freeing up resources for social assistance programmes, generating investment in new technologies, access to energy, energy security, efficient resource use (energy and water), and air-pollution.

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## 4 Opportunities for additional support to FFSR

Building on the review of existing activities supporting FFSR detailed above, and based on inputs from interviewees, the review of literature and lessons learned from existing activities, we have identified the following opportunities for additional support to reform processes to and in developing countries.

### 4.1 Subsidy identification and estimation

There is wide agreement that existing subsidies need to be far more transparent if they are to be eliminated. However, there is only limited information on subsidies in most countries to guide decision-making, or to support reallocation of these resources. A number of important initiatives on subsidy identification and estimation have been established and these provide an important foundation for support to FFSR. However, these data sets are based on very different methodologies (see Table 1 in Section 2) and have different strengths and weaknesses. The OECD information is very granular but does not cover all countries, whereas the IMF and IEA data cover a wider set of countries, but their estimates do not include identification of individual policies or forms of support. In order to support FFSR, it would be useful to have the level of detailed information provided by the OECD for all countries, as it covers support to coal, oil, gas and fossil fuel based energy, and to both consumption and production. It is also notable that robust and consistent sets of energy prices by fuel and consumer are not widely available outside OECD countries.

There is also the potential to make a link between subsidy identification and impact on GHG emissions at the national level, to complement the work that has been undertaken at the global level by the IEA and OECD. This information could reinforce the use of additional climate finance for FFSR.

### 4.2 Country level support for FFSR

The majority of country level support for FFSR is driven by specific requests from national governments to international institutions, notably ESMAP (WB), but also including the IMF, GSI, ADB, and IEA.

Increased demand for support for FFSR will require greater transparency and granularity in subsidy information coupled with increased levels of public outreach, and engagement of key stakeholders (internal and external to government). Public engagement is particularly important to initiate and sustain processes of reform, where governments will be concerned with the possibility of push back from the wider public and those with vested interests. Many governments have expressed interest in undertaking FFSR, however are held back by the complexity of the process, the difficulty of engaging across different ministries and areas of influence, and likely unpopularity amongst parts of the population and business communities.

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There is a need to stimulate informed discussion around existing subsidies and their impacts. Activities to increase public engagement can be complemented with links to international institutions (including those listed above) that already have strong relationships, contacts, and networks with those in government, and with key stakeholders (trade unions, consumer associations, and religious groups). Such engagement at national level can come through a wide range of entry points, which again will be linked to the particularities of a given country: cultural, institutional and political. This may mean a focus on efficient resource use, energy and resource pricing, or energy sector reform, or an explicit focus on FFSR.

Once there is appetite from governments and key stakeholders for FFSR, proposed reform packages can be developed which include a broad range of options, tools and services that countries can select from according to their needs and opportunities for reform. A 'tool-kit' approach might allow country engagement on certain issues (such as modelling poverty impacts, or support developing public awareness campaigns), which can build partnerships and further demand for which additional tools can be requested. Such a tool-kit for reform can build on local and international research to identify and estimate subsidies, and on the lesson learning from previous experiences of reform, as outlined below. All initiatives are best supported by organisations with presence and history in countries, in conjunction with local partners.

### 4.3 Coordination and learning platforms

Current coordination and learning activities are limited, with no central 'home' for existing subsidy inventories, lessons and case studies of FFSR, and wider academic literature on the subject. In addition, a number of existing resources require subscription to academic journals or payment of a fee<sup>10</sup> which may put them out of reach to key stakeholders, particularly those outside of government and the private sector. Much more could be done to clearly communicate existing subsidy data and lessons of reform, in a manner that is granular, free and easily accessible.

In addition, a number of interviewees expressed that the case studies currently available do not provide the level of information or detail that policy makers require, and that additional support could be provided to collection of more detailed information on experiences of reform (both positive and negative). This would support the development of FFSR 'tool-kits', ensuring that the building-blocks of a reform process that are relevant to a particular group or government are easily identifiable. This would allow interested stakeholders to envisage the process of reform in their own circumstances, as well as demonstrate to others the benefits of undertaking reform.

A platform could be developed to undertake detailed case study research and tool-kit development that could also support dissemination of information and facilitation of collaboration and exchange of experiences. This would support significant capacity development in FFSR which is vitally needed across governments, advocacy and research organizations and international institutions that are all working to provide support and

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<sup>10</sup> For example IMF, 2013a, and the IEA's [World Energy Outlook](#).



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undertake FFSR. At the moment there is no such platform for sharing best practice, although the existing links between international institutions working in this space (OECD, IMF, IEA, GSI and WB-ESMAP), the peer review processes of the G20 and APEC, and the forthcoming CSO meeting on FFSR in London, could be linked as a foundation for such an initiative.

Finally, with a focus on mitigation of climate change, additional research could also be supported through this international platform, including on issues such as the role of fossil-fuel subsidies as a barrier to trade and investment in energy efficient and clean-energy technologies. Also, as a number of countries provide subsidies to fossil fuels alongside parallel incentives for clean energy, support could be provided to understand the impact of the 'policy bundle' or 'package' associated with energy taxation. Elements of this research are currently being initiated by the IEA and IMF, but could be undertaken and communicated more broadly.

## 4.4 Resources for FFSR

Climate finance committed under the UNFCCC can be a resource to support subsidy tracking, reporting and phase-out. Of course subsidy phase-out can also free-up public resources that can be reinvested into activities including climate finance. Such finance commitments can help to build transparency around existing subsidies by supporting subsidy assessments, tracking and reporting, and the completion of a diagnostic before funds are disbursed to projects and programmes through bilateral or multilateral channels, including the private-sector window of the Green Climate Fund (GCF). Given the multiple climate benefits of phasing out fossil fuel and other climate incompatible subsidies, the process of subsidy reform in developing countries could also be supported with climate finance

A number of International Financial Institutions (IFIs) and Export Credit Agencies currently provide support to fossil fuel projects in developing countries, while domestic subsidies to consumers in developing countries dwarf the Overseas Development Assistance and climate finance those countries receive (Whitley, 2013b). There is a good opportunity here for international assistance to both shift away from subsidising fossil-fuels and instead help developing countries to phase out their fossil fuel subsidies.

Broader international support from donors, IFIs, NGOs and foundations will also be essential to assist developing countries in their development of social protection measures to ensure that the poorest are protected from the impacts of rising energy prices as a result of subsidy phase-out.

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## 5 Conclusions and recommendations

The aim of this research was to provide a review of the organisations and governments involved in supporting other countries to reform their fossil fuel subsidies and the approaches being undertaken. It should allow development partners considering further work in this area to identify which actors are working in the area of FFSR, what in-country advice and technical assistance is being proposed, planned, and undertaken, and finally to identify areas for strategic involvement, including through the use of climate finance.

To this aim, the following recommendations are proposed to those considering future work in this space:

- Build on existing skills, expertise and networks - across the three types of FFSR interventions: identification and estimation, country level support, and coordination. Support coordination and collaboration through organisations that are already active and well-connected already working on FFSR.
- Improve transparency and granularity of information on specific fossil-fuel subsidies at the national and sub-national level, based on consistent (or clearly comparable) international methodologies, including volumes of finance, sources, intermediaries and recipients.
- Increase demand at country level for FFSR efforts by engaging the public and key influencers (at both the international and national level) to raise the profile of the triple-win of FFSR (social, economic and environmental), and of specific opportunities for FFSR.
- Build on lessons from previous reform processes (as well-documented by GSI, IMF and WB) to create tool-kits for reform that can be tailored and applied to specific national and sub-national contexts and key entry points, including broader energy sector reform processes. Focus on local expertise, research, and advocacy networks, while linking to opportunities for cross cutting activities and lesson learning at the international level. Include a focus on the key elements of impact analysis, communications and political and economic influences over decision making. Use climate finance and other international finance flows to support FFSR in developing countries as part to support targets and objectives set through: UNFCCC, G20, APEC, SE4All, the Millennium Development Goals.

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## Annex 1: Interviewees

Organisation	Contact
<b>APEC</b>	Dr. Phyllis Yoshida
<b>Asian Development Bank (ADB)</b>	Shika Jha
<b>Chatham House</b>	Glada Lahn
<b>Denmark</b> (Ministry of Foreign Affairs)	Jakob Rogild Jakobsen
<b>Energy Sector Management Assistance Program (ESMAP)</b>	Sameer Shulka
<b>European Commission</b> (DG Energy)	Balázs Józsa
<b>GIZ</b>	Armin Wagner
<b>Global Subsidies Initiative</b>	Peter Wooders
<b>Institute of European Environmental Policy (IEEP)</b>	Sirini Withana
<b>International Energy Agency (IEA)</b>	Amos Bromhead
	Florian Kitt
<b>International Monetary Fund (IMF)</b>	Ian Parry
<b>Inter-American Development Bank</b>	Hilen Meirovich
	Roger Mina Carbonero
	Jennifer Doherty-Bigara
<b>OECD</b>	Ronald Steenblik
<b>The World Bank</b>	Caterina Ruggeri Laderchi