



# Financing the Sustainable Development Goals through Fossil-fuel Subsidy Reform:

Opportunities in Southeast Asia, India and China



GSI Global Subsidies Initiative



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**GSI** Global  
Subsidies  
Initiative



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### WORKING PAPER

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## Executive Summary

Consumer fossil-fuel subsidies across Emerging and Developing Asia totalled US\$104 billion in 2011 (See Footnote 1 for sources), close to that of the total Organisation for Economic Co-operation and Development (OECD) aid budget (US\$134 billion) (OECD, 2014). This represents a significant stream of potential finance and resources within the region that could be redirected away from subsidies and towards broader sustainable development goals. In addition, this sum reflects neither the significant opportunity costs nations bear by not investing in other sectors of society (such as infrastructure, health and education), nor the cost of wider impacts on society through the ongoing presence of fossil-fuel subsidies on other sustainable development goals (SDGs) (e.g., carbon emissions, local air pollution, reduced investment in renewables and energy efficiency). Taken together, the process of organized fossil-fuel subsidy reform represents a significant opportunity both to fund the SDGs and achieve them in the medium term. The SDGs should reflect this opportunity and include stronger language around the process of reform in order to encourage countries to examine and reform subsidies to fossil fuels.

## Outline

This paper outlines the opportunities that fossil-fuel subsidy reform offers for funding future Sustainable Development Goals (SDGs) within the context of Asia. The paper looks at fossil-fuel subsidies and their reform in relation to sustainable development in general, and specifically with regard to proposed SDGs. Fossil-fuel subsidy reform is currently included as a “Means of Implementation” within the SDGs, and this paper highlights the opportunities available from fossil-fuel subsidy reform for financing the SDGs through direct savings achieved from reform, increased fiscal space, broader shifts in social welfare systems, and potential revenues from the eventual taxation of fossil fuels. The paper also explains how the presence of fossil-fuel subsidies affects the SDGs in other ways. Fossil-fuel subsidies and their potential removal impact wider society through four main pathways.

- The first impact comes from the overall amount of annual government spending on fossil-fuel subsidies in 2011 (US\$104 billion for Emerging and Developing Asia) (See Footnote 1), or close to that of the level of aid from the OECD Development Assistance Committee (DAC) to the whole world in 2013 (US\$134 billion) (OECD, 2014). The IEA estimates that globally fossil-fuel subsidies amount to US\$544 billion in 2012 (International Energy Agency [IEA], 2013) and that for SE Asia (only) such subsidies amounted to US\$51 billion (IEA & ERIA, 2013) and that this is deterring investment in energy infrastructure. Fossil-fuel subsidies are not delivering sustainable development for many countries because they fail as a social welfare policy tool. Most of the benefits from fossil-fuel subsidies are captured by wealthier sections of society rather than by those with low incomes. In many countries, subsidized fuel and subsequent distortions in the consumer fuel market mean that fuel is in fact sold at far higher prices in the informal sector, between rural to urban areas or from poor households to businesses, or that one subsidized fuel may be used for the adulteration of another (e.g., the blending of kerosene with diesel), and that fuel is smuggled out of the national economy and into neighbouring countries. Furthermore, universal fossil-fuel subsidies—especially for gasoline and diesel fuels—have neglected the specific energy needs of the poor, rural communities and of women. Within Emerging and Developing Asia, fossil-fuel subsidies represent 4 per cent of total government revenues or 1 per cent of regional GDP (IMF, 2013). Many countries in Asia have subsidies exceeding 2 per cent of GDP, often greater than either health or welfare budgets.



- Second, the presence of such large government subsidies undermines the SDGs in many other ways through shaping a market that is not conducive towards renewable energy take-off or investment in eco-efficiency, which encourages over-consumption of fossil fuels by depressing the national market price below international and regional benchmark levels. A below-market price that also fails to capture the wider costs borne to society of the health implications of economies based on fossil-fuels from local air pollution, congestion, traffic accidents, as well as climate change.
- Third, reform of fossil-fuel subsidies can lead to opportunities for increased fiscal space and reduced fiscal deficits which in turn enable governments to invest in infrastructure, health and education. In the process of moving towards fossil-fuel subsidy reform, it is necessary to shift away from universal welfare programs based on discounted fossil fuels and towards the implementation of long-term targeted social welfare programs in health, education and assistance to the poor, as seen within the Philippines and Indonesia. Temporary cash transfers or other compensation policies may also be needed to mitigate the impacts of rising fuel prices within the population directly, depending on the fuel in question and the impacts that higher prices will have on low-income and vulnerable groups.
- Finally, once subsidies to fossil-fuels are removed, governments are then able to tax fossil fuels to reflect the wider costs borne to society from their use. A goods and services tax (GST) or a value added tax (VAT) on fossil-fuel use can generate revenue to aid the financing of SDGs and other areas of government spending over the long term. Again, this is borne out by the experiences of the Philippines, which has undergone reform of the energy sector, and Indonesia, which is now navigating the same path.

Many governments have fossil-fuel subsidies that they can reform. Potential savings from reform, the need to build targeted social welfare systems to manage the impact of rising fuel prices, and the opportunity for taxation of fossil-fuels combined create a real possibility for providing governments with the fiscal space, the revenue streams, and impetus to build sustainable development programs, to fund and deliver the SDGs in the longer term.

## Current Size of Subsidies Within Southeast Asia, China and India

Fossil-fuel subsidies are significant—globally the IEA estimates that consumer subsidies exceeded US\$544 billion in 2012 (IEA, 2013). The IMF estimates that countries in Emerging and Developing Asia are “responsible for over 20% of global energy subsidies” (IMF, 2013).<sup>1</sup> These subsidies amount “to nearly 1% of regional GDP or 4% of total government revenues, with petroleum products and electricity accounting for nearly 90 percent of subsidies. Energy subsidies exceeded 3 per cent of GDP in four countries (Bangladesh, Brunei, Indonesia, and Pakistan)” (IMF, 2013, p. 12). GSI estimates that across the Emerging and Developing Asia region these subsidies totalled US\$104 billion (based on IMF 2011 pre-tax figures), close to the OECD’s total aid to the developing world. Chinese fossil-fuel subsidy estimates lie across a broad range: from 0.15 per cent of GDP (US\$11 billion) in 2011 (IMF, 2013), 0.4 per cent (US\$31 billion) in 2011 (IEA, 2014), and 2.59 per cent in 2010 (Lin & Ouyang, 2014). It should be noted that although China’s fuel subsidies are large in dollar terms, IMF pre-tax figures suggest they are small in relation to its economy. Yet, Sri Lanka’s subsidies may be small in dollar terms, but relatively large in term of their economy (Plante, 2013). Furthermore, the size of subsidies fluctuates with an increase or decrease in international fuel prices. So, for example, China’s fossil-fuel subsidies peaked in 2008 at 3.31 per cent of GDP due to high oil prices, but decreased to 1.84 per

<sup>1</sup> This is for pre-tax subsidies. The IMF covers the following countries as “Emerging and Developing Asia”: Afghanistan, Bangladesh, Bhutan, Brunei Darussalam, Cambodia, China, Fiji, India, Indonesia, Kiribati, Lao P.D.R., Malaysia, Maldives, Myanmar, Nepal, Pakistan, Papua New Guinea, Philippines, Samoa, Solomon Islands, Sri Lanka, Thailand, Timor-Leste, Tonga, Tuvalu, Vanuatu. However much data is identified as n/a. The GSI figure of US\$104 billion includes IMF figures for 2011 for the above countries and IEA figures for Vietnam from 2011, based on nominal data for total consumption subsidies from <http://www.iisd.org/gsi/interactive-maps>.



cent of GDP in 2009 with a decrease in international energy prices after the global financial crisis and because China reduced subsidies by introducing new pricing mechanisms for oil products (Lin & Ouyang, 2014). The table below outlines the size of fossil-fuel subsidies for various Asian economies as a percentage of GDP for 2011 based on IMF and IEA estimates.

**TABLE 1. FOSSIL-FUEL SUBSIDIES (% GDP), 2011**

	IEA ESTIMATES	IMF ESTIMATES	
		PRE-TAX	POST-TAX
Bangladesh	5.0%	5.1%	7.0%
Brunei Darussalam	3.0%	3.3%	8.4%
Cambodia	-	0.0%	0.0%
China	0.4%	0.2%	3.8%
India	2.1%	1.7%	4.5%
Indonesia	2.5%	3.2%	5.4%
Lao PDR	-	0.0%	0.0%
Malaysia	2.5%	1.9%	7.2%
Myanmar	-	0.5%	1.0%
Pakistan	5.2%	4.0%	6.1%
Philippines	0.7%	0.0%	0.7%
Korea	0.0%	0.0%	1.5%
Sri Lanka	1.9%	1.6%	2.8%
Thailand	3.0%	2.2%	3.2%
Timor-Leste	-	0.0%	0.0%
Vietnam	3.1%	0.0%	0.0%

*Note: IEA data includes consumer subsidies only. IMF data also includes fossil-fuel producer subsidies, but only for OECD countries. IEA numbers are based on gaps between domestic prices and a benchmark price for market prices, and also include any revenues that are lost when exemptions have been made for fuel from a country's existing tax regime—for example, making diesel exempt from VAT. IMF pre-tax numbers are only based on gaps between domestic prices and a benchmark price for market prices, and include some estimates of producer subsidies. This is why they are often—but not always—lower than IEA numbers. IMF post-tax numbers assume an 'ideal' level of taxation for fuel that takes into account externalities not included in market prices, namely costs of pollution (local and global), accidents and congestion. This is included an assumption that the fuels should be taxed to take into account GHGs costed at US\$34 per tonne in 2007 US dollars. This is why post-tax numbers are so much higher than IEA estimates. For more on the differences and similarities in methodologies adopted for measuring fuel subsidies see GSI (n.d.).*

Source: (IEA, n.d.; IMF, 2013)

## Fossil-fuel Subsidy Reform and Wording Within the Sustainable Development Goals

Economic theory explains that subsidies can represent a deadweight loss to society because they artificially lower costs, which encourages inefficient allocation and use of resources resulting in very real consequences for economies and society, particularly in the case of fossil-fuel subsidies. This is borne out in reality: subsidies cost governments dearly, in terms of exacerbating fiscal deficits, increasing opportunity costs due to a lack of investment in other public sector areas, a crowding out of investment in more diverse and secure energy inputs and systems, and promotion of the overuse of fossil fuels resulting in local and global pollution. There are many good reasons why



the Asia-Pacific Economic Cooperation forum (APEC) and G-20 leaders, committed in 2009 to “rationalise and phase out over the medium term fossil-fuel subsidies that encourage wasteful consumption, while recognising the importance of providing those in need with essential energy services” (APEC, 2009). Fossil-fuel subsidy reform is broadly recognized through numerous forums as an important step towards sustainable development. The issue was included in the Rio+20 declaration, where countries reaffirmed commitments in paragraph 225 to “phase out harmful and inefficient fossil-fuel subsidies that encourage wasteful consumption and undermine sustainable development” (United Nations Conference on Sustainable Development [UNCSD], 2012, p. 39).

The Rio+20 declaration also paved the way for the sustainable development goals. Since Rio+20, efforts to develop this new set of goals have been underway. A High-Level Panel (a group of eminent persons charged with providing recommendations for the goals to the UN Secretary General) published its findings in May 2013 and proposed that countries work to “Phase out inefficient fossil fuel subsidies that encourage wasteful consumption” as part of a proposed Goal 7 on Secure Sustainable Energy (The Report Of The High-Level Panel, n.d.). Recurring drafts from the Open Working Group (OWG) of the goals included similar wording that countries would “by 2030 phase out inefficient fossil fuel subsidies that encourage wasteful consumption, with solutions that aim to secure affordable energy for the poorest,” included under the proposed energy goal (United Nations Department of Economic and Social Affairs [UN DESA], 2014). However, the final outcome document from the OWG, includes wording, proposing fossil-fuel subsidy reform as a “Means of Implementation” under the area of “Sustainable Production and Consumption” (UN DESA, 2014):

12.c rationalize inefficient fossil fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities.

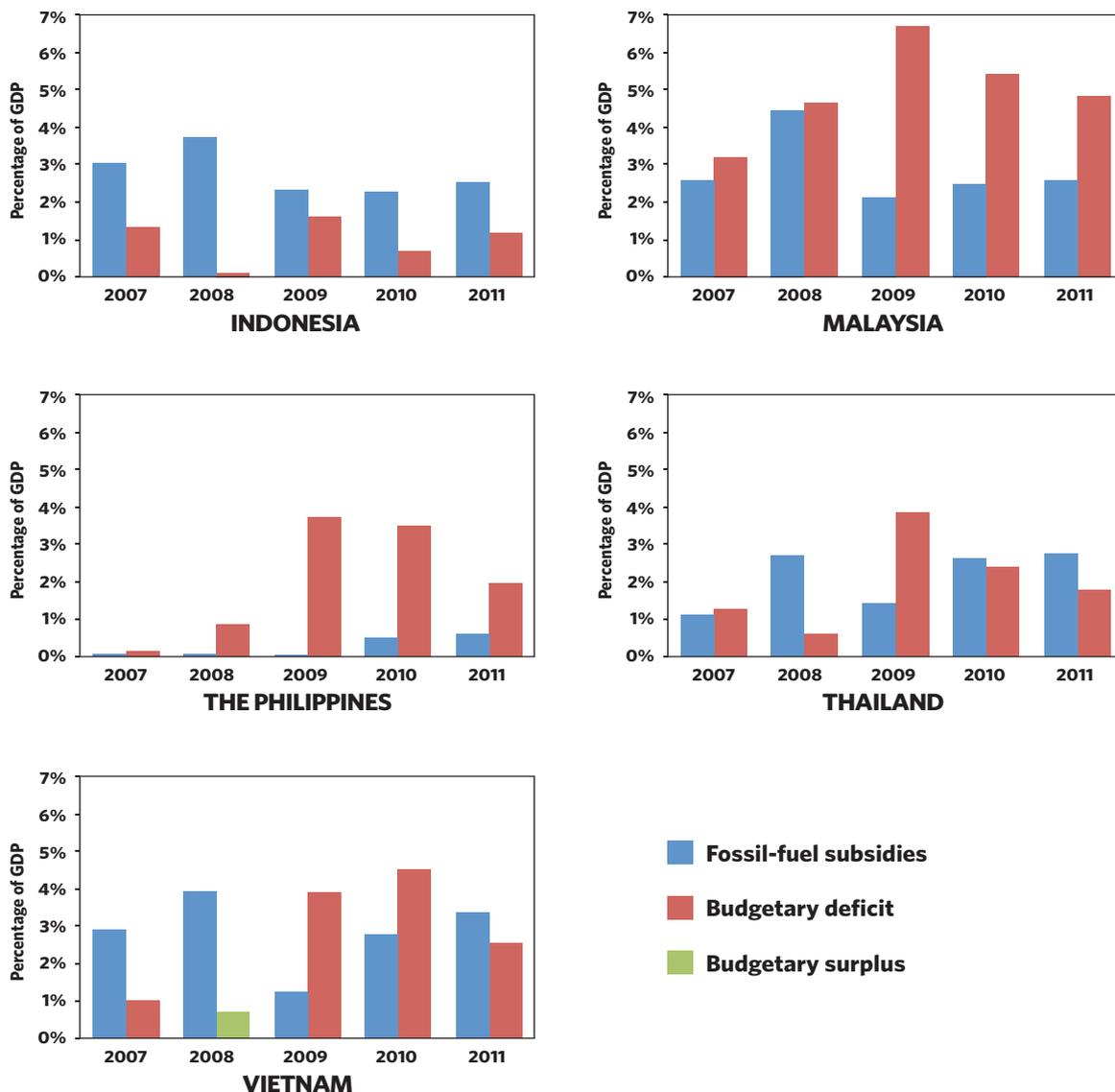
Including fossil-fuel subsidy reform as a Means of Implementation within the SDGs makes sense due to the opportunities it presents for greater fiscal space made from savings that enable government investment in more productive sectors. At the same time, however, specific commitments to phase out fossil-fuel subsidies have been dropped from the current text (a departure from previous G-20 and APEC commitments), the issue is no longer identified as a goal, no longer linked to energy, and does not include an end date.<sup>2</sup> This proposed text weakens the extent to which the SDGs will encourage countries and donors to prioritize fossil-fuel subsidy reform as a key component of the SDGs. This paper explains why retaining language linked to existing commitments to ‘phase-out inefficient fossil-fuel subsidies’ either as a Means of Implementation or as a goal in its own right makes sense, not only due to the implications for creating fiscal space to fund the SDGs, but also due to the wider ramifications that maintaining fossil-fuel subsidies has on the ambition and achievement of the SDGs for poverty reduction and sustainable development.

<sup>2</sup> For more information, IISD’s Earth Negotiations Bulletin (ENB) provides a detailed view and overall sense of the outcome. Along with four other “difficult” issues, fossil-fuel subsidy reform was moved to an informal contact group for discussion. According to ENB, delegations “expressed divergent views on a target relating to fossil fuel consumption and production subsidies, contained in the zero draft, and a contact group was convened to work on the issue” (IISD, 2014, p. 9).



## Fiscal Space and Public Health and Education Spending

Many governments, the G-20 and APEC have recognized that there are good reasons to phase out fossil-fuel subsidies. These reasons are outlined in Table 2 below, and linked to each of the SDGs as currently identified. Politically, the fiscal crisis tends to be the dominant motivation for many governments, usually brought on by the large size of subsidies, and often interacting within other pressures on government budgets and the domestic economy. There are real short-term incentives for governments to find savings, and subsidy reform creates greater fiscal space through a reduction of the national budget deficit. Figure 1 (Beaton et al., 2013) compares fossil-fuel subsidies to budget deficits for a number of Southeast Asian countries.

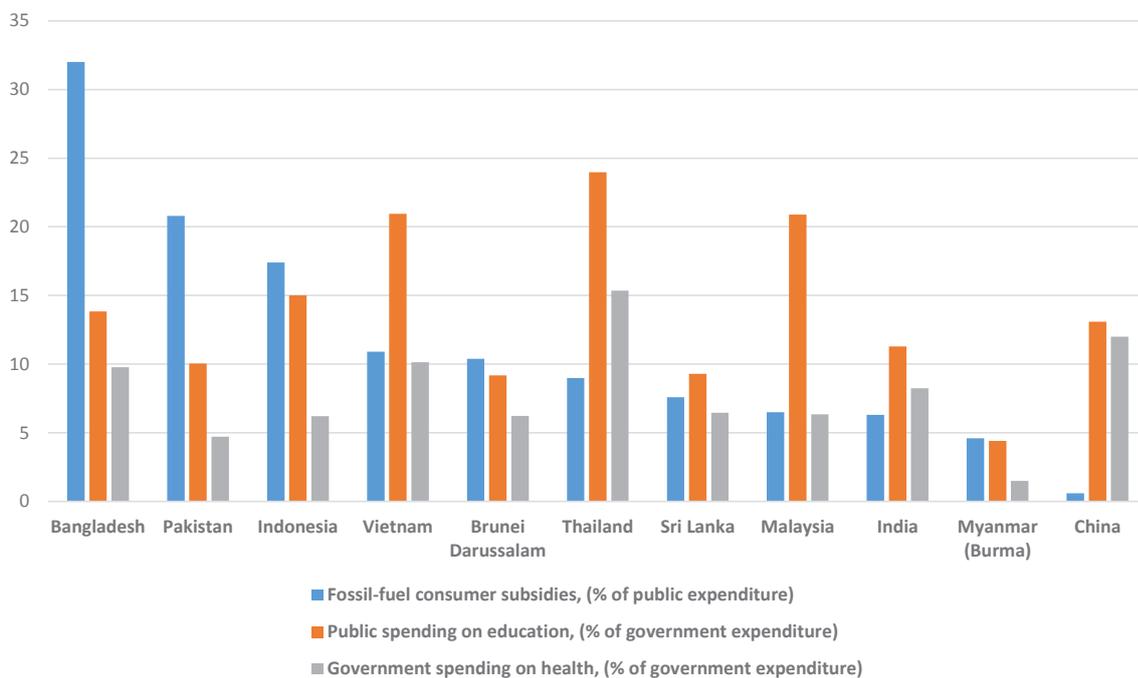


**FIGURE 1. ENERGY SUBSIDY AND BUDGETARY DEFICIT OR SURPLUS AS A PERCENTAGE OF GDP, 2007-2011**

Source: IISD-GSI calculations based on IEA (2012) subsidy estimates, derived using the price-gap method, and ADB (2012) data on GDP and budgetary deficits and surpluses.



However, in terms of sustainable development, the real cost of fossil-fuel subsidies to citizens lies in how these resources are not available for domestic allocation. Government expenditure on fossil-fuel subsidies represents huge lost opportunities to development, in terms of social spending for primary education, health care and other sectors of society (see Figure 2). In the fiscal year 2012–2013, 13.7 per cent of India’s budget expenditure went towards fossil-fuel subsidies (Global Subsidies Initiative [GSI], 2014a). Spending on fossil-fuel subsidies in India—US\$42.8 billion or 2.3 per cent of GDP (IEA, 2012)—is almost double that of public expenditure on health (1.3 per cent) (World Bank, 2012) and challenges that of government spending on education (3.4 per cent) (World Bank, 2012). For some countries, consumer fossil-fuel subsidies sometimes represent spending far greater than that expended on either health or education.



**FIGURE 2: FOSSIL-FUEL SUBSIDIES, HEALTH AND EDUCATION (% OF GOVERNMENT EXPENDITURE), 2011**

Sources: Fossil-fuel subsidies from IISD-GSI interactive map (<http://www.iisd.org/gsi/fossil-fuel-consumption-subsidies-total>) for consumer subsidies only and based on IMF (2013), all for 2011, including consumer subsidies to coal, oil, gas and electricity, based on IMF nominal figures, converted to % of public expenditure by GSI. Except for Vietnam, where IMF data is unavailable and IEA data from 2011 is used. For more information on the methodology used by the IMF and GSI to derive these figures see the GSI database. Education data from World Bank for 2011 except for China and Vietnam (2010) (World Bank, n.d.). Health data from the World Health Organization for 2011 (World Health Organization, n.d.).

## A Framework for Understanding the Impact of Fossil-Fuel Subsidies and Potential of Reform as a Means of Implementation for the SDGs

As outlined in Table 2, integrating fossil-fuel subsidy reform into the SDGs can create a framework for thinking about how best to refocus the liberated funds elsewhere to prioritize development needs (though taking into account that some share of spending will need to be cut entirely for fiscal reasons). The table also outlines other interactions between the presence of fossil-fuel subsidies and the distortions this creates in the energy sector market undermining or crowding out investment in other energy sources and efficiency measures, as well as the opportunity cost of not



investing in infrastructure, education or health, and targeted social welfare programs. The table also points to the potential, after reform, for the introduction of conventional taxation on fossil fuels such as GST or VAT or based on the reflection of wider social costs borne within the fuel price.

**TABLE 2. IMPACTS OF FOSSIL-FUEL SUBSIDIES AND POTENTIAL OPPORTUNITIES FROM THEIR REFORM ON WIDER SUSTAINABLE DEVELOPMENT GOALS**

OUTLINE OF SDG FROM THE OUTCOME DOCUMENT	LINKS TO ACHIEVEMENT OF THE SDG THROUGH FOSSIL-FUEL SUBSIDY REFORM VIA DIRECT AND INDIRECT (MEANS OF IMPLEMENTATION) MEASURES
<p><b>Goal 1. End poverty in all its forms everywhere</b></p> <p><i>Fossil-fuel subsidies do not benefit the poor. Reform of fossil-fuel subsidies can occur alongside building social welfare systems to mitigate the impacts of reform.</i></p>	<p>The IEA has found that, although fossil-fuel subsidies are often intended to improve access to modern energy services for the poor, only 8 per cent of the subsidy typically reaches the poorest income group (IEA, 2011). Indonesia, Iran, Jordan, Mexico, and Ghana have all utilized cash transfers to mitigate impacts of subsidy reform on the vulnerable. Building national cash transfer or broader social welfare systems in order to implement subsidy reform enables the transition from social welfare assistance based on universal fossil-fuel subsidies to a needs-based and targeted social welfare system (GSI &amp; IESR, 2012; United Nations Environment Programme–International Monetary Fund–Deutsche Gesellschaft für Internationale Zusammenarbeit [GIZ]–GSI, 2014). Iran removed fuel subsidies in 2009 and linked this to almost universal cash transfers (Hassanzadeh, 2012), substantially reducing poverty and inequality levels by 2012 (Salehi-Isfahani, 2014). The move came with high inflation, though this was attributed in large part to new economic sanctions imposed at the time. Indonesia also utilized unconditional cash transfers in the process of reform alongside wider long-term social welfare schemes (see Box 2). Ghana increased the coverage of the LEAP cash transfer program by 17 per cent from 100,000 households to 150,000 in 2014 during the process of fossil-fuel subsidy reform (UNEP-IMF-GIZ-GSI (2014). While cash transfer schemes are not perfect, (e.g., the Indian Direct Benefit Transfer has been halted for redesign such that in Rajasthan there are plans for targeted beneficiaries to be reached through disbursement via bank accounts held in a woman’s name (“Vasundhara Raje announces,” 2014)) they are likely less imperfect than distribution of welfare via fossil-fuel subsidies. For example, in rural Maharashtra in India for every rupee of income transferred to the poor via kerosene subsidies, six rupees has to be spent by the government (Rao, 2012).</p>
<p><b>Goal 2. End hunger, achieve food security and improved nutrition, and promote sustainable agriculture</b></p> <p><i>Shifting expensive subsidies to fossil fuels for water pumping for agriculture, towards renewable electricity for pumping and processing.</i></p>	<p>Fossil-fuel subsidies traditionally benefit urban areas over rural areas and have often failed to bring modern energy sources to rural and farming communities. For example in India, even with fossil-fuel subsidies running annually at 13.7 per cent of India’s budget expenditure (GSI 2014) a quarter of India’s population live without access to electricity (OECD/IEA, 2013) and 85 per cent of the rural population still use biomass as the main source of cooking fuel (Government of India, 2013) (Merrill, 2014). For fuels such as diesel, smuggling and adulteration can create shortages, either preventing them from reaching their intended beneficiaries, or at least rendering the policy highly inefficient. Where low prices do reach farmers, they can create a perverse incentive, encouraging over-use of water for irrigation, which in turn threatens the future viability of food production and related employment as water tables are exploited unsustainably. Shifting subsidies away from low-cost diesel and electricity for pumped irrigation, and towards water pumps powered by renewable energy, such as solar power, and more efficient use of water, would be a more sustainable use of resources. India aims to move 200,000 pumps to solar power in the next five years and to link this to drip-feed irrigation technology (Pearson &amp; Nagarajan, 2014).</p>
<p><b>Goal 3. Ensure healthy lives and promote well-being for all at all ages</b></p> <p><i>Phasing out fossil-fuel subsidies is the beginning of reflecting fully the price that society pays in ill health linked to fossil-fuels.</i></p>	<p>Pricing fossil fuels correctly is important because of the substantial costs to society from their use in terms of air pollution, congestion, carbon dioxide emissions and accidents. A recent IMF paper explains that “outdoor air pollution, primarily from fossil fuel combustion causes more than 3 million premature deaths a year worldwide, costing about 1 percent of GDP for the United States and almost 4 percent for China” and furthermore that “fuel tax reform can reduce worldwide deaths from outdoor, fossil fuel air pollution by 63%” (Parry, Heine, Lis, &amp; Li, 2014). Taxing—rather than subsidizing fossil fuels (especially gasoline)—can further help to reduce the environmental costs of inefficient fuel use, at the same time as raising additional government revenues to pay for other areas of government spending, such as health or education (for example Germany, Chile, the United Kingdom, Brazil) (Parry, Heine, Lis, &amp; Li, 2014).</p>



OUTLINE OF SDG FROM THE OUTCOME DOCUMENT	LINKS TO ACHIEVEMENT OF THE SDG THROUGH FOSSIL-FUEL SUBSIDY REFORM VIA DIRECT AND INDIRECT (MEANS OF IMPLEMENTATION) MEASURES
<p><b>Goal 4. Ensure inclusive and equitable quality education promote life</b></p> <p><i>Savings from fossil-fuel subsidies can be channeled into education. Some governments currently devote more public resources to subsidizing fossil fuels than to education.</i></p>	<p>When fossil-fuel subsidy reform was undertaken in Ghana in 2005, the government provided a range of compensation schemes that included eliminating fees for state-run primary and secondary schools. Energy sector reforms in Indonesia in 2003, 2005 and 2008 enabled the government to channel savings into a range of social sectors including education (GSI &amp; IESR, 2012; see also Box 2 below). In many countries spending on fossil-fuel subsidies exceeds that on education e.g., in Bangladesh, Pakistan and Indonesia (see Figure 1, for 2011), and other countries including Uzbekistan, Turkmenistan, Iran, and Algeria (IMF, 2013).</p>
<p><b>Goal 5. Achieve gender equality and empower all women and girls</b></p> <p><i>Cash transfers directed at women in place of fossil-fuel subsidies could help towards empowerment. In many countries fossil-fuel subsidies are not working or designed to empower women.</i></p>	<p>Shifting universal fossil-fuel subsidies towards targeted cash transfers directed at women could enable empowerment and lead to the financial inclusion of women. In many countries where fossil-fuel subsidies persist, empowerment of women is at an all-time low. For example, despite high levels of subsidies, India ranks 132 out of 148 nations in the UN Gender Equality Index. While urban women in India may benefit from subsidies to liquefied petroleum gas (LPG) and kerosene, rural women have not benefited, in that two thirds of Indians still use biomass as their main source of cooking fuel and a quarter of India's population lives without access to electricity. India is attempting to implement fuel subsidy reforms and shift welfare payments to a targeted cash transfer system, but the development gains of this could be increased significantly if the numbers of women with bank accounts was increased—currently just over 25 per cent of adult women have access to bank accounts (Global Findex 2011, Demircuc-Kunt &amp; Klapper, 2012)—and if payments were directed at women. Energy subsidies for cooking fuels need to move from kerosene to LPG, but also need to be better targeted at poorer women or on up-front startup costs (Merrill, 2014).</p>
<p><b>Goal 7. Ensure access to affordable, reliable, sustainable, and modern energy for all</b></p> <p><i>Resources spent subsidising fossil-fuels undermine investment in sustainable energy and could be better spent elsewhere.</i></p>	<p>Global consumer subsidies to fossil fuels amount to over US\$500 billion annually, standing at \$US544 billion in 2012 (IEA, 2013b). This is equivalent to four times the level of aid from the OECD DAC in 2013 (US\$134 billion) (OECD, 2013) and five times the level of total financial support to renewable energy (US\$101 billion) (IEA, 2013b). The IMF estimates that pre-tax subsidies reached around US\$480 billion in 2011, equivalent to 0.7 per cent of global GDP or 2 per cent of government revenues (IMF, 2013). This dwarfs climate finance: between 2010 and 2012, developed countries reported that they mobilized US\$35 billion for climate change (Nakhouda et al., 2013). Furthermore, the top 11 developed country emitters (E-11*) invested twice as much in fossil-fuel projects as in clean energy projects through IFIs between 2008 and 2011 (Whitley, 2013). In many countries, fossil-fuel subsidies have actually played a significant role in preventing the development of the energy sector. In Southeast Asia alone 134 million people—more than one-fifth of the total population—lack access to electricity (IEA &amp; ERIA, 2013). Some governments have paid for subsidies by requiring state-owned or private energy companies to sell energy at prices below the cost of production. This has resulted in finance-deprived energy sectors that are unable to maintain or reinvest in energy infrastructure, with significant implications for energy access.</p> <p><i>* Australia, Canada, France, Germany, Japan, Italy, Poland, Russia, Spain, United Kingdom and the United States.</i></p>
<p><b>Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all</b></p> <p><i>In the long term, fossil-fuel subsidy reform can lead to increased growth.</i></p>	<p>Economic models show that fossil-fuel subsidy reform can correct an inefficiency that results in misallocation of resources, leading to increased economic growth in the long term. If reform is linked with a redistribution of savings to mitigate the impacts of reform on vulnerable households and businesses, improved growth can be inclusive. For example, modelling results for Nigeria show that a reduction in subsidy generally results in an increase in GDP, but must be accompanied with income transfers aimed at poor households and domestic production of petroleum to alleviate impacts of rising fuel prices on household income (Siddig et al., 2014). In Mexico modelling suggests that 100 per cent investment of fossil-fuel subsidies into renewable energy would expand Mexico's GDP growth by 3 per cent by 2030 (Kim, 2014). A 1995 study (Hope &amp; Singh, 1995) found that in three of the six countries GDP growth rates were higher during the time of energy price increases, compared to the preceding two years. The other three countries experienced a fall in GDP growth rates during the period of subsidy reform but growth recovered quickly in the year following the reforms (Ellis, 2010).</p>



OUTLINE OF SDG FROM THE OUTCOME DOCUMENT	LINKS TO ACHIEVEMENT OF THE SDG THROUGH FOSSIL-FUEL SUBSIDY REFORM VIA DIRECT AND INDIRECT (MEANS OF IMPLEMENTATION) MEASURES
<p><b>Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation</b></p>	<p>In many countries with high fossil-fuel subsidies there is no public transport system because the universal subsidies operate as a highly inefficient alternative. This is unfair as it disproportionately benefits wealthier sections of society with access to private vehicles. Moreover, subsidized fuels tend to be available in central regions of a country, but fuel shortages or unofficial higher prices may consistently appear in remote areas, so rural areas are worse off.</p> <p>There are opportunity costs from not liberating resources allocated to fossil-fuel subsidies towards infrastructure such as rural electrification, public transport systems, sanitation, drinking water and irrigation. In the process of subsidy reform governments have reallocated resources to large infrastructure projects. For example, one of the policies that Indonesia used in 2013 to mitigate the impacts of reform was a large-scale public works program (see Box 2). The Indonesian government expects that such basic infrastructure projects will provide short-term employment for millions of workers (GSI, 2014b).</p> <p>As with households, fossil-fuel subsidies disproportionately benefit big businesses, who receive a larger share of spending than small and medium-sized enterprises (SMEs), who may make little use of subsidized fuels in any case depending on their production processes. In many countries, SMEs are at the heart of sustainable and inclusive economic diversification and could be better served by targeted policies.</p> <p>Where governments are providing subsidies because they are rich in fossil energy resources, they may create a structural lack of resilience in their economies, as industry that has become reliant on low energy costs struggles to compete once domestic resources begin to run low. Introducing higher energy prices in a gradual way, including measures to help businesses cope with reform, can avoid this.</p>
<p><b>Goal 10. Reduce inequality within and among countries</b></p> <p><i>Fossil-fuel subsidies as a universal system of welfare distribution are extremely costly and inefficient way of reaching the poor, and rather increase inequality, in that the wealthier tend to benefit more from subsidies.</i></p>	<p>Fossil-fuel subsidies do not benefit the poor and are often regressive in nature. In developing countries, the rich tend to benefit disproportionately from fossil-fuel subsidies. IMF research has found that “over 97 out of every 100 dollars of gasoline subsidy ‘leaks’ to the top four quintiles” and that “[o]n average, the top income quintile received about six times more in subsidies than the bottom quintile” (Arze Del Granado, Coady, &amp; Gillingham, 2010, pps. 11-13). This research reviewed 20 countries including Bangladesh, Cambodia, India, Indonesia and Sri Lanka and examined the direct impacts of increasing prices on cooking, heating, lighting and private transport fuels, and the indirect impacts on other goods and services such as public transport or food requiring a higher energy input. This research found that over 80 per cent of petrol subsidies accrue to the top two quintiles of society: for diesel and LPG this figure was 65 and 70 percent respectively. There is substantial leakage of subsidy benefits to top income groups, implying that “universal fuel subsidies are an extremely costly approach to protecting the welfare of poor households” (Arze Del Granado, et al., 2010, p. 13). In 2008 the Indonesian Ministry of Economic Affairs advised that the top 40 per cent of high-income families benefit from 70 per cent of the subsidies, while the bottom 40 per cent of low-income families benefit from only 15 per cent of the subsidies (Mourougane, 2010).</p>
<p><b>Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable</b></p>	<p>See the links to goals such as reduction in poverty, inequality, gender equity and in particular to Goal 9 regarding infrastructure and public transport systems.</p>
<p><b>Goal 13. Take urgent action to combat climate change and its impacts</b></p>	<p>Reform of pricing of fossil fuels globally could result in significant reductions in emissions. The IEA proposes that phasing out consumption fossil-fuel subsidies (alone) would contribute to a 12 per cent reduction by 2020 from energy sector emissions equivalent to 360 million tonnes of CO<sub>2</sub> and help to minimize warming to the 2°C target (IEA, 2013b). Removing subsidies from fossil fuels is the first step to getting the prices right for carbon fuels. This in turn would encourage greater energy efficiency and enable renewable energy to compete on more equal economic terms. The IMF estimates that removing fossil-fuel subsidies and then taxing fossil fuels correctly (based on the cost borne to society through air pollution, carbon emissions and accidents) could lead to a decline in CO<sub>2</sub> emissions by 23 per cent globally (Parry et al., 2014). However, 15 per cent of global CO<sub>2</sub> emissions currently receive an <i>incentive</i> of \$110 per tonne in the form of fossil-fuel subsidies while only 8 per cent are subject to a carbon price (IEA, 2013b). Liberating resources for governments to invest in renewable and low-carbon energy and more efficient public transport infrastructure is also a possibility.</p>



OUTLINE OF SDG FROM THE OUTCOME DOCUMENT	LINKS TO ACHIEVEMENT OF THE SDG THROUGH FOSSIL-FUEL SUBSIDY REFORM VIA DIRECT AND INDIRECT (MEANS OF IMPLEMENTATION) MEASURES
<p><b>Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels</b></p> <p><i>Fossil-fuel subsidies are associated with weaker institutions, their reform is a step towards strengthening institutions to deliver broader welfare and tax systems.</i></p>	<p>Fossil-fuel subsidies and countries with weak institutions tend to be linked. Also, there are strong links between countries that have energy resources and the presence of subsidies. This is partly because “Governments have recourse to subsidies because they lack other effective levels and /or institutional capacity within which to implement policy” (Commander, 2012, p. 8). The author goes on to note that “[t]his association between weak institutions and subsidies, when disaggregated by energy type, appears particularly strong for oil” (Commander, 2012, p. 9). He also finds that there is a “clear, negative association between subsidies to GDP and a measure of government effectiveness, rule of law, regulatory quality and freedom from corruption” (Commander, 2012, p. 9). Competition and industry interests play a big role in retaining fossil-fuel subsidies. Fuel smuggling between countries or adulteration between fuels as a result of subsidies is also a huge problem (for example in Venezuela) (“The Wild Frontier,” 2014) representing lost revenues to governments due to illegal trade, as well as further entrenchment of vested interests.</p>
<p><b>Goal 17. Strengthen the means of implementation and revitalize the global partnership for sustainable development</b></p> <p><i>Fossil-fuel subsidy reform brings about savings in government revenues that can be redirected elsewhere, reduces government fiscal deficits and can lead to the correct taxation of fossil fuels to cover the costs borne on society from air pollution, congestion, accidents and carbon emissions.</i></p>	<p>Fossil-fuel subsidy reform has been suggested as a Means of Implementation because by tackling subsidies governments are able to save resources, spend them elsewhere (health, education and sustainable energy). Governments may also tax fossil-fuels effectively to bring in ongoing revenues. Fossil-fuel subsidy reform can be seen as the first step towards broader fiscal reform. The IMF estimates that removing subsidies and then taxing fossil fuels effectively represents an average potential revenue to governments of 2.6 per cent of GDP globally (IMF, 2014). Furthermore, corrective taxes on coal could be a significant revenue sources for many countries including China. Removing subsidies and increasing taxes on motor fuels could bring about important revenue gains for Brazil, Egypt, Indonesia, Japan, Mexico, Nigeria and the United States (IMF, 2014). Such revenues to government can be spent on other sectors of the economy such as those that will be reflected in the Sustainable Development Goals: health, education, infrastructure, sustainable energy etc.</p>



## The Link Between Fossil-Fuel Subsidy Reform and Social Assistance: The Philippines and Indonesia

### BOX 1. THE PHILIPPINES

*The Philippines removed various fossil-fuel subsidies between 1996 and 2001 and experienced fuel price increases. It has since, however, been able to invest more in safety nets and renewable sources of energy, and now can tax fuels to collect ongoing revenues.*

The Philippines is a country from which lessons for fossil-fuel subsidy reform can be learned. The country has removed all consumer energy subsidies, successfully phasing out price subsidies in the late 1990s as a result of wider structural reform to deregulate both the downstream oil and electricity sectors, crucially with the removal of the Oil Price Stabilization Fund and privatization of the National Power Corporation. The Philippines is an importer of energy, and with rising energy prices the country has used targeted cash transfers to smooth reforms. The process has been democratically challenged on three separate occasions through major reviews, and once on a constitutional basis. Despite these challenges the Philippines has managed to reform fossil-fuel subsidies, develop a national social safety net and invest in renewable energy. Yet there is more to be done to address ongoing shortages of power, a growing country with increasing energy needs and a significant population that still lacks access to electricity. This transition has been managed through the use of targeted cash transfers and other regulated subsidies aimed at low-income households, specific sectors and certain socially sensitive fuels. These have included:

- Before market prices, a transition period where prices were adjusted monthly.
- A lifeline rate for marginalized and low-income electricity users consuming low levels of electricity (100 per cent discount) (although leakage is high in that 17 per cent of the population do not have access to electricity).
- A senior citizens' subsidy giving discounts on electricity.
- A one-off cash transfer (or *Pantawid Kuryente*, meaning to enable to buy electricity) aimed at marginalized electricity consumers (those with a monthly consumption of 100 kilowatt hours (kWh) or less) to cushion the impact of rising electricity and fuel prices, funded from a value-added tax (VAT) levied on oil (also known as *katas ng VAT*, meaning juice or benefit of VAT). 6.8 million households benefited, and the cost to the government was around US\$82 million. However, transaction and disbursement costs, leakage and exclusion rates were all high.
- A Public Transport Assistance Programme (*Pantawid Pasada*) disbursed through debit and smart cards, targeted at jeepney and motorized tricycle operators whose fares are regulated and were unable to move with fuel price changes.

The Philippines has managed to turn energy from a drain on the government budget to a gain, through removing heavy fossil-fuel subsidy expenditure and turning it into tax revenue. In 1996, direct government subsidy to the Oil Price Stabilization Fund stood at PhP 15 billion\* (-US\$343.5 million). The process of fossil-fuel subsidy removal has also led to three independent inquiries in 2005, 2008 and 2012, each reviewing the high domestic price of energy, but each time taking the decision to remain with market-based pricing and a deregulated regime, and no return to the Oil Price Stabilization Fund. The story of electricity pricing is similar: in 2001, when electricity privatization was enacted, the total financial obligations of the National Power Corporation were more than PhP 900 billion (-US\$20.7 billion), with about 65 per cent due to obligations from one-sided "take-or-pay" contracts with independent power producers. In both cases the major objectives of reform were to reduce the fiscal burden of energy subsidies, to introduce competition, increase private sector participation and ensure an efficient and reliable energy supply.

Tangential to reforms in the energy sector, the Philippines has, since 2007, developed a major national government social protection scheme, a conditional cash transfer (CCT) program called the *Pantawid Pamilya Pilipino Program* (or 4Ps), aimed at providing bridge assistance to Filipino families. The 4Ps has four parts: a Supplemental Feeding Program, a Food-for-Work Program, a Rice Subsidy Program, and the Conditional Cash Transfer (CCT) Program. The maximum grant a household may receive annually through the CCT is PhP 15,000 (approximately US\$343) disbursed via a Landbank cashcard or branch, as well as via Globe Remit (cellphone) and Philpost (postal system). In June 2012, the Pantawid Pamilya Pilipino Program (CCT) had just over three million registered households, reaching about three quarters of poor households in the country. The 4Ps was initially financed by the government, with two loans from the Asian Development Bank and World Bank. In 2012 the national government allotted a budget of PhP 39 billion (approximately US\$893.2 million). Of that budget, 20 per cent goes toward implementation, monitoring, evaluation and administration, with 80 per cent of cash transfers reaching beneficiaries. The scheme has grown exponentially, but there are problems with accessing services due to deficiencies on the provision of services on the supply side.



Furthermore, the Philippines' efforts to shift from fossil-fuel sources to renewable forms of energy are a key part of the government's strategy to provide energy supply for the country, reduce its dependence on imports and exposure to price fluctuations in international markets, and enhance environmental protection in pursuit of "greener" economic growth. Geothermal and hydro resources already account for a significant portion of power generation. The government has since targeted subsidies and policies towards expanding electricity networks and renewable forms of energy in the following ways:

- A major reform of VAT in 2005 to finance short-term income support to the poor and long-term infrastructure, health and education programs. VAT was raised to 12 per cent on gasoline, an excise tax added to gasoline, and a tax incentive created by setting VAT at 0 per cent for renewables; The Philippines has maintained a flat rate of 12 per cent VAT on fossil fuels despite numerous pressures to reduce and remove this. This tax revenue from oil has been a major source of revenue for the Philippine government, which argues that the increased VAT collection was necessary to finance short-term income support for the poor and long-term programs on infrastructure, health and education. The burden of VAT is greater on those consuming more fuel and who tend to have higher incomes.
- An expanded Rural Electrification Program aiming for 90 per cent household electrification by 2017. Extension of the grid and electrification is being developed through a mixture of measures including a universal service obligation on distribution utilities within franchise areas, a universal charge for missionary electrification on all electricity customers, and opening of unconnected areas to qualified third parties for electrification services. Third parties have been active in promoting renewable energy sources such as solar, wind and mini-hydro, especially to off-grid areas. In 2010 the Energy Regulatory Commission also approved PhP 2.763 billion (-US\$62.6 million) per year for 2010 to 2013 for the Small Power Utilities Group operations to support missionary electrification efforts.
- Introduction of the Renewable Energy Act of 2008 which offered incentives for renewable energy projects, including income tax breaks (first seven years), duty-free imports for equipment (first 10 years), accelerated depreciation on equipment and a minimum percentage requirement. Furthermore, a 0 per cent VAT rate on the sale of power from renewable generation, tax exemption on carbon credits and further tax credits on the purchase of domestically produced renewable equipment. Introduction of an initial feed-in tariff (FIT) system for electricity produced from renewables. A target of 760 MW to be covered by FIT rates over three years (or around 5 per cent of the 2011 total installed capacity of the Philippines).
- Investment in domestically produced electric tricycles to reduce pollution with a grant from the Asian Development Bank and co-financing from the Clean Technology Fund, expected to deliver savings to operators (from the switch in fuel type), domestic jobs and reduced pollution.
- Financing the rehabilitation of the hydropower facilities in 2012.
- A small universal charge on grid electricity to support the management of watersheds.

Throughout this period of reform (2000–2009) energy efficiency has been improving. Energy use per capita has been declining and GDP per unit of energy use has been increasing. At the same time, per capita electricity consumption has been increasing.

\* *Philippine peso. At time of writing 1 PhP = US\$0.022*

Source: This case study is drawn from the forthcoming report *Lessons Learned: Fossil-Fuel Subsidies and Energy Sector Reform in the Philippines* (Mendoza, 2014).



## BOX 2. INDONESIA

Following fuel subsidy reductions in 2005, 2008 and 2013 the **Indonesian government** has delivered temporary cash transfer programs targeting low-income households to relieve the burden of higher prices. During this period the government has also introduced a number of social welfare programs, including more permanent social assistance programs and investment in basic infrastructure, which taken together could be strengthened and improved to create a comprehensive social welfare system. Indonesia's experience demonstrates the striking complementarity of fuel subsidy and social welfare reforms, with one providing strong justification for the other.

The government of Indonesia has used energy subsidies as a core policy instrument for stabilizing prices and protecting the general welfare of the public. Gasoline, diesel, kerosene and liquefied petroleum gas and electricity have all be sold in the domestic market below their economic prices. These subsidized energy prices have acted as a form of social welfare policies. The government used this approach of universal subsidies to stabilize the prices of fuels and other commodities—and although targeting was limited, from the 1970s until the late 1990s Indonesia did achieve significant poverty reduction using this broad-brush approach. But over the years these subsidies have become less efficient and effective. As Indonesia has grown wealthier, a larger and larger share of the benefits has been captured by the growing middle- and high-income population, purchasing larger quantities of gasoline and diesel for use in private vehicles. At the same time, increasing global food prices and dwindling petroleum reserves have increased the fiscal cost of subsidies for the government. As a result, energy subsidies consume around one-fifth to one quarter of government expenditure, a sum larger than expenditure on defence, education, health and social security combined (Tumiwa et al. 2012).

The government of Indonesia has cut fuel subsidies several times since 1998. In 2001, President Abdurrahman Wahid increased fuel prices by 30 per cent. Then in 2005, President Yudhoyono increased fuel prices by almost 100 per cent. He again increased fuel prices in 2008 by about 30 per cent, although in 2009 the price was returned to the end-2005 level in a move seen by many as a bid for reelection. Then in 2013, after a year of delay from the initial plan, street protests and heavy political wrangling in parliament, fuel prices were increased to slightly above the 2008 prices. In each instance, social protection measures were either introduced or expanded at the moment that fuel subsidies were reduced, to help households cope with the impact on their welfare. President-elect, Joko Widodo, again wants to tackle fossil-fuel subsidies, the main reason behind a current account deficit that is expected to exceed 3 per cent of GDP this year and that is costing the government about US\$20 billion a year, or nearly a fifth of its budget (Suroyo & Kapoor, 2014).

Before the government can move further in eliminating fuel subsidies, it has to build a strong welfare system to provide its population with better ways to cope with the resulting economic shocks. As of 2014, the government has introduced a number of social welfare programs that together can be seen as building blocks for a comprehensive welfare system. There are three clusters of social welfare programs, summarized in the bullets below, that have been used in the past decade to help cushion the impact of fuel subsidy reforms. These are regular programs, meaning they are delivered on an ongoing, permanent basis. In 2005, 2008 and 2013 the government combined these ongoing support programs with temporary and unconditional direct cash transfer programs.

- *Raskin* – A subsidized rice program initiated in 1998 under another name. Today, *Raskin* targets some 15 million households (the poorest 25 per cent of the population). Eligible villagers—usually identified by a coupon or a letter signed by the village head stating they are poor households—then line up once a month to purchase up to 15 kilograms of rice each at 20 to 30 per cent of the market price. There are many studies which document the problems and weaknesses of the program. Yet in 2013, as part of the compensation offered for the fuel price increase that year, *Raskin* was to be distributed 15 times a year through to 2014.
- *Jamkesmas* – a public health insurance system begun in 1998 when fees were waived for outpatient and inpatient care at the community health clinics or for the poor for some services from public hospitals. Between 2004 and 2007 the program was called *Askeskin* and run by a government-owned insurance company. Today it is run as *Jamkesmas* under the State. *Jamkesmas* targets 76.4 million Indonesians (about 30 per cent of the population) and provides beneficiaries with free health care services. As a scheme to mitigate the impacts of fossil-fuel subsidy reform, *Jamkesmas* does not help households cope with a high cost of living in the short term, but it does have the potential to significantly improve their well-being in the medium to long terms. However, the utilization rate is still very low due to supply-side constraints, especially in rural and remote areas.
- *Bantuan Siswa Miskin*, or BSM (literally “assistance for poor students”) – a cash assistance program for students from poor households who are enrolled in elementary school, junior secondary school and high school. The program was introduced in 2008 and provides a cash transfer of between US\$36 to US\$100 per student per year, depending on the school level. The amount is intended to cover school-related expenses other than tuition expenses, mainly the cost of transport. In 2008, the BSM provided assistance to some 3 million students at all levels of elementary and secondary education. By early 2013, the program was already targeting 8 million students. In the second half of 2013, following an increase in the fuel prices, the BSM was expanded even further to target all students from households in the bottom 25 percentile, a number equivalent to 15.4 million students (Nazara & Rahayu, 2013). As a social assistance measure to help households cope with the withdrawal of



fuel subsidies, BSM provides support in several ways: as an income supplement for households that have education-related expenditure, as a way of easing the short-term shock of an increase in the cost of energy, and by promoting greater school attendance.

- PKH - the conditional cash transfer launched in 2007, *Program Keluarga Harapan* (PKH, or The Family of Hope Program) was introduced into seven provinces, covering 350,000 families. PKH was designed using Mexico's *Oportunidades* and Brazil's *Bolsa Familia* as its model. PKH targets households at the bottom 7-10 per cent (considered as "very poor") comprising at least one of the following: a pregnant mother; children under the age of 6; elementary school children (aged 7-12); or junior secondary school children (aged 12-15). PKH households need to ensure that pregnant mothers visit a health care center at least four times during their pregnancy; that children under 6 visit a health clinic to measure their weight and height as well as receive vitamins and scheduled immunization; and that school-aged children are enrolled in schools and maintain a minimum of 85 per cent attendance each month. By 2013, PKH was already operating in 70 per cent of all districts. The program covers 2.4 million households, and will expand to cover 3.2 million households in 2014. On average, PKH households in 2013 received \$140 per year (Nazara & Rahayu, 2013). Again, supply-side availability is an issue along with access to transport and potential problems meeting the conditions.

These permanent schemes were utilized alongside an unconditional cash transfer scheme introduced in 2013 (the *Bantuan Langsung Sementara Masyarakat* (BSLM), or "temporary direct cash assistance") in order to mitigate the impacts of fuel subsidy reform. Indonesia has used temporary cash transfers previously during reform e.g., in 2005 covering 19 million poor families. A similar cash transfer occurred in 2008 for seven months and again in 2013.

Furthermore, Indonesia has invested in a basic infrastructure package through the Ministry of Public Works called the Acceleration and Expansion of Development Program or P4 (*Program Percepatan dan Perluasan Pembangunan*). This Program covers housing infrastructure development at the local scale and is targeted at villages whose poverty rate is 40-50 per cent or above (covering transportation, sanitation, drinking water and irrigation infrastructure). The program also targets water to develop both drinking water systems (in fishing villages, those experiencing a water crisis and with poor communities in rural and urban areas) and water capacity issues (including flood protection and irrigation systems).

In 2013 the total compensation package to mitigate the impact of rising fuel prices amounted to US\$2.9 billion and covered the BSLM, BSM, PKH, *Raskin* and Basic Infrastructure Program.

Sources: Apart from reference to recent developments this case study is drawn directly from Perdana (2014) and GSI (2014).

## Recommendations

This paper finds that consumer subsidies towards fossil fuels across Emerging and Developing Asia totalled US\$104 billion in 2011 (see Footnote 1 for sources) close to total OECD development aid levels (US\$134 billion) (OECD, 2014). This represents a significant stream of potential finance and resources that could be redirected away from subsidies and towards broader sustainable development goals. This sum fails to reflect significant opportunity costs nations bear by not investing in other sectors of society (such as infrastructure, health and education), nor the cost of wider impacts on society through the ongoing presence of fossil-fuel subsidies on other SDGs (e.g., carbon emissions, local air pollution, reduced investment in renewables and energy efficiency). Taken together, the process of organized fossil-fuel subsidy reform represents a significant opportunity both to finance the SDGs and achieve them in the medium term for the Asia Region.

Despite the numerous benefits that could be achieved from fossil-fuel subsidy reform, governments around the world have not unilaterally dealt with this policy issue themselves. The simple reason for this is that fossil-fuel subsidy is difficult to do well, and there many examples of where it has been done badly. The GSI consistently recommends a three-pronged approach to improve the quality and results of reform: get the prices right, build support for reform, and manage the impacts of reform. This approach is outlined in detail in GSI's Guidebook to Fossil-fuel Subsidy Reform, which is specifically based on the Southeast Asian experience (Beaton et al. 2013).

This is an added reason to include fossil-fuel subsidy reform as a key goal within the SDGs. The purpose of the SDGs is to focus donor, business and civil society attention on key ambitions and interventions to deliver sustainable development. In order to fulfill this potential, fossil-fuel subsidy reform requires more information sharing, more innovative solutions to protecting vulnerable groups, improving energy systems, and maximizing the environmental and social benefits of reform.

Finally, the SDGs should include wording on fossil-fuel subsidy reform as in previous versions of the draft goals i.e. "by 2030 phase out inefficient fossil fuel subsidies that encourage wasteful consumption, with solutions that aim to secure affordable energy for the poorest." This wording should be placed firmly within the energy sector goal, even though the issue touches on the achievement of almost all other SDGs. The size and nature of fossil-fuel subsidies require that their reform be measured as a goal in its own right. Fossil-fuel subsidy reform is not only a means of finance for the SDGs, it is also a crucial mechanism towards directly achieving and supporting many of the other SDGs.

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