



Time to change the game

Fossil fuel subsidies and climate



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November 2013

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Acknowledgements

The author is grateful for contributions from James Docherty, Kevin Watkins and Smita Nakhooda of ODI, along with support and advice from Tom Mitchell, Jodie Keane, Sheila Page, Will McFarland and Aidy Halimanjaya of ODI, and Ronald Steenblik of the OECD.

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Abbreviations

APEC	Asia-Pacific Economic Cooperation
BFI	Bilateral financial institution
CCD	Climate-compatible development
CEE-CIS	Central and Eastern Europe and the Commonwealth of Independent States
ECA	Export credit agency
E. D. Asia	Emerging and developing Asia
GHG	Greenhouse gas
GSI	Global Subsidies Initiative
IEA	International Energy Agency
IFI	International financial institution
IMF	International Monetary Fund
LAC	Latin America and the Caribbean
LPG	Liquid Petroleum Gas
MENA	Middle East and North Africa
OECD	Organisation for Economic Co-operation and Development
OPEC	Organization of the Petroleum Exporting Countries
PDS	Public Distribution System
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
VAT	Value added tax
WTO	World Trade Organization

Executive summary

Fossil fuel subsidies undermine international efforts to avert dangerous climate change and represent a drain on national budgets. They also fail in one of their core objectives: to benefit the poorest. Phasing out fossil fuel subsidies would create a win-win scenario. It would eliminate the perverse incentives that drive up carbon emissions, create price signals for investment in a low-carbon transition and reduce pressure on public finances.

This report documents the scale of fossil fuel subsidies and sets out a practical agenda for their elimination in the context of the global goal of tackling climate change. It spells out the real costs of fossil fuel subsidies within the top developed-country emitters (the E11ⁱ), the G20, and more broadly across developing countries, and outlines ways to achieve their global phase-out by 2025.

Estimates of the level of subsidies vary. According to the latest figures from the International Energy Agency (IEA), subsidies to fossil fuel producers totalled \$523 billion in 2011 (IEA, 2012a). These represent one element in an overall envelope of government finance totalling \$1 trillion to exploit the world's natural resources (Dobbs et al., 2011). They are part of a wider system that obstructs efforts to halt climate change. If governments are to keep their promise to avoid dangerous climate change by holding global warming to the 2-degree commitment, they need to make carbon emissions progressively more costly through a clear and explicit price on emissions. There is, as yet, no global carbon market, but in the European Union Emissions Trading System (EU ETS), governments have allowed the price of emissions to drop to less than \$7 per tonne.

If their aim is to avoid dangerous climate change, governments are shooting themselves in both feet. They are subsidising the very activities that are pushing the world towards dangerous climate change, and creating barriers to investment in low-carbon development and subsidy incentives that encourage investment in carbon-intensive energy. Coal, the most carbon-intensive fuel of all, is taxed less than any other source of energy and is, in some countries, actively subsidised (OECD, 2013a). For every \$1 spent to support renewable energy, another \$6 are spent on fossil fuel subsidies (IEA, 2013).

Subsidies in OECD countries

The Organisation for Economic Co-operation and Development (OECD) estimates that its members spend \$55-90 billion a year through a range of support to fossil fuels (OECD, 2012). Using this dataset we estimate that the top 11 rich-country emitters (E11) spent \$74 billion on subsidies in 2011, with the highest level of subsidies in Russia, the United States, Australia, Germany and the United Kingdom. In effect, each of the 11.6 billion tonnes of carbon emitted from the E11 countries in 2010 came with an average subsidy of \$7 a tonne – around \$112 for every adult in the E11.

These subsidies take different forms, including:

- Germany: financial assistance of €1.9 billion in 2011 to the hard coal sector
- United States: \$1 billion fuel tax exemption for farmers, \$1 billion for the strategic petroleum reserve, and \$0.5 billion for fossil energy research and development in 2011
- United Kingdom: tax concessions of £280 million in 2011 for oil and gas production.

In addition, these subsidies outweigh the support provided to fast-start climate finance by a ratio of 7:1. It is clear, therefore, that eliminating rich-country fossil fuel subsidies would enable a low-carbon transition while unlocking new opportunities for energy cooperation.

Subsidies in emerging markets

Many emerging markets also spend heavily on fossil fuel subsidies, particularly those in the Middle East and North Africa. Governments often

i E11 = Australia, Canada, France, Germany, Japan, Italy, Poland, Russia, Spain, United Kingdom and United States.

try to justify this by citing their industrial policy and poverty reduction goals.

However, fossil fuel subsidies inhibit the development of efficient and low-carbon economies, while the benefits of subsidies largely bypass the poor. According to the International Monetary Fund (IMF), it is quite typical for the poorest 20% of households to receive less than 7% of the benefits generated by fossil fuel subsidies (Arze del Granado et al., 2010). Meanwhile, several countries, including Egypt, Indonesia, Pakistan and Venezuela, spend at least twice as much on fossil fuel subsidies as on public health. While subsidy phase-out demands careful design and implementation, several countries have demonstrated that bold action is possible, with gains for both budget stability and equity in public spending (Vagliasindi, 2012).

Subsidies through development cooperation

Domestic subsidies are not the only problem. International financial institutions (IFIs) also support carbon-intensive energy systems. Over 75% of energy-project support from IFIs to 12 of the top developing-country emittersⁱⁱ went to fossil fuel projects. There has been no significant shift in this trend: in the last financial year alone (2012-13), the World Bank Group increased its lending for fossil fuel projects to \$2.7 billion, including continued lending for oil and gas exploration (Oil Change International, 2013).

Multilateral action to phase out fossil fuel subsidies

Global action to cut fossil fuel subsidies is long overdue. Collectively, the G20 accounted for 78% of global carbon emissions from fuel combustion in 2010. It has already agreed in principle to phase out fossil fuel subsidies. Now is the time to translate principle into practice by setting clear and ambitious goals and timelines for action. That ambition should extend to the elimination of all G20 fossil fuel subsidies by 2020, with rich-country members making a ‘down payment’ commitment to phase out all subsidies to coal and to oil and gas exploration by 2015.

Delivering on this ambition will require early practical measures. It is a matter of concern

that there is no agreed definition of a fossil fuel subsidy – and you can’t reach an agreement to cut what you can’t measure. The G20 governments could buttress an ambitious agreement to end fossil fuel subsidies by backing the creation of an international inventory of fossil fuel support, building on the work of the OECD, IEA and IMF. In the same way that the international community developed an agreement to cut agricultural subsidies based on shared definitions, governments need common approaches for estimating fossil fuel subsidies. International cooperation will also be needed to protect the poorest from rising energy prices in developing countries while subsidies are phased out, and to facilitate data collection, sharing and analysis on subsidies and investment in climate-relevant sectors.

Climate change negotiations provide an early opportunity to start the drive towards eliminating fossil fuel subsidies. Currently the role of subsidies in contributing to dangerous climate change is not acknowledged in the United Nations Framework Convention on Climate Change (UNFCCC). As governments meet this month in Warsaw for the Conference of Parties (CoP) talks, the G20 countries could agree a timeline for fossil fuel subsidy phase-out. Aside from the immediate benefits of reduced carbon emissions, early action on subsidies could boost prospects for a wider climate deal at the key 2015 Climate Change Summit in Paris.

SUMMARY OF ACTIONS ENVISAGED IN THIS REPORT

That G20 countries use the Warsaw CoP meeting to agree a broad timeline for action

That G20 governments call on technical agencies to agree a common definition of fossil fuel subsidies

That G20 governments commit to phasing out all fossil fuel subsidies by 2020, with early action by rich-country members on subsidies to coal and to oil and gas exploration by 2015

That governments and donors work together to ensure that measures are put in place to protect vulnerable groups from the impact of subsidy removal

ⁱⁱ Algeria, Brazil, Egypt, India, Indonesia, Kazakhstan, Nigeria, Saudi Arabia, South Africa, Thailand, Uzbekistan and Venezuela (based on 2011 emissions).

1. Fossil fuel subsidies need to be higher up the climate agenda

1.1 The climate impact of subsidies

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,¹ and that many countries commit 5% or more of their GDP to energy subsidies (Dobbs et al., 2011). These massive figures may be under-estimates, however, as global fossil fuel subsidies alone were estimated to be \$523 billion in 2011 (IEA, 2012).

On top of their social and economic impact, fossil fuel subsidies have a significant impact on our climate. While many of the issues surrounding subsidies are enormously complex, one thing is relatively clear: subsidies create incentives to use fossil fuels, and disincentives to use resources efficiently and to invest in renewable energy. While fossil fuel subsidies create profits for industry and keep consumer costs low, they are unequivocally bad for the planet.

As a result, the International Energy Agency (IEA) pinpoints phasing out fossil fuel subsidies as one of four policies to keep the world on course for the 2-degree global warming target at no net economic cost (IEA, 2013).² The IEA has

estimated that even a partial phase-out by 2020 would reduce greenhouse gas (GHG) emissions by 360 million tonnes, which equates to 12% of the reduction in GHGs needed to hold temperature rise to 2 degrees.

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).

The crucial role of subsidy removal in driving investment toward climate-compatible development (CCD) is not acknowledged in the United Nations Framework Convention on Climate Change (UNFCCC) at present, or in any discussion of instruments to mobilise private climate finance (Whitley, 2013). However, subsidy phase-out will be essential to enable the scale of investment required for the transition to low-carbon economies.

1. Based on data from the Organisation for Economic Co-operation and Development (OECD), International Energy Agency (IEA), United Nations Environment Programme (UNEP), and the Global Water Institute.

2. The three other policies are: adopting specific energy efficiency measures (49% of the emissions savings), limiting the construction and use of the least efficient coal-fired power plants (21%), and minimising methane emissions from upstream oil and gas production (18%).

1.2 Subsidies that send investors the wrong signals

While governments have pledged to avoid dangerous climate change, their approach to fossil fuel support is taking economies in the other direction. Instead of raising the price of carbon emissions, they are subsidising firms to over-produce and consumers to over-use carbon-intensive fuels.

In a world committed to climate-compatible development (CCD) all emissions would carry a cost. However, only 8% of global CO₂ emissions are today subject to a carbon price through trading schemes and taxes (IEA, 2013), and carbon prices have fallen sharply. In 2008, carbon credits from developing countries were valued at €20 per tonne. But as a result of the financial crisis, low caps in the emission trading scheme (leading to a surplus of allowances), and the failure to reach a new international agreement in 2009, the carbon price from projects in developing countries has fallen to below €1 per tonne (Economist, 2013; World Bank, 2013).

Even though the price for carbon in the international markets was never high or consistent enough to kick-start a low-carbon transition on a major scale, it was starting to send a signal. Between 2003 and 2013, the UNFCCC steered significant investment at a global scale through the carbon-trading mechanisms of the Kyoto Protocol. During that period, the UN-led portion of the market attracted investment of over \$215 billion to more than 70,000 emission-reduction projects in developing countries (UNFCCC, 2013).

Today, however, investors are being sent the wrong signals on two fronts as carbon prices decline and fossil fuel subsidies increase. At present, 15% of emissions-generating activities receive an incentive of \$110 per tonne through a wide range of fossil fuel subsidies; with only 8% of emissions subject to a carbon price (IEA, 2013).

In the absence of a robust carbon price, there is widespread acceptance that climate finance (public and private) is needed to help developing countries achieve climate-compatible development. While estimates of the scale of climate finance that is needed vary substantially, ranging from \$0.6 to \$1.5 trillion per year (Nakhooda, 2012; Montes, 2012), fossil fuel subsidies far outstrip current and planned climate finance pledges. They are 5-10 times higher than the prospective annual flows under the UNFCCC agreements (\$100 billion per year), and 3-5 times higher than estimates of the current global climate-finance flows in FY 2010/11 of \$364 billion, of which two-thirds came from the private sector (Buchner et al., 2012).

By acting as a direct barrier to private investment in energy efficiency and clean energy, fossil fuel subsidies are a significant obstacle to the mobilisation of climate finance (Whitley, 2013).

At a global scale, today's fossil fuel subsidies dwarf support for renewables. The IEA has estimated that for every \$1 of support for renewables in 2011, \$6 was spent on fossil fuel subsidies (IEA, 2012). This maintains the status quo, with global fossil fuel investment³ in 2012 three times higher than investment in renewable energy⁴ (IEA, 2012; Frankfurt School-UNEP Collaborating Centre, 2013).

The Organisation for Economic Co-operation and Development (OECD) estimates that its members spend \$55-90 billion a year through a range of support to fossil fuels (OECD, 2012). Using this dataset we estimate that the top 11 rich-country emitters (E11) spent \$74 billion on subsidies in 2011, with the highest level of subsidies in Russia, the United States, Australia, Germany and the United Kingdom (see Figure 1).⁵ In effect, each of the 11.6 billion tonnes of carbon emitted from the E11 countries comes with an average subsidy of \$7 a tonne – around \$112 for every adult in the E11.⁶

3. Fossil fuel investment (gross generation capacity, oil and gas upstream and coal mining) was \$897 billion in 2012.

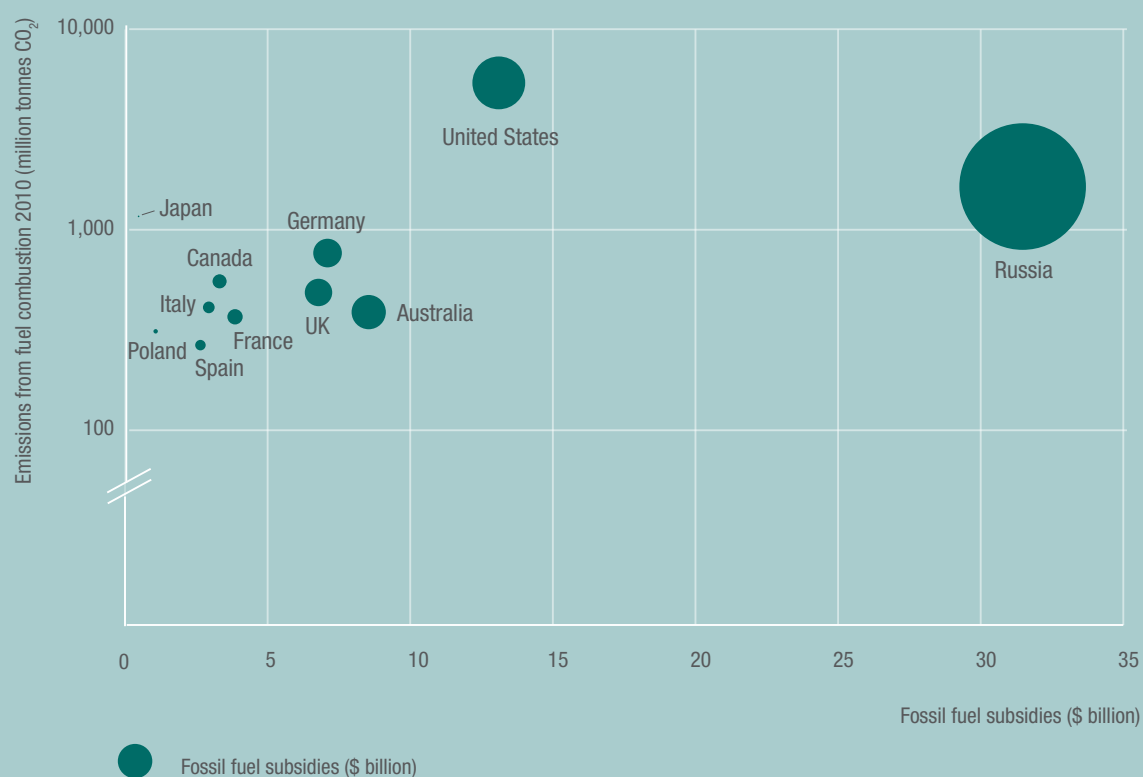
4. Investment in gross renewable capacity was \$260 billion in 2012.

5. E11 = Australia, Canada, France, Germany, Japan, Italy, Poland, Russia, Spain, United Kingdom and United States.

6. E11 adult population is 663 million (CIA, 2011).

Figure 1: Fossil fuel subsidies and emissions in the E11

SOURCES: OECD (2012), GSI (2012), IEA (2012B), IEA (2012C)



These subsidies take different forms, including:

- Germany: financial assistance of €1.9 billion in 2011 to the un-economic hard coal sector
- the United States: \$1 billion fuel tax exemption for farmers, \$1 billion for the strategic petroleum reserve, and \$0.5 billion for fossil energy research and development in 2011
- the United Kingdom: tax concessions of £280 million in 2011 for oil and gas production.

In addition, these subsidies outweigh the support provided to fast-start climate finance⁷ by a ratio of 7:1. It is clear, therefore, that eliminating rich-country fossil fuel subsidies would enable a low-carbon transition while unlocking new opportunities for energy cooperation.

7. During the UNFCCC conference in Copenhagen in 2009 developed countries pledged to provide new and additional resources, approaching \$30 billion for the period 2010-2012 and with balanced allocation between mitigation and adaptation. This collective commitment has come to be known as 'fast-start finance' (UNFCCC, 2013).

8. Data on Russian fossil fuel subsidies compiled using information from IEA (\$16.9 billion natural gas consumption subsidy – 2010) and GSI (\$14.4 billion upstream oil and gas subsidies – 2010) (IEA, 2012b, GSI, 2012).

2. Fossil fuel subsidies: information gap

There is widespread acknowledgement that public finance is needed to support climate-compatible development (CCD), much of which will be to enable greater investment in CCD by the private sector. The primary justification for this role for public finance is the failure of most private actors to account for social and ecological externalities (including the failure to price GHG emissions) (World Bank, 2012).

Though the failure to price emissions is particular to certain climate relevant investments, discussions in the climate change sphere create the perception that there is a particular problem of ‘overcoming barriers to private climate finance’. This differs to the discourse on industrial policy⁹ where there is a more general acceptance that the public sector must play a key role across all sectors in supporting private actors, and that intervention is justified to ensure socially efficient outcomes in the common case of market failures, market distortions, or where markets are incomplete (Pack and Saggi, 2006).

This reinforces the perception that there are higher costs and risks to investment in CCD than in other parts of the economy, or in high-carbon investments, and that tools to mobilise private climate finance must be innovative (and have not been undertaken in the past). In reality, many of these tools are subsidies that are often applied to other sectors of the economy (Whitley, 2013). Worldwide, a significant portion of the private sector depends in some way on support, interventions or subsidies from the public sector.

For non-experts, language can create one of the first and biggest barriers to understanding and unpicking ‘industrial policies’ and ‘subsidies’. This is often the

result of the negative associations of these terms, and the potential for legal challenge of subsidies within the World Trade Organization (WTO), which can drive policy-makers and their advisors to seek euphemisms or synonyms. The Global Subsidies Initiative (GSI) has stated that ‘incentive’ is a common term for ‘subsidy’, but others include: support, aid, assistance, fiscal policy and fiscal instruments (Steenblik, 2008).

For example, the 2012 World Bank report *Inclusive Green Growth* uses the term ‘incentive’ instead of subsidy when discussing the instruments required for such growth (World Bank, 2012). The Bank’s reference to the need for a combination of ‘imposing, incentivising, and informing’ can be seen to parallel the ‘regulatory, economic and information’ instruments of industrial policy outlined in Figure 2. Industrial policy is a more general term than subsidies, and most (but by no means all) subsidies fall under the category of ‘economic instruments’ (Figure 3).

2.1 Definitions

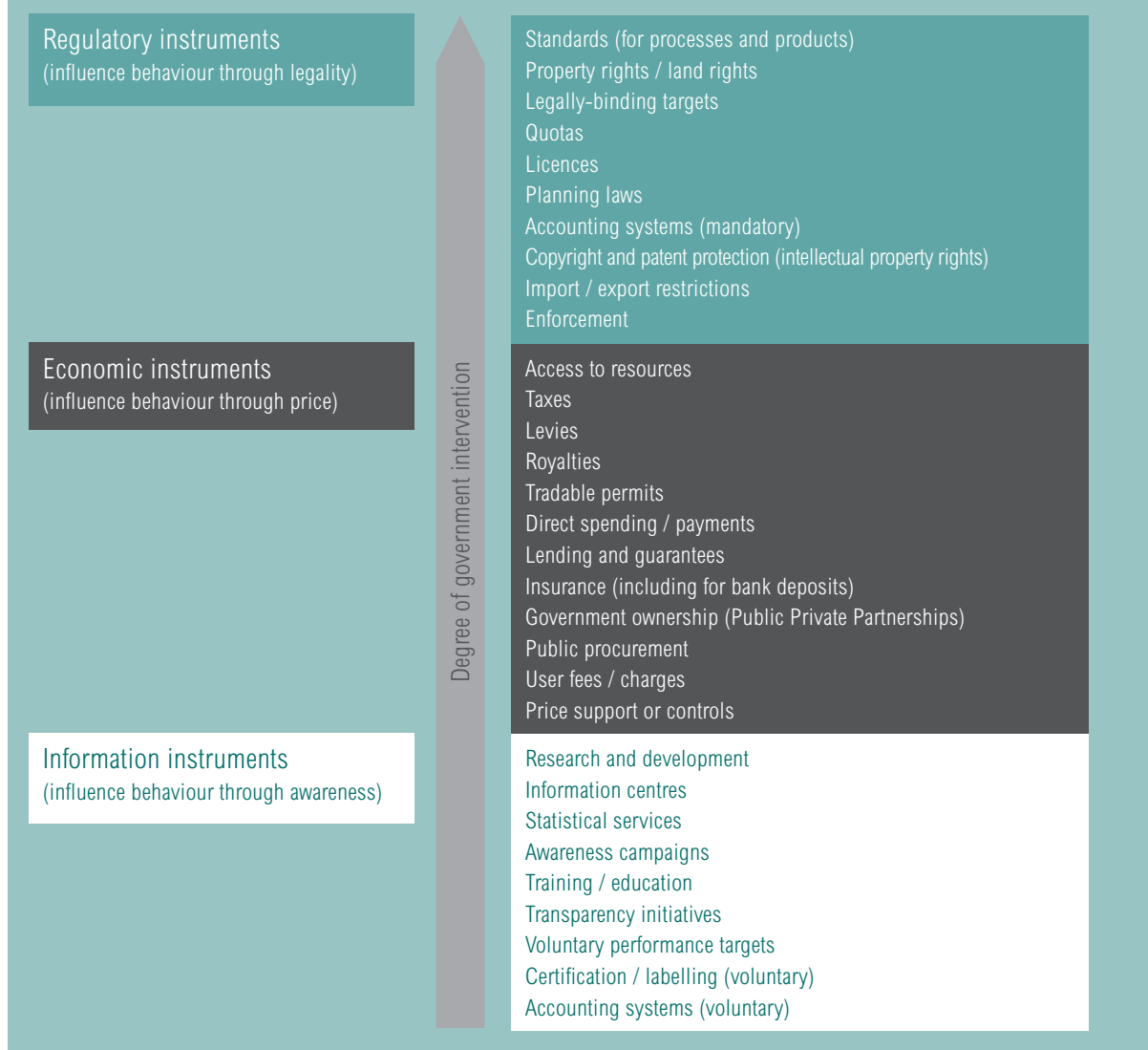
There is no globally agreed definition of what constitutes a subsidy. The WTO, however, takes a broad approach and defines a subsidy as ‘any financial contribution by a government, or agent of a government, that confers a benefit on its recipients’ (WTO, 1994).

The IMF defines energy subsidies (including those for fossil fuels) using two categories: those to consumers and those to producers. One methodology used widely to calculate the level of a subsidy is the price-gap approach. Where

9. Three definitions of industrial policy: (1) Government efforts to alter industrial structure to promote productivity-based growth (World Bank, 1993). (2) Concerted, focused, conscious efforts on the part of government to encourage and promote a specific industry or sector with an array of policy tools (UNCTAD, 1998). (3) Any type of selective intervention or government policy that attempts to alter the structure of production toward sectors that are expected to offer better prospects for economic growth than would occur in the absence of such intervention (Pack and Saggi, 2006).

Figure 2: Instruments of industrial policy

SOURCE: WHITLEY (2012), INFORMED BY GIZ (2012) AND BAST ET AL. (2012).



an energy product is traded internationally, the benchmark for calculating the price gap is that international price (IMF, 2013a).

There are three primary data sets to track support to fossil fuel production and consumption: from the IEA, OECD, and IMF. The OECD and IEA data sets primarily cover different groups of countries¹⁰ (developed and developing respectively), while the IMF data set builds on information from the OECD and IEA and includes the failure to put a price on social and ecological externalities, such as the cost of climate change, within its subsidy estimations.

2.1.1 Consumer subsidies (IEA)

We have the most information about consumer subsidies. Typically, these fossil fuel subsidies lower prices below what they would be in a 'free market' and are used predominantly to lower the prices of fuel for transport, kerosene and gas used in homes, or fuels used by electricity generators and domestic industries (GSI, 2010). The figure cited most widely for fossil fuel subsidies is \$630 billion in 2012, and comes from the IEA data set.¹¹ This is based on the price-gap approach and covers a sub-set of

10. With the exception of Mexico.

11. This figure fluctuates widely, depending on fossil fuel prices. It was \$409 billion in 2010 and \$523 billion in 2011 – although there has been progress in phasing out subsidies.

consumer subsidies for only 42 developing countries (IEA, 2012) (see Table 2 for IEA data on the G20).

2.1.2 Producer subsidies (GSI)

Fossil fuel subsidies for producers¹² are far more opaque than those for consumers and usually take the form of preferential treatment for: 1) selected companies, such as national oil companies; 2) one domestic sector or product; and 3) sectors or products in one country when compared internationally (GSI, 2010). Early research by GSI has found that the most common producer subsidies come in the form of government revenues that are foregone, such as reduced taxes for goods and services, allowances for accelerated depreciation, and reduced royalty payments (GSI, 2010).

While it is difficult to gauge the amount that countries spend to subsidise the production of fossil fuels, there are clearly a number of countries where these subsidies exist. This is particularly true in countries that have large fossil fuel production industries, often supported heavily by governments (if not state-owned entirely). The IEA does not measure production subsidies, but GSI has compiled a series of country-level estimates of oil and gas production subsidies in Russia (\$14.4 billion in 2010), Norway (\$4 billion in 2009), Canada (C\$2.8 billion in 2008), and Indonesia (\$1.8 billion in 2008) (GSI, 2012). As a result of data constraints, estimates for producer subsidies in developing and emerging countries range from between \$80 and \$285 billion annually (Bast et al., 2012).

2.1.3 Combined producer and consumer subsidies (OECD and IMF)

Though their work does not use the term ‘subsidy’, in 2012 the OECD compiled country-level data on ‘budgetary support and tax expenditures to fossil fuels’ for its 34 member countries (OECD, 2012) (see Table 1 for OECD

data available for the G20). This provides an inventory of subsidies to consumption and production across all of the OECD countries.

In 2013, the IMF published fossil fuel subsidy estimates for 172 countries. Instead of splitting their subsidy reporting by consumer and producer subsidies, the IMF report provides estimates on the basis of pre-tax and post-tax subsidies (IMF, 2013a) (see Table 1 for IMF data available for the G20).

1. Price gap

The IMF pre-tax subsidies include:

- consumer subsidies for gasoline, diesel and kerosene (for 172 countries) using the price-gap approach
- consumer natural gas and coal subsidies (for 56 countries) using the price-gap approach
- producer subsidies for coal (for 16 OECD countries).

2. Tax breaks and social and environmental costs

The IMF post-tax subsidies account for:

- the pre-tax subsidies listed above
- tax breaks for fossil fuels such as reduced VAT¹³
- the failure to price (tax) negative externalities, such as the costs of climate change (\$25 per tonne), local pollution, traffic congestion, accidents, and road damage (IMF, 2013a).

It is difficult to analyse subsidies using IMF data 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 definition of ‘subsidy’. 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.¹⁴

12. In most countries (even those with significant levels of fossil fuel production) subsidies directed toward consumers are far higher than those to producers. Indonesia is a typical example, even though it is an oil-producing country. In 2008 consumer subsidies in Indonesia were estimated at \$14 billion, whereas producer subsidies were one-seventh of that level, at \$2 billion. One exception is Russia, where consumer and producer subsidies for fossil fuels were almost equal in 2010, at \$16.9 billion and \$14.4 billion respectively (GSI, 2012; IEA, 2012).

13. Using VAT rates for 150 countries in 2011.

14. The IMF has stated that removing subsidies in advanced economies could lead to a 13% decline in CO₂ emissions and generate positive spillover effects by reducing global energy demand (IMF, 2013a).

Nonetheless, the IMF data highlight that pre-tax fossil fuel subsidies are concentrated in middle-income and lower middle-income countries, both in aggregate and as a percentage of GDP, with the highest pre-tax subsidies in the oil-exporting countries in the Middle East and North Africa (MENA). In contrast countries such as the US, have the highest overall or post-tax subsidies as a result of the provision of energy at less than the standard rate of consumption taxation (VAT) and the failure to incorporate negative externalities into fuel prices, such as air pollution, GHG emissions and road traffic accidents (Figure 3).

2.2 Data

Data gaps present a serious challenge to any attempt to phase out fossil fuel subsidies, with governments unclear about what constitutes a subsidy, how much they are already spending on them, and their socio-economic and climate impacts.

Unable to agree on a definition of ‘inefficient fossil fuel subsidies’, and without a comparable data set across its member countries (see Table 1), the G20 nonetheless committed in 2009 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 2010 by a leaders’ statement from 21 Asia-Pacific Economic Cooperation (APEC) countries, and the establishment of the Friends of Fossil Fuel Subsidy Reform – a group of eight countries¹⁵ that came together to encourage the transparent rationalisation and phase-out of inefficient (consumption and production) subsidies (GSI, 2011).¹⁶

The commitment made by G20 leaders in 2009 was reiterated in 2013 in St. Petersburg, but a 2012 study found that ‘reporting of fossil fuel subsidies remains spotty’ (Bast et al., 2012). This is, in part, because of the lack of three key elements: a commonly agreed definition; a framework for G20 subsidy tracking and reporting; and sanctions for failing to report or under-reporting. Although efforts to address subsidies within the G20 have revived the debate on the definition of an ‘inefficient subsidy’, it has been hard to reach an agreement because subsidies touch directly on issues of government sovereignty, trade competition and poverty alleviation (Jones and Steenblik, 2010). This absence of harmonised and transparent subsidy data across countries inhibits even the very first proposed step of subsidy phase-out: the analysis of the costs and distortions that subsidies impose on the economy.

In addition, GSI research shows that few governments know the full extent of the subsidies they have granted, as many forms of support have never been quantified. The primary sources for expenditure data are government financial statements, government departments’ summary tables on expenditures and national accounts. Where information does exist, it is scattered across different ministries, as well as across regional and local governments, and is rarely available to the public, standardised, validated or accurate. Many forms of subsidies, including tax breaks and tax credits, are not included in official accounts (Steenblik, 2008). These problems are exacerbated in developing countries by poor budget transparency and limited resources for gathering data and estimating subsidies (Jones and Steenblik, 2010).

The resulting gaps in the data collected on fossil fuel subsidies (Table 1) make it difficult, if not impossible, to assess or rationalise them. This is true not only for energy subsidies but also those subsidies directed toward water, land-use, and other resources that have significant implications for CCD.

15. Costa Rica, Denmark, Ethiopia, Finland, New Zealand, Norway, Sweden and Switzerland.

16. Other international commitments to subsidy phase-out include: an EU council decision stipulating the phase out of subsidies for the production of coal from uncompetitive mines by end of 2018; the Europe 2020 strategy calling on Member States ‘to phase out environmentally harmful subsidies (EHS) limiting exceptions to people with social needs’; and the Secure Sustainable Energy goal of the United Nations’ Post-2015 Development Agenda to ‘phase out inefficient fossil fuel subsidies that encourage wasteful consumption’ (G20, 2012; United Nations, 2013).

TABLE 1: SUBSIDY SELF-REPORTING BY THE G20, COMPARED WITH OECD, IEA AND IMF DATA (2011, \$ BILLION)

Countries ⁱ	G20 self-reported inefficient fossil fuel subsidies (G20, 2012)	OECD DATA ⁱⁱ	IEA DATA ⁱⁱⁱ	IMF PRE-TAX DATA ^{iv}	IMF POST-TAX DATA (TOTAL) ^{v, vi}
China	None. Pursuing a policy of adjusting the urban land-use tax relief to fossil fuel producers as appropriate, gradually reducing the preferential tax treatment and phasing out the policy over medium and long term.	forthcoming	19.8	0	257.4
United States	Congress must pass legislation to eliminate 12 preferential tax provisions related to the production of coal, oil, and natural gas.	13.1	n/a	8.8	502.1
India	Decided in June 2010 to allow the market to determine the prices of petrol and diesel. Will maintain subsidies on PDS kerosene and domestic LPG to keep such household fuels affordable, especially for poor and vulnerable consumers.	forthcoming	33.89	25.8	74.8
Russia	None	forthcoming ^{vii}	21.9	20.2	92.8
Japan	None	0.4	n/a	0	46.0
Germany	Agreed to discontinue subsidised coal mining in a socially acceptable manner by the end of 2018.	7.1	n/a	2.7	21.6
South Korea	Completely phased out the stable coal-production subsidy in 2011. Briquette-production subsidy in place (helps low-income families afford traditional cooking fuel); hopes to raise fixed price on briquettes in 2012 to reduce subsidy expenditure.	n/a	0.19	0.2	16.7
Canada	Phasing out over 2011-2015 accelerated capital-cost allowance for investment in oil sands projects. Reducing deduction rates for intangible capital expenses in oil sands to align these with rates applicable in conventional oil and gas sector. Phase-out of Atlantic Investment Tax Credit for investments in oil and gas and mining sectors.	3.3	n/a	21.1	26.4
United Kingdom	None	6.8	n/a	0	10.9
Saudi Arabia	None	n/a	46.2	44.5	83.2
South Africa	None	forthcoming	0.0	<0.1	14.4
Brazil	None – expansion of electricity will reduce need for aid to rural areas.	forthcoming ^{viii}	0.0	0	5.0
Mexico	State-controlled price-setting mechanism was modified so that gasoline, diesel, and LPG prices increase incrementally on a monthly basis at a constant rate, with the goal of the gradual elimination of subsidies.	n/a	15.9	0	27.6
Italy	None. Abolished a scheme (CIP6) that targeted the development of renewable-energy production capacity but inadvertently subsidised non-renewables at facilities where cogeneration capacity was based on fossil fuels. Government has achieved an accelerated phasing-out process for existing contracts with private operators of non-renewable plants.	2.9	n/a	0	7.5

Countries ⁱ	G20 self-reported inefficient fossil fuel subsidies (G20, 2012)	OECD DATA ⁱⁱ	IEA DATA ⁱⁱⁱ	IMF PRE-TAX DATA ^{iv}	IMF POST-TAX DATA (TOTAL) ^{v,vi}
Australia	None	8.5	n/a	38.1	26.5
France	None	3.8	n/a	0	4.7
Indonesia	Has significantly reduced kerosene subsidies with its kerosene-to-LPG conversion programme; will gradually continue the use of an alternative energy and conversion programme from fossil fuel to gas. Has committed to a framework to alleviate all fuel subsidies gradually through the promotion of Pertamina (a market price-based fuel), improving distribution to the targeted subsidy recipients.	n/a	15.7	21.8	39.2
Spain	Public aid is being used to facilitate the gradual closure of uncompetitive coalmines through December 2018.	2.6	n/a	0.4	6.3
Turkey	Restructuring plan for state-owned hard coal mining company (TTK) to minimise the need for monetary transfers to TTK.	1.6	n/a	0.2	7.5
Argentina	Proposed natural-gas pipeline will allow reduction in butane and LPG subsidies.	n/a	5.5	3.4	7.7

i In order of emissions from fossil-fuel combustion (2010)

ii Budgetary support and tax expenditures to fossil fuels (OECD, 2012)

iii Fossil fuel consumption subsidies (IEA, 2012)

iv Pre-tax energy subsidies (excl. electricity) (IMF, 2013a)

v Post-tax energy subsidies (excl. electricity) (IMF, 2013a)

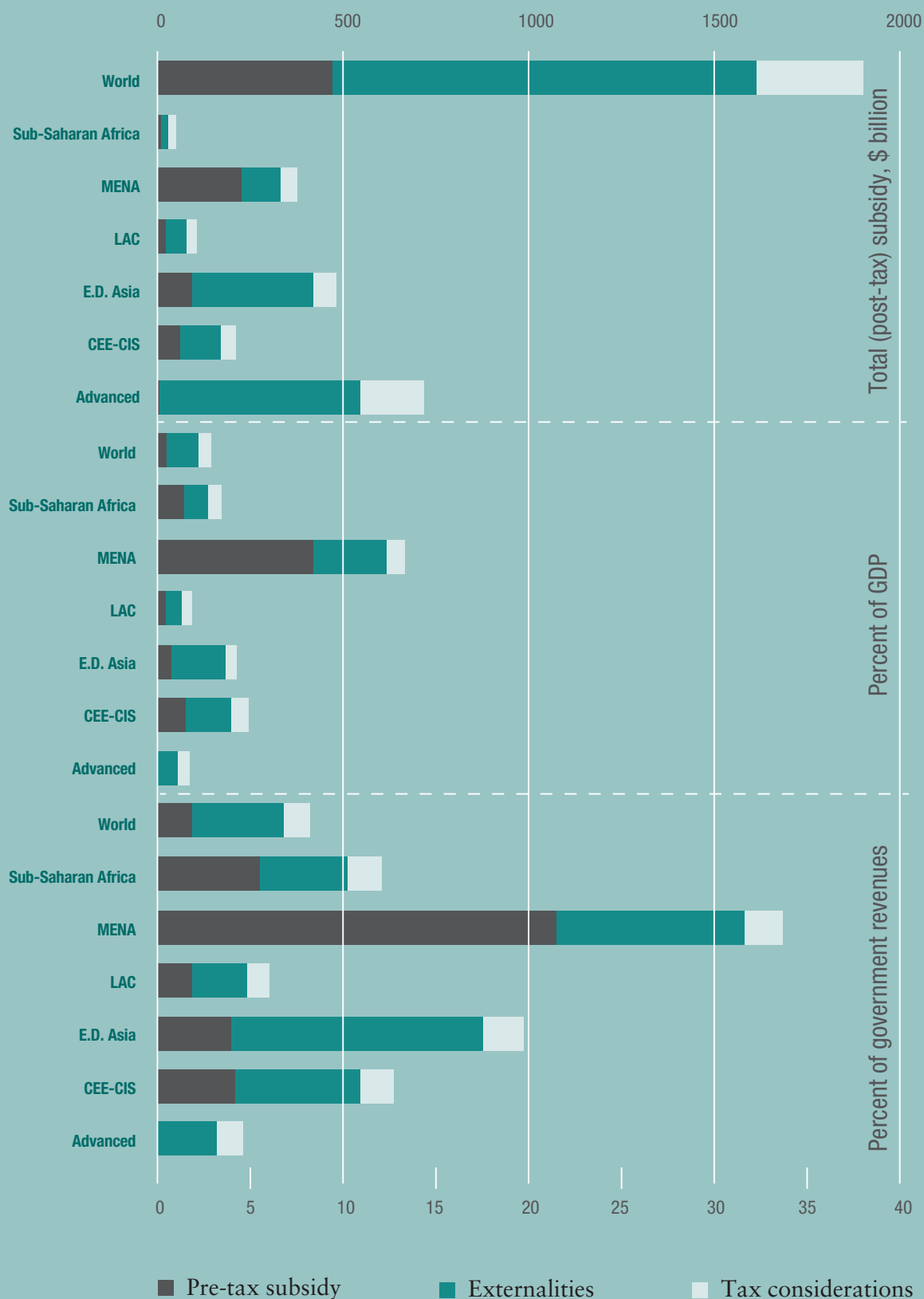
vi Post tax = (pre-tax) + (adjustment to account for inefficient taxation including the mispricing of externalities). The externalities calculation includes reference to climate change (damages of \$25 per tonne of CO₂), local pollution, local congestion and accidents, and road damage.

vii Data on Russian fossil fuel subsidies compiled using information from IEA (\$16.9 billion natural gas consumption subsidy – 2010) and GSI (US\$14.4 billion upstream oil and gas subsidies – 2010) (IEA, 2012b, GSI, 2012).

viii Although Brazil does not currently report any on-budget fossil fuel consumer subsidies under the G20 reporting framework, the government regulates the price at which the country's largest refining and distribution company, Petrobras (which has an effective national monopoly on the production of refined petroleum products, and in which the government holds a majority voting stake) can sell refined petroleum products. For 2011, Petrobras's Refining, Transportation and Marketing division recorded a net loss (after tax) of \$5.73 billion (BRL 9.97 billion) (Petroleo Brasileiro S.A., 2012). The recorded loss for 2011 relates primarily to losses incurred on the import of refined products (Brazil has insufficient domestic refining capacity to meet demand at present), which retailed at an average 8% less than cost (Millard, 2012).

Figure 3: IMF subsidy estimates

SOURCE: IMF (2013)



3. Phasing out subsidies: challenges and opportunities

The reasons for the existence and persistence of fossil fuel subsidies go beyond the absence of basic data and vary across countries and regions. As a result, subsidies need to be understood in the context of a particular political-economy logic. First, governments act to remain in power. Second, once subsidies are in place, interest groups solidify around them and hinder their elimination (Victor, 2009).

Several specific motivations for subsidy provision and persistence have been identified: some explicit, such as social protection and industrial policy; other implicit, driven by special interests.

3.1 Why subsidies exist and persist

- **Transfers to the poor and access to energy.** Consumer subsidies are often justified as a way to help the poorest households or as necessary to provide energy access. However, recent studies show that these subsidies more often benefit the middle and upper classes than the poor in developing countries. An IMF review of subsidies in developing countries found that only 7% of the benefits from fossil fuel subsidy reached the poorest 20% of income groups and that subsidies to gasoline, LPG and diesel are particularly regressive (Figures 4 and 5).
- **National patrimony.** In a number of fossil fuel producing countries, revenue flows from natural resources have been seen as a national patrimony to be shared across the population in the form of subsidies (Commander, 2012). In the 1990s, major oil exporters spent twice as much on subsidising domestic petroleum consumption (as a share of GDP) as countries that did not produce oil (Gupta et al., 2003). For major energy producers, the opportunity costs of these subsidies are less evident than actual budgetary costs because revenues rise and fall with the costs of subsidy, giving little incentive for phase-out (Victor, 2009).
- **Income buffering.** Energy subsidies are often initiated as temporary income buffers. However, in the face of (increasingly common) price shocks and volatility, they have become more permanent and difficult to eliminate (Commander, 2012).
- **Diversifying energy supply.** Governments often seek to increase diversity in energy supply through subsidies to specific energy sources. One example is Thailand's subsidy to gas and diesel with bio-fuel content, which aimed to reduce the country's dependence on fossil fuel imports (Commander, 2012).
- **Special interests.** Particular industries or companies often secure specific benefits from subsidies, such as reduced costs. Governments often use the under-pricing of energy inputs to support production across selected sectors or firms, or to increase the competitiveness of firms that are export-oriented. The benefits of these subsidies are often concentrated among specific actors, while the costs are spread across the general population (Commander, 2012). One example is India, where cheap or free electricity to farmers creates a significant fiscal burden on the country as a whole, but where the farming lobby (which has political influence) has ensured that no government can hold on to power without holding on to these subsidies (Victor, 2009). The influence of those with special interests can be significant. In the US, individuals and political-action

Figure 4: The wealthy benefit most from fossil fuel subsidies in developing countries¹⁷

SOURCE: ARZE DEL GRANADO, COADY, & GILLINGHAM, 2010)

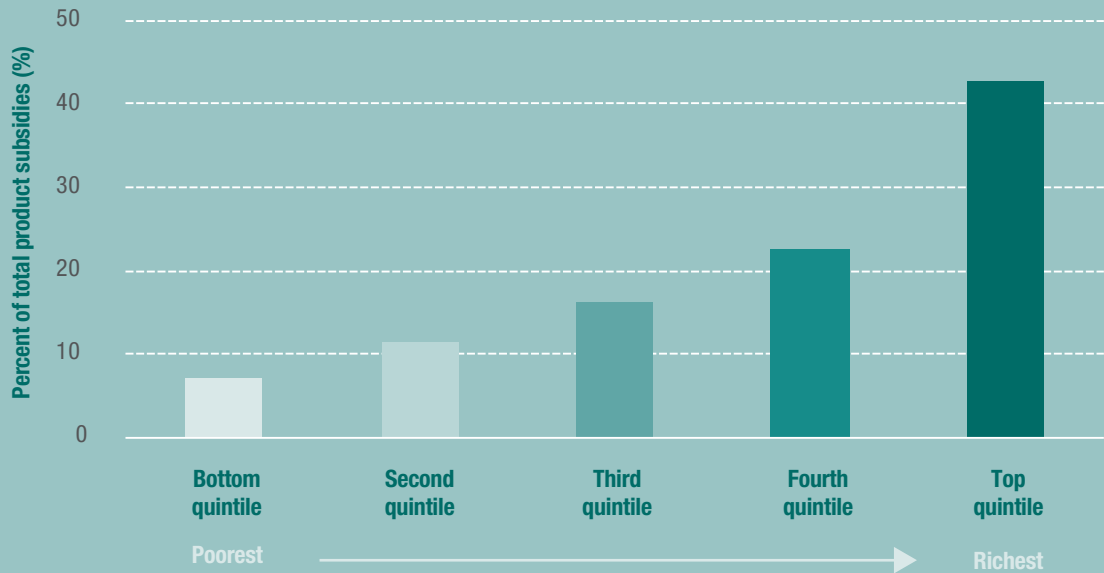
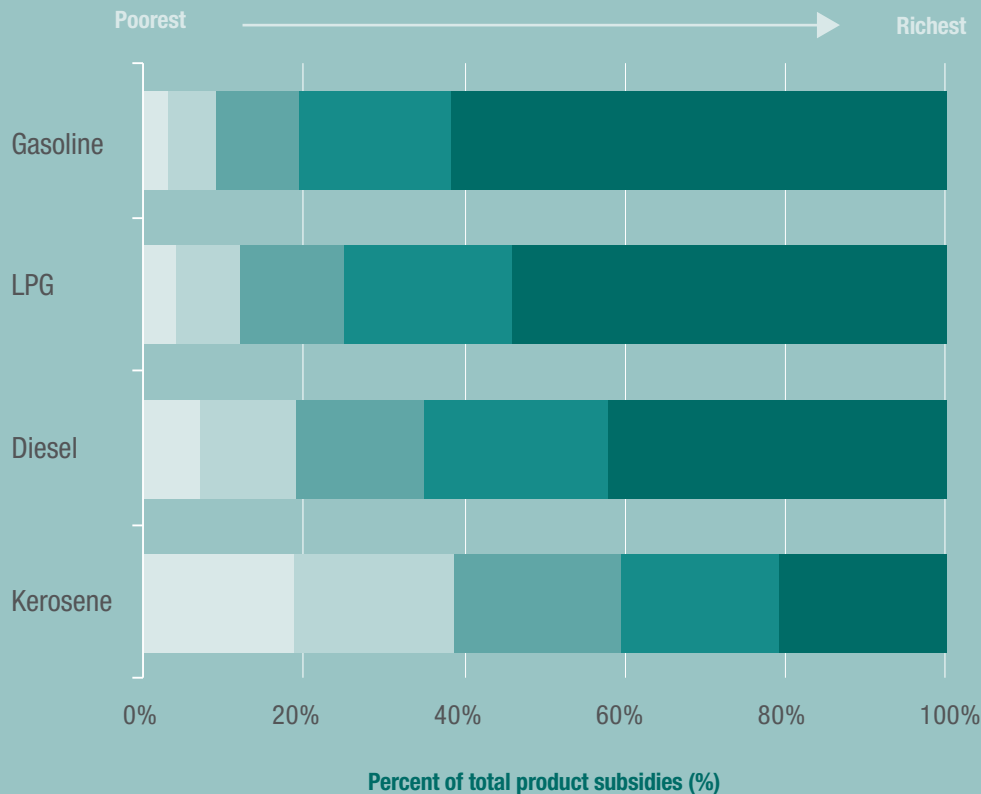


Figure 5: Distribution of petroleum product subsidies by income groups

SOURCE: ARZE DEL GRANADO ET AL. (2010)



17. Based on country studies completed by the World Bank and IMF in 20 developing countries between 2005 and 2009.

committees affiliated with oil and gas companies have donated \$239 million to candidates and parties since the 1990 election (Center for Responsive Politics, 2013).

- **Lack of information – consumer subsidies.** Though citizens are acutely aware of fuel prices, they rarely have complete or accurate information on what they or others receive in terms of subsidies. This lack of transparency can, in turn, affect the political dynamics associated with revising or eliminating a subsidy. Survey and focus group evidence collected in Morocco in 2010, for example, found that few households were even aware of a butane gas subsidy, and those households that did know about it underestimated its scale by a wide margin (Commander, 2012).
- **Lack of information – producer subsidies.** The phase-out of producer subsidies is hampered by a basic lack of information about the extent of support to fossil fuel producers and where this information, if it exists, is held. What's more, the majority of producer subsidies are not clearly identified in standard government budget documents (de Mooij et al., 2012).¹⁸
- **Weak institutions.** Governments sometimes use subsidies because they lack other effective levers and/or institutional capacity to implement policy. In most countries, the price of energy is a simple indicator that is fairly easy for citizens to monitor, and so downstream subsidies are a visible way to deliver benefits in exchange for political support (Victor, 2009).

3.2 Opportunities for subsidy phase-out

Despite the potential virtuous cycles for the climate and other national priorities that could result from the removal of fossil fuel (and other) subsidies, for the reasons outlined above governments are reticent to undertake reform. Subsidy removal can have serious political

KEY ELEMENTS OF ANY PLAN TO PHASE OUT FOSSIL FUEL SUBSIDIES

SOURCES: COMMANDER, 2012; IMF, 2013A; G-20, 2009; BAST ET AL., 2012; BEATON ET AL., 2013

ANALYSIS OF:

- the costs and distortions imposed on the economy by subsidies
- the key attributes of the institutional and political system (how energy-pricing decisions are made, and by whom)
- those interest groups that would be rewarded or exposed to costs and risks as a result of subsidy removal
- the policy objectives of existing subsidies and their outcomes
- the political acceptability of subsidy removal (electoral cycle, level of information available to citizens)

IMPLEMENTATION OF:

- a comprehensive energy-sector reform plan with clear long-term objectives
- transparent and extensive communication and consultation with stakeholders, including information on the size of subsidies and how they affect the government's budget¹⁹
- price increases that are phased in over time
- support for efficiency in state-owned enterprises
- measures to protect the poor through targeted cash or near-cash transfers or, if this option is not feasible, expansion of existing targeted programmes
- international support, including through development finance to facilitate the process of phase-out by providing additional assistance to vulnerable groups

18. A small group of oil producers records fuel subsidies explicitly in their budgets including Indonesia, Iran, Malaysia, Sudan and Yemen (de Mooij et al., 2012).

19. As an example, GSI has published a series of 'Citizen's guides to fossil fuel subsidies' covering Bangladesh, India, Indonesia and Nigeria. These guides are written in non-expert language to increase public understanding of subsidies (GSI, 2013).

repercussions if introduced too quickly, and without sufficient public support. This was demonstrated by recent events in a number of countries including in Nigeria, when the (overnight) withdrawal of fuel subsidies sparked widespread public unrest.

The barriers to reporting on subsidies and to their removal are based on the multiple and often diverging interests of a wide range of stakeholders in both developed and developing countries. These include government officials, industry associations, companies, trade unions, consumers, social and labour political activists, and civil society organisations – all of whom need to be on board if subsidies are to be eliminated. Those pushing for the phase-out of subsidies must therefore harness the support of a wide variety of actors. A number of recommendations have emerged from reviews of the experiences of countries that have embarked on subsidy phase-out.

EXAMPLES OF SUCCESSFUL ENERGY SUBSIDY REFORM (IMF, 2013B) AND (G20, 2012)

South Africa, 1950s

Brazil, early 1990s-2001

Chile, early 1990s

Philippines, 1996

Namibia, 1997 (partial success)

Turkey, 1998

Poland, 1998

Yemen, 2005 and 2010 (partial success)

Indonesia, 2005 and 2008 (partial success)

Peru, 2010 (partial success)

Iran, 2010 (partial success)

India, 2010 (on-going)

Mauritania, 2011 (partial success)

Niger, 2011 (partial success)

Nigeria, 2011-12 (partial success)

Korea, 2011 (on-going)

Canada, 2011 (on-going)

Germany, 2012 (on-going)

Detailed case studies of country-level fossil fuel subsidy reform processes, with lessons from success and failure, can be found in IMF (2013b), Vagliasindi (2012) and UNEP (2003).

4. Aid ignores the true costs of subsidies and supports high-carbon development

The elimination of subsidies has real potential to create virtuous cycles, not only in terms of climate impacts and investment, but also in terms of social and economic benefits. Research and analysis by the OECD has suggested that, from an economic perspective, removing consumer subsidies alone would:

- improve the efficient allocation of resources across economies
- reduce the financial burden on government budgets (through reduced public expenditure and increased tax revenues), and
- allow most countries or regions to record real income gains and GDP benefits as a result of a more efficient allocation of resources across sectors (OECD, 2011).

However, current aid spending appears to ignore the economic and social opportunity costs of fossil fuel subsidies, and aggravates climate impacts through donor provision of support to fossil fuel projects.

4.1 Fiscal burden

Recent high and rising fuel prices have led to the introduction or increase of fossil fuel subsidies across a broad spectrum of regions and political systems. In addition to their climate impacts, these inefficient fiscal regimes are costly for taxpayers. Fossil fuel subsidies are particularly significant as a percentage of GDP in Central Asia and the Middle East (see Figure 6).

They are also significant in India, which imports over 70% of its total fuel needs. Here, maintaining diesel and petrol prices below international prices in 2011 implied a total fuel subsidy bill of around 10% of GDP (Commander, 2012). Comparing fossil fuel subsidies to consumers with the primary balance²⁰ in a number of developing countries shows the intensity of the fiscal pressure created with the goal of maintaining low energy prices (see Figure 7). This pressure has been exacerbated by the global financial crisis, leading to a growing recognition that significant volumes of subsidies (to fossil fuels and other non-renewable resources) are inefficient and encourage wasteful consumption.

4.2 Social burden

Given the budget pressure created by consumer subsidies, one can envision how these resources or support could instead be dedicated more directly to vital development goals, such as improving health services and education. A recent report by the IMF (de Mooij et al., 2012) has stated that ‘fossil fuel subsidies (to consumers) are almost always bad policy, as even apart from the increase in emissions they cause there are generally better ways to help the poor’.

In a number of countries that provide high levels of fossil fuel subsidies to consumers we find that these subsidies are either equivalent to, or significantly exceed, domestic health expenditure (see Figure 8). Some of these same countries are also providing fossil fuel subsidies at levels

20. Primary balance is defined by the OECD as government net borrowing or net lending, excluding interest payments on consolidated government liabilities.

Figure 6: Oil, coal, gas and electricity subsidies as a percentage of GDP

SOURCE: IEA (2012)

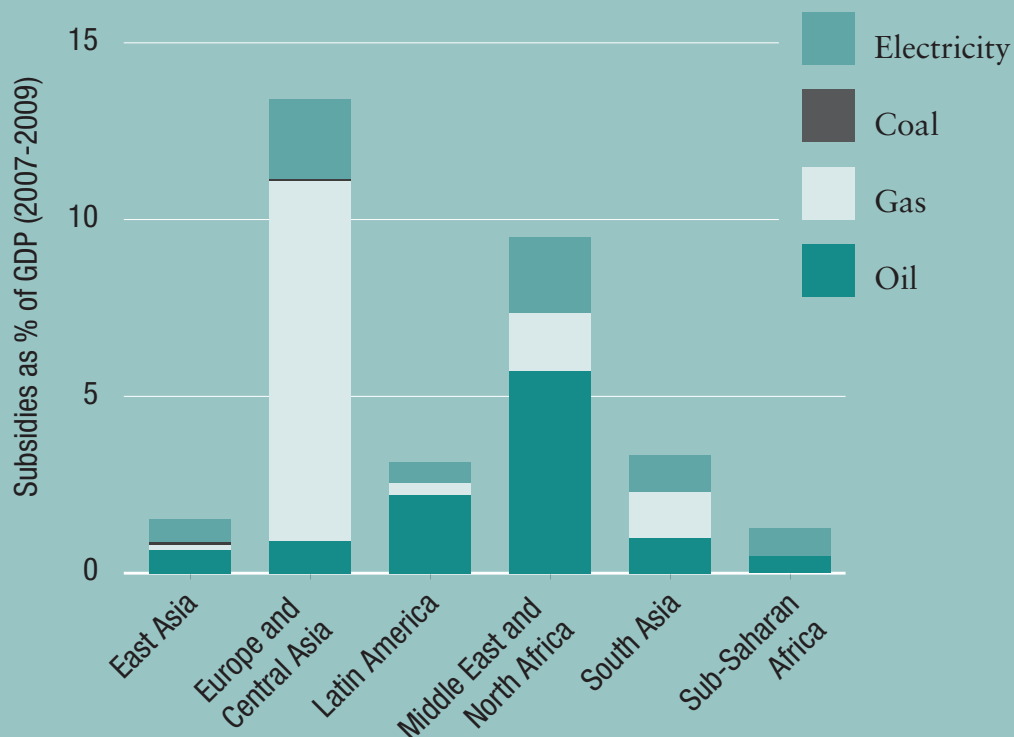


Figure 7: Primary balance and consumer fossil fuel subsidies

SOURCE: IEA (2012) AND IMF (2013C)

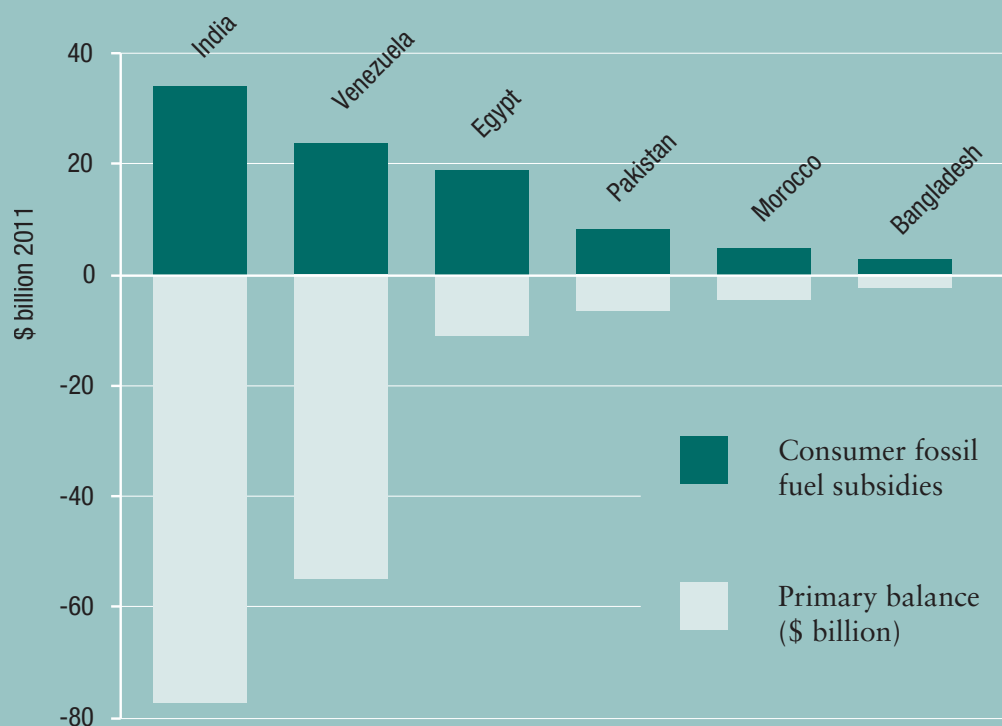


Figure 8: Public health expenditure compared with consumer fossil fuel subsidies

SOURCE: WHO (2013), IEA (2012)

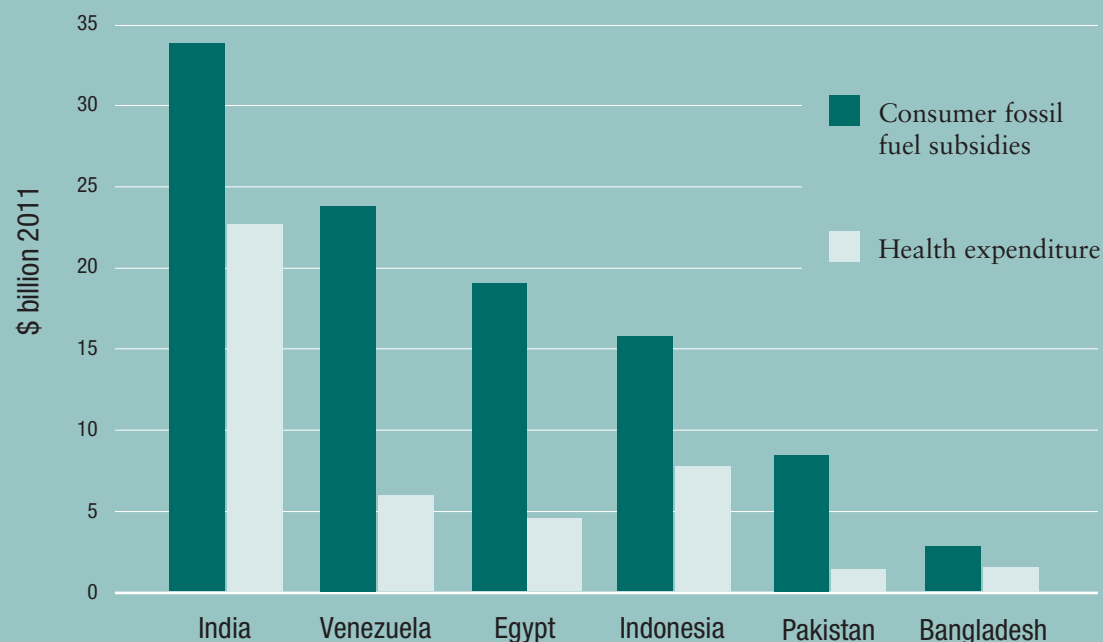
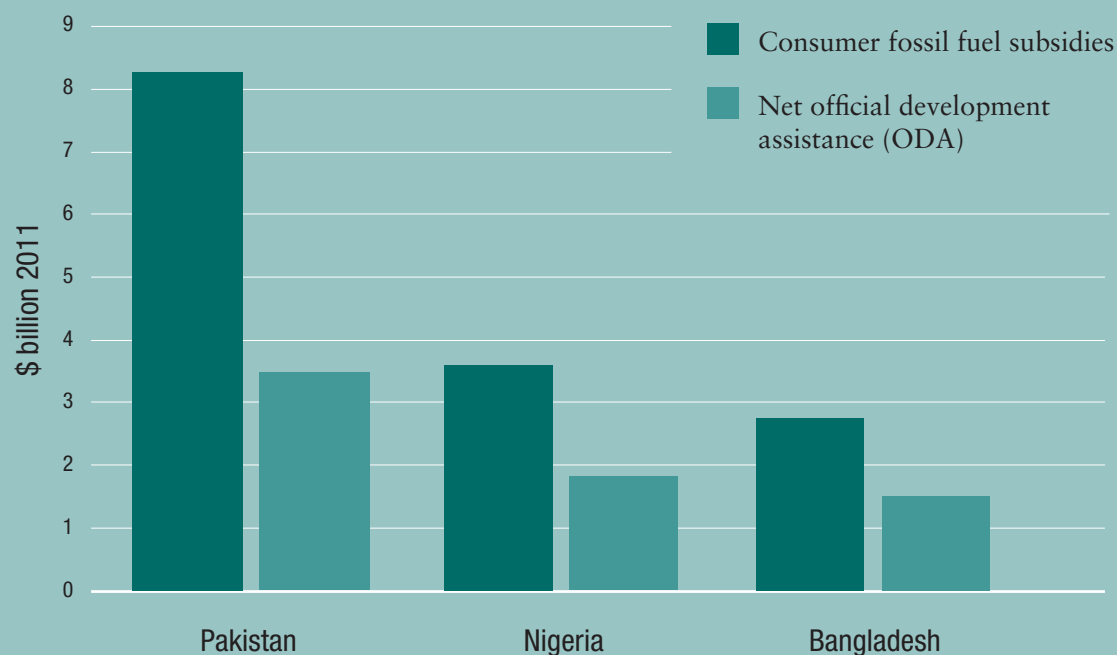


Figure 9: Aid received compared with consumer fossil fuel subsidies

SOURCE: OECD (2013b), IEA (2012)



that are multiples of the official development assistance (ODA) that they receive (see Figure 9).

4.3 Supporting high-carbon development

Many of the same bilateral and multilateral financial institutions that provide and channel climate finance and undertake to mobilise private climate finance are also significant providers of fossil fuel subsidies. International Financial Institutions (IFIs), Bilateral Financial Institutions (BFIs), and Export Credit Agencies (ECAs) provide an important sub-set of subsidies to fossil fuel producers in developing countries.

An ODI review of Oil Change International's Shift the Subsidies database found that the top 11 developed-country emitters²¹ (E11) invested twice as much in fossil fuel projects²² as in clean-energy projects²³ through IFIs between 2008 and 2011.²⁴ In that same time period, over 75% of energy project support from IFIs to Algeria, Brazil, Egypt, India, Indonesia, Kazakhstan, Nigeria, Saudi Arabia, South Africa, Thailand, Uzbekistan and Venezuela was channelled to fossil fuel projects (Oil Change International, 2013) – these are 12 of the top developing-country emitters. There has been no significant shift in this trend, as in the last financial year alone (2012-13) the World Bank Group increased its lending for fossil fuels to \$2.7 billion, including continued lending for oil and gas exploration (Oil Change International, 2013).

ECAs are bilateral organisations that provide financial services to support the overseas trade and investment activities of private domestic companies. While exact figures on ECA support for fossil fuel projects are hard to find, ECA financing often dwarfs ODA and, historically, a large proportion of projects have been related to fossil fuels. As with IFIs, it is unlikely that all of this financing actually qualifies as a subsidy, but again, lack of transparency prevents a more thorough analysis.

Finance for CCD is also a drop in the ocean compared with domestic fossil fuel subsidies in the E11. We have updated an analysis to compare public climate finance flows during the Fast-Start Finance period (2010-2012) (see Figure 10). This provides further evidence of the contrasting role of donors in providing moderate incentives for CCD internationally while subsidising fossil fuel consumption at the domestic level. The results show that fossil fuel subsidies within the E11 are almost seven times higher than climate finance transferred by the E11 to developing countries.

In addition to international fossil fuel subsidies, domestic fossil fuel subsidies in developing countries (see Figure 11) have a significant impact on the effectiveness of climate finance, the investment climate in developing countries and on the potential to mobilise private climate finance (Whitley, 2013).

21. E11 = Australia, Canada, France, Germany, Japan, Italy, Poland, Russia, Spain, United Kingdom and United States.

22. Fossil fuel projects include: oil, oil and gas, natural gas, coal, and transmission and distribution fossil.

23. Clean energy projects include: solar, wind, demand side EE, geothermal, RE general, transmission and distribution-efficiency, transmission and distribution – clean energy, policy loan-clean, hydro small, efficiency general, and clean-financing.

24. Including the World Bank Group, African Development Bank, Asian Development Bank, Inter-American Development Bank, and the European Bank for Reconstruction and Development.

Figure 10: E11 climate finance provided, as compared with domestic fossil fuel subsidies²⁵

SOURCE: OECD (2012), IEA (2012) AND GSI (2012)

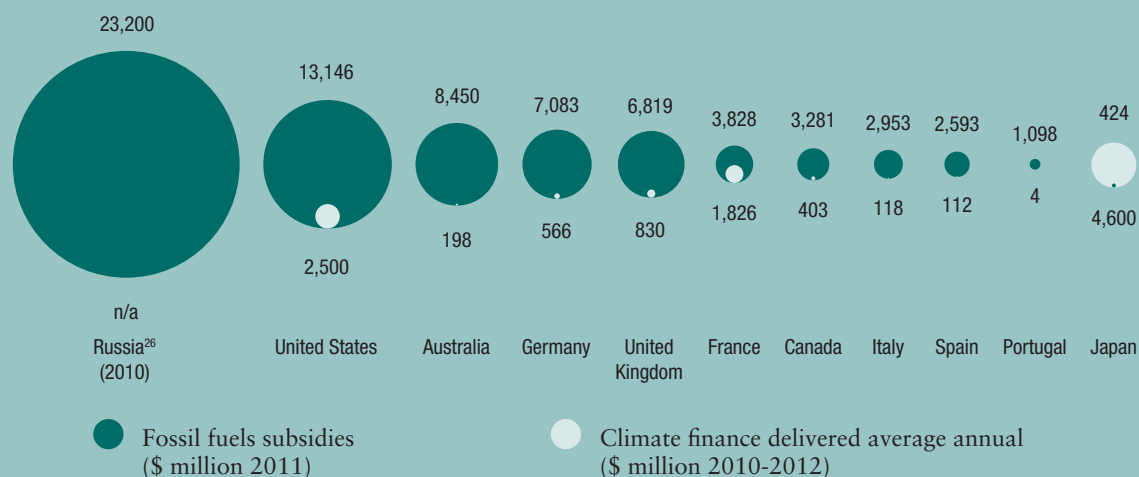
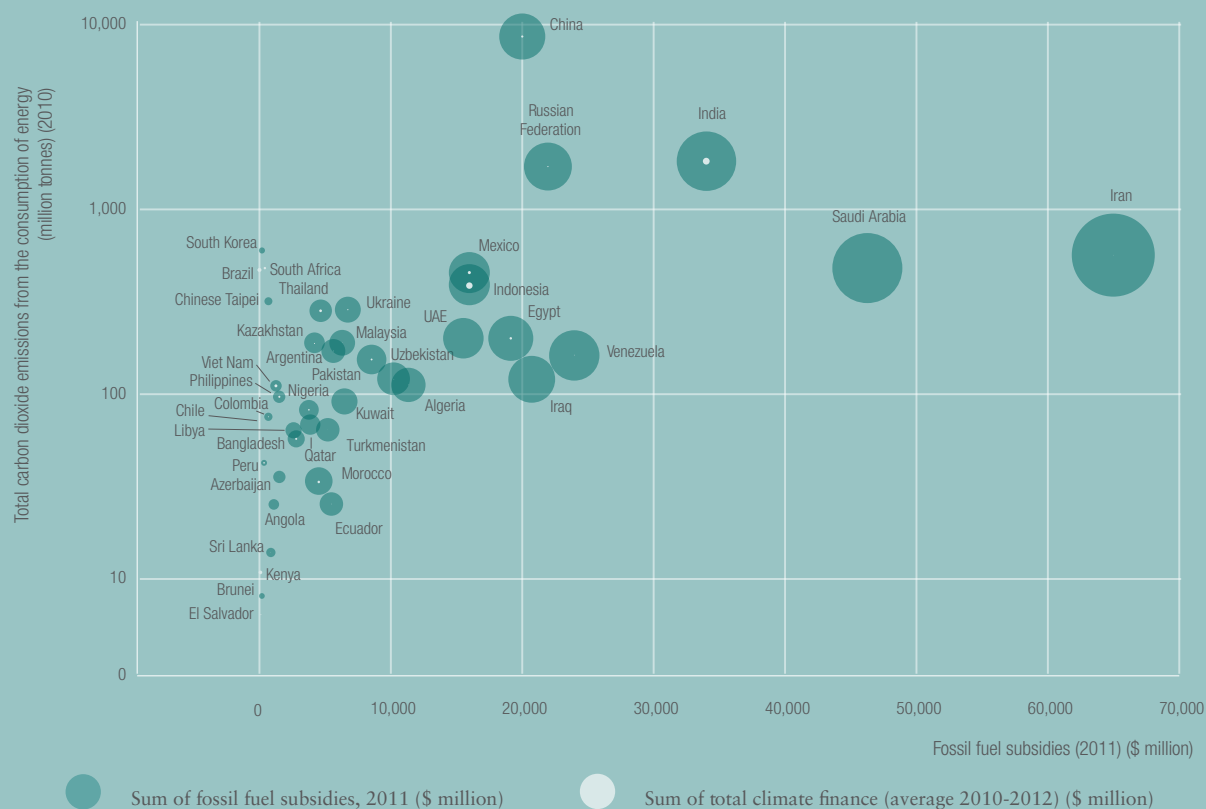


Figure 11: Fossil fuel subsidies, climate finance and greenhouse gas emissions in developing countries

SOURCE: WHITLEY (2013)



25. Budgetary support and tax expenditures for fossil fuels (OECD, 2012).

26. Data on Russian fossil fuel subsidies compiled using information from IEA and GSI for 2010.

5. Recommendations

- Global agreement in 2015 to phase out all fossil fuel subsidies by 2025 – led by a phase-out in the G20 by 2020.
- International architecture to support common frameworks to measure fossil fuel subsidies.
- International assistance to support the phase-out of fossil fuel subsidies in developing countries.
- Data collection, sharing and analysis on subsidies and investment in climate relevant sectors.
- Support for low-carbon investors through the incorporation of subsidies in rating tools.

5.1 Global agreement on fossil fuel subsidy phase-out

The current commitment of the G20 to phase out inefficient fossil fuel subsidies should be elevated to a global phase-out of all fossil fuel subsidies by 2025, with G20 countries taking a leadership position through a phase-out by 2020.

Such a commitment could be made in 2015 to align with the timing for new international agreements on climate change under the UNFCCC and on the Sustainable Development Goals (SDGs). Significant progress has already been made on other agreements on climate in parallel to the UNFCCC negotiations (for example through a recent agreement between the US and China on methane-emission sources), and a commitment to fossil fuel subsidy phase-out by 2025 would take countries one step closer to the 2-degree target.

As a ‘down-payment’ on a global phase-out, the wealthiest G20 countries should make

an immediate commitment to phase out all subsidies to coal and to oil and gas exploration and production by 2015. Every G20 country could also agree that they will develop a national strategy on subsidy phase-out by 2014.

Such speedy action by the G20 countries would reinforce the recommendations of the High-Level Panel of Eminent Persons on the Post-2015 Development Agenda (HLP) to phase out inefficient fossil fuel subsidies that encourage wasteful consumption (United Nations, 2013). It would also reinforce the growing recognition of the need to eliminate fossil fuel subsidies on the part of such institutions as the European Community, OECD, IMF and World Bank. And it would build on the historic and current efforts of countries to eliminate fossil fuel subsidies (see Section 3).

Finally, it would tap into the momentum created by the 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.

5.2 International architecture to measure fossil fuel subsidies

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 (see Table 1). In response, a number of important initiatives on subsidy estimation and transparency have been established and these provide an important foundation for international agreement on subsidy phase-out. However, they need to be scaled up and supported by an international secretariat to enable subsidy phase-out by 2025.

An international framework to address fossil fuel subsidies has, however, been slow in coming. This is, in part, because of the current ‘gridlock’ within international institutions (Hale et al., 2013). The barriers to taking on new mandates are particularly high for organisations such as WTO and the UNFCCC, both of which could

be considered the relevant institutional home for an agreement on subsidy phase-out. Instead, leadership on subsidies has come from political forums including the G20, APEC and groups of governments, such as the Friends of Fossil Fuel Subsidy Reform.

The International Institute for Sustainable Development (IISD) has analysed the possible institutional ‘homes’ for subsidy phase-out. The most pragmatic of these appears to be the G20, which would then commission support from a group of institutions with expertise and capacity in specific areas (Lang et al., 2010) (see Table 2). The G20 could provide its own proposal for an infrastructure and resources to support subsidy phase-out by 2020 in the G20, and more broadly by 2025.

The role of institutions – WTO and UNFCCC in particular – will be essential to this process, and their involvement could act as a catalyst for future broad international agreements on trade and climate change.²⁷ A G20 role in facilitating linkages between these bodies and others would

TABLE 2: INSTITUTIONAL CAPACITY TO SUPPORT G20-LED GLOBAL FOSSIL FUEL SUBSIDY PHASE-OUT BY 2025

SOURCE: ADAPTED FROM LANG ET AL. (2010)

Organisation	Comprehensive membership or international reach	Strong research and analytical capacity	Undertaking monitoring and evaluation	Provision of technical assistance	Provision of financial assistance
IEA/OECD		X	X	X	
IMF	X	X	X	X	X
OPEC		X		X	
UNEP	X	X	X	X	
UNFCCC (secretariat)	X		X	X	
UNFCCC (climate finance)	X		X	X	X
IFIs, regional, and national development banks	X			X	X
WTO (secretariat)	X	X	X		

27. For detailed information on the role that the WTO and UNFCCC can play in supporting fossil fuel subsidy phase-out see Lang et al. (2010) and Whitley (2013).

have wider benefits because internationally agreed and administered rules are needed for both trade and climate change, and because coordinated action can improve the outcomes for all.

Any international architecture on subsidy phase-out has to include clear agreement on definitions, methodologies, data transparency and peer review.

Definitions: There is a general call for the use of a common definition of ‘subsidy’ that is agreed internationally, such as the definition contained in Article 1 of the WTO’s Agreement on Subsidies and Countervailing Measures. This applies to the WTO membership of over 150 countries (Civil-20 Working Group on Environmental Sustainability and Energy, 2013).

Methodologies: There is no current set of universally agreed methodologies to track subsidies, but those that are being used in practice by the OECD and the IEA can be applied in the short term while harmonised methodologies for subsidy estimation are established. It is imperative that organisations including the OECD, IEA, World Bank and IMF establish common approaches for subsidy measurement. Given the existing resources and work, this could be achieved in the near future.

This year the OECD is also expanding its review of fossil fuel subsidies to include the BRICS (Brazil, Russia, India, China and South Africa) – leading to harmonised coverage of 15 of the G20 countries in 2014.

To support transparency on accounting methodologies, the GSI has also catalogued the definitions and methodologies used by different governments and international organisations to estimate subsidies beyond those to fossil fuels (see Whitley, 2013 for a summary of this work; Jones and Steenblik, 2010; Bast et al., 2012). This cataloguing includes subsidies to agriculture, fisheries, and traded goods and services. Common approaches for subsidy accounting and reporting must build on these experiences, with the G20 taking the first steps to increase transparency.

Data transparency – in the G20: Beyond the information available on the G20 countries in the OECD and IEA data sets, 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 there is an on-going inquiry into energy subsidies in the UK (UK Parliament, 2013).

Subsidy peer review: The GSI has developed recommendations for peer review of fossil fuel subsidies by the G20, and the US has announced that it will prepare a methodology paper for G20 peer review to: 1) promote broad participation; 2) improve transparency and accountability; and 3) be reform-focused, not only assessing current subsidies but also recommending approaches for reform. The US has also announced that it will volunteer for the G20 peer review in 2013 (Gerasimchuk, 2013; Friends of Fossil Fuel Subsidy Reform, 2013). This reflects significant support in the US for fossil fuel subsidy phase-out, with polls showing 59% support for the elimination of all subsidies for the fossil fuel industry (Leiserowitz et al., 2013).

The APEC group is also in the process of developing a process for Voluntary Peer Review of Fossil Fuel Subsidy Reform (VPR/FFSR), to assess progress in the rationalisation and phase-out of inefficient fossil fuel subsidies. This will build on the approach used for the APEC Peer Review on Energy Efficiency. The APEC goal is to have one of the APEC economies ready to begin the voluntary review early in 2014 (APEC, 2013).

5.3 International assistance to phase out fossil fuel subsidies in developing countries by 2025

5.3.1 Freeing up resources in developed countries

Given the significance of subsidies in a number of E11 countries, there is a clear need for domestic finance for decarbonisation in these countries (see Figure 1). Though not all resources freed up through subsidy reform in these countries will be deployed as international climate finance, there is a case for treating different fuel products differently. So, for example, revenues from subsidy removal and carbon taxes on fuels consumed domestically (i.e. for transport, industry, residential heating and electricity) could support national decarbonisation, while revenues generated from increased taxation of international transport fuels (aviation and bunker fuels) could be directed toward international climate-related finance.

This position has been echoed by the Long-term Climate Finance Work Programme, which has acknowledged that redirecting only a small portion of the funds resulting from subsidy elimination to climate finance would yield substantial resources (UNFCCC, 2012). The High-level Advisory Group on Climate Change Financing has also emphasised that the elimination of fossil fuel subsidies in developed countries would be a valuable source of climate finance as it is a domestic instrument that can allow finance to be disbursed more rapidly than tools that require significant international coordination. Subsidy removal can also be combined with carbon taxes, avoiding the potential for the double-counting of revenue that can arise when carbon market instruments are implemented alongside taxes (High-level Advisory Group on Climate Change Financing, 2010).

These arguments for the use of fiscal policy tools to mobilise climate finance have been reinforced by the need to generate revenue in the wake of the global financial and economic crisis, and to mitigate the impact of volatile commodity prices (GIZ, 2012; Dobbs et al., 2011).

5.3.2 Climate finance and aid to support developing-country phase-out

Climate finance committed under the UNFCCC can also be a resource to support subsidy tracking, reporting and phase-out. It 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 tracking, reporting and phasing out in developing countries could also be supported with climate finance and/or recognised (and credited) as a Nationally Appropriate Mitigation Action (NAMA) or Low Emission Development Strategy (LEDS).

As outlined in Section 4, IFIs and ECAs provide support to fossil fuel projects in developing countries, while domestic subsidies to consumers in developing countries (including Bangladesh, Nigeria and Pakistan) dwarf the ODA and climate finance those countries receive (see Figures 9 and 11). 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. Climate finance can make a direct contribution to these efforts as part of scaled up support to developing countries between now and 2020.

International support from donors and the IMF will also be essential to assist developing countries in their development of cash-transfer mechanisms and other social protection measures to ensure that the poorest are protected from the impacts of rising energy prices as a result of subsidy phase-out. Though not the focus of this report, examples of effective integration of social protection in efforts to phase out subsidies can be found in the references for the case studies cited in Section 3.2.

5.4 Data collection, sharing and analysis

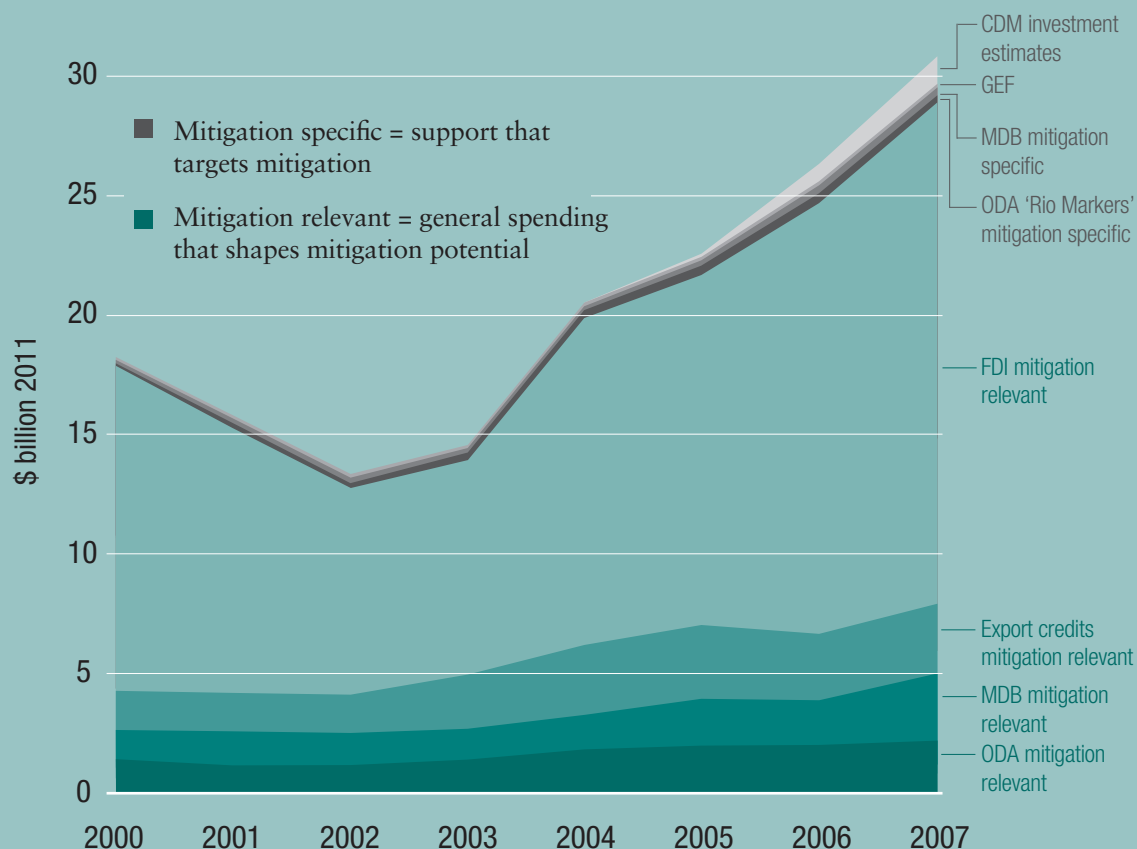
In addition to significant gaps in subsidy data, there is a chronic lack of consistent, comprehensive and publicly available data to track climate relevant investment. This is one of the most significant barriers to understanding whether existing public-sector support for CCD is effective or not (Forstater and Rank, 2012; IFC, 2013 forthcoming). The current efforts of governments and international organisations are focused on reviewing climate ‘specific’ finance (or climate positive), as opposed to broader climate ‘relevant’ finance (see Figure 12) (Corfee-Morlot et al., 2009).

This gap in information on broader climate relevant spending and support can be seen in the absence of basic publicly available information, such as fossil fuel investment by country. It is also reflected in the separate tracking exercises on energy project support provided by IFIs. Bloomberg and a group of IFIs are tracking climate ‘specific’ public finance (in terms of mitigation and adaptation), while Oil Change International is the only organisation that is tracking these same actors’ climate relevant support, including that to fossil fuel projects (Louw, 2013; African Development Bank, 2012; World Bank, 2012; Oil Change International, 2013).

In an ideal world, actors would take a broad definition of climate ‘relevant’ investment in all data collection activities linked to climate change, jointly reporting subsidies and resulting private investment across sectors that are critical for CCD.

Figure 12: Estimated mitigation-relevant investment flows²⁸

SOURCE: CORFEE-MORLOT ET AL. (2009)



The importance of understanding both the incentives and disincentives to CCD has been recognised (in part) in the latest report on the Landscape of Climate Finance by the Climate Policy Initiative (CPI), which recommended an ‘exploration of business-as-usual (brown) finance flows’ to monitor progress toward CCD, including efforts to mobilise the private sector (Buchner et al., 2012).

The UNFCCC Work Programme on Long-term Finance has called for more accurate (and comparable) information on how developed countries channel their climate finance, and for simple and manageable systems to monitor, report on and verify climate finance at the international and national levels (UNFCCC, 2012). Such

activities should track high- and low-carbon investments and support, not only in terms of energy and fossil fuels, but also water, land-use and infrastructure.

5.5 Support low-carbon investment

An issue that is discussed less often is the way in which some subsidies to fossil fuels can be considered a barrier to trade and investment in clean-energy technologies (Lang et al., 2010). These subsidies have significant implications for private investors and clean-energy project developers, who must compete with artificially low energy prices based on fossil fuels.

28. This data was collected by the OECD in 2009. Updating this information would make an important contribution to tracking climate relevant finance.

A number of countries provide subsidies to fossil fuels alongside parallel incentives for clean energy. As a result, organisations have called for a closer examination of the ‘policy bundle’ or ‘package’ associated with energy taxation (World Bank, 2007). It is quite possible that some subsidies could be negating the impact of climate finance and other clean-energy incentives.

Country-risk analysis tools could be a first step to support assessment of these ‘policy bundles’. There has been a proliferation of country-based indicators in recent years that help to measure and inform investors about the barriers and opportunities in different countries.²⁹ Existing subsidies can have a significant influence on the potential to mobilise private investment for CCD, and should be included in country rating and assessment tools that are being developed for investors.

The current version of Climatescope, a publicly available diagnostic tool that aims to ‘assess the investment climate for climate investments’

in developing countries, reviews fossil fuel subsidies only indirectly through its indicator of energy ‘price attractiveness’.³⁰ A similar Ernst and Young index, which looks at country attractiveness for investment in renewable energy, overlooks existing subsidies to fossil fuels, but includes these considerations indirectly through a scoring linked to energy prices for renewables (Ernst and Young, 2012).

It is critical that national-level diagnostics that seek to ‘assess the investment climate for climate investments’ include a review of the general environment for private investment. This requires an examination of existing subsidy regimes. Such a diagnostic should incorporate a review of local barriers, making it critical to include information on the current status of fossil fuel and other climate-incompatible subsidies. The simultaneous review of the different (and often competing) drivers of private investment could produce valuable lessons and allow the replication of best practice across a wide range of sectors.

29. The World Bank's Doing Business Rankings, Enterprise Survey, and Investors Across Borders Database; the World Economic Forum (WEF) Competitiveness Index; and Transparency International (TI)'s Corruption Perceptions Index.

30. According to Climatescope, high electricity prices are seen as a positive factor for the potential development of clean energy capacity in a country, and so the countries with the highest retail and wholesale electricity prices in the region receive the highest mark of 5, with all others benchmarked against them. Markets with low retail electricity tariffs include Venezuela, where prices are shaped by heavy government subsidies (Inter-American Development Bank, 2013).

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