

Lessons Drawn from Reforms of Energy Subsidies



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REF 171013

Background: International Interest Gaining in Energy Subsidy Reform

For the purpose of this document, energy subsidies can be defined as any government action that lowers the cost of energy production, raises the revenues of energy producers or lowers the price paid by energy consumers.¹ These investments aim to improve energy access by making prices more affordable, shielding domestic consumers from international price volatility and supporting energy-intensive industries.²

Although energy subsidies have the potential to generate short-term benefits, they have been criticized for leading to unintended adverse consequences by impeding market functions, limiting investment in clean energy sources and undermining efforts to deal with climate change (where the subsidies are for oil and gas).³ Critics note that the use of public money creates artificial prices and governments must carefully evaluate the intent of funds invested in R&D, manufacturing and deployment of energy technologies.

The outcome of energy subsidies often depends on where the government places these subsidies – on the supply side or on the demand side.⁴

Reform of how price controls are used to promote efficiency and competitiveness seeks to address the different needs of growing and developed economies and to normalize markets worldwide. Subsidies on the supply side (also called producer subsidies) can protect firms from competitive pressure and discourage strategies to minimize costs. They can also distort price signals and may result in a misallocation of resources towards investments that would be much less profitable in the absence of subsidies.⁶

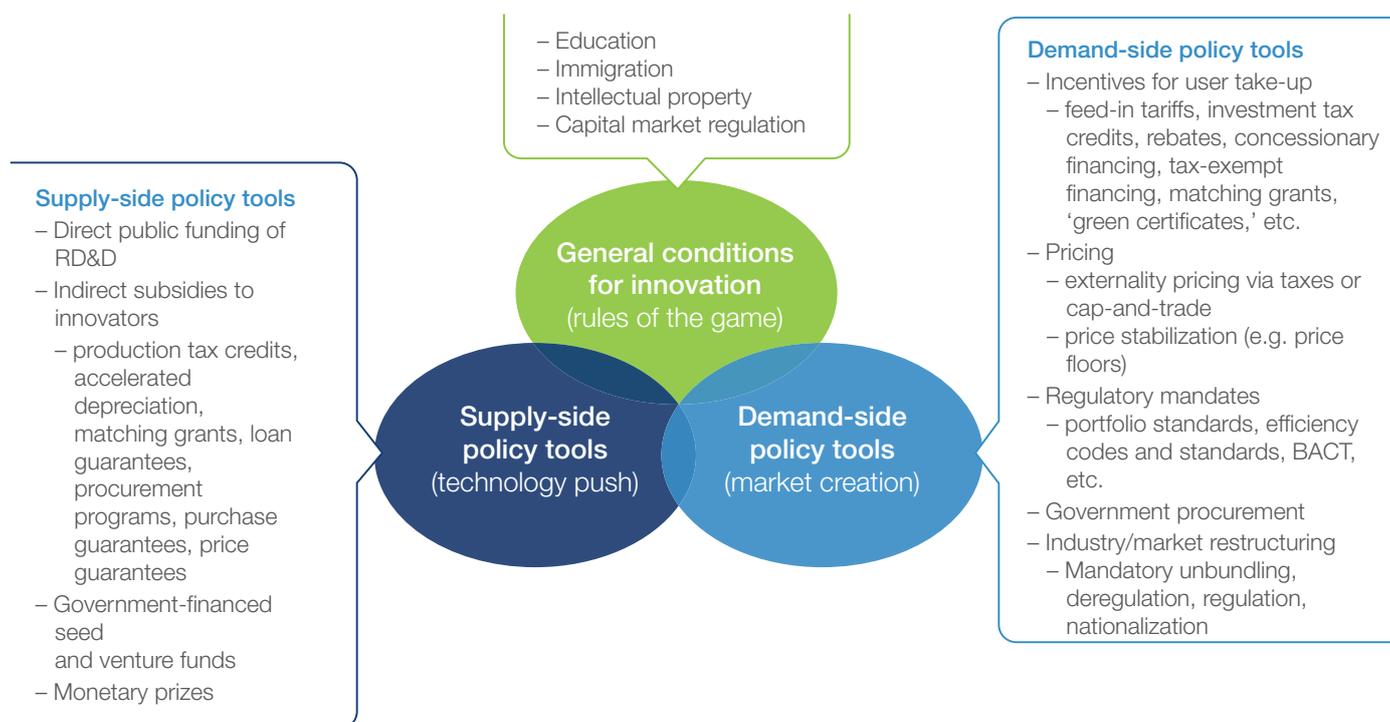
However, when subsidies keep prices low on the demand side, inefficiency can also be an adverse consequence. For example, a 2007 report found that fuel efficiency of private and public transport in the Middle East is exceptionally low, with average fuel consumption per vehicle more than double the average in countries without fuel subsidies. As a simple matter of logic, one would expect similar distortions to appear in subsidies

for other energy forms, including renewables and nuclear. These large fuel subsidies for private and business transport eliminate incentives to be economical.⁷

In September 2009, G20 leaders took a step towards reforming energy subsidies by committing to “rationalize and phase out over the medium term inefficient fossil fuel subsidies that encourage wasteful consumption”.⁸ The effort acknowledged the globalized nature of energy markets and the interest in a transition to market pricing. International leaders continue to cooperatively explore new strategies to encourage efficient, sustainable energy options to meet consumer demand while contending with the environmental impacts of growing consumption.

Despite interest in reform, the International Energy Agency (IEA) found that distortions continue to exist in today’s energy markets. However, it also found that fossil fuel subsidies overwhelmingly favour oil, gas, nuclear and renewables rather than coal.

Figure 1 The Government Role in Energy Innovation⁵



1 http://www.worldenergyoutlook.org/media/weowebsite/energysubsidies/second_joint_report.pdf

2 http://www.iisd.org/gsi/sites/default/files/ffs_india_czguide.pdf

3 http://www.worldenergyoutlook.org/media/weowebsite/energysubsidies/second_joint_report.pdf

4 Lester, Richard K. “America’s Energy Innovation Problem (and How to Fix it)”, Energy Innovation Working Paper Series, 2009, p. 29

5 Lester, Richard K. “America’s Energy Innovation Problem (and How to Fix it)”, Energy Innovation Working Paper Series, 2009, p. 29

6,7 <http://www.undp.org/content/dam/undp/library/Environment%20and%20Energy/UNDP-EE-AHDR-Energy-Subsidies-2012-Final.pdf>

8 http://www.worldenergyoutlook.org/media/weowebsite/energysubsidies/second_joint_report.pdf

The IEA highlighted that fossil fuel subsidies have even expanded.⁹ Spending on fossil fuel subsidies reached US\$ 532 billion in 2011, 30% growth when compared to 2010. Four major constraints slowed the removal of fuel subsidies: price hikes, hampered growth, speculation and hoarding, and political turmoil.¹⁰

Nonetheless, the transition to market prices can be eased by the way in which subsidies are removed. The following examples demonstrate government actions that have worked and others that have failed.

Case Studies: National Approaches to Energy Subsidies

Examples from around the world provide lessons on how the transition to market prices can be made smoothly. The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ, the German development agency) recommends that governments should avoid price jumps of over 10% per adjustment when instituting reform and implement small increments on a regular (e.g. monthly) basis over a clear time frame.¹¹

Finding ways to achieve a gradual phase-out of subsidies and monitoring of the impacts of implementation is essential to prevent price inflation or service disruption. Public support for reform must be built with clear communications campaigns that include stakeholder consultation and transparency about fuel prices.

Applied as lessons, these examples are valuable. According to the International Institute for Sustainable Development, fossil fuel subsidy reform would result in aggregate increases in gross domestic product (GDP) in both OECD and non-OECD countries of up to 0.7% per year until 2050.

Bolivia: Public Outcry Reverses Reform

In 2010, Bolivia removed fuel subsidies, lifting a price freeze that had been in place for six years. According to Bolivia's President Evo Morales, the decision to end subsidies was made in an effort to curtail the widespread smuggling of artificially low-priced diesel and gasoline to neighbouring countries. The government estimated that US\$ 150 million of the annual subsidy was ending up in the pockets of smugglers and foreign consumers.

The removal of the subsidy took Bolivians by surprise as it instantly increased prices by over 80%. Diesel prices rose 83% on the announcement to US\$ 0.96 a litre; low-octane petrol by 73% to US\$ 0.90; and high-octane by 57% to US\$ 1.04.¹² Transport and teachers unions went on strike. Thousands of demonstrators marched in major cities.¹³ The public backlash led to a rapid reinstatement of subsidies by the government.

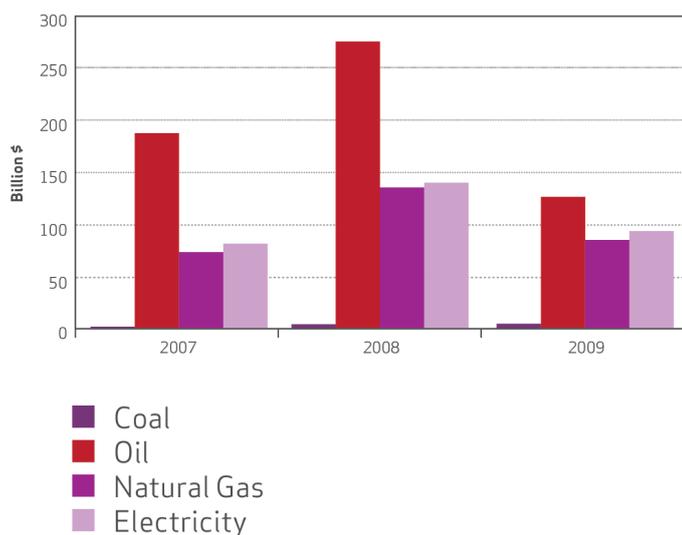
Bolivia's hydrocarbon sector, nationalized in 2006, has often been the source for public discontent. In 2003, then-president Gonzalo Sánchez de Losada fled abroad after riots sparked by tax increases imposed to avoid a fuel price rise. Ex-president Carlos Mesa's diesel increase in 2004 bolstered an autonomy movement in the gas-rich south-eastern states.

Chile: Demand-side Reform Liberalizes the Market

Chile's energy sector reform success and sustainability are impressive considering its heavy dependence on international supplies. Chile imports 80% of its primary energy and has few indigenous fossil fuels. This leaves the country vulnerable to price volatility and

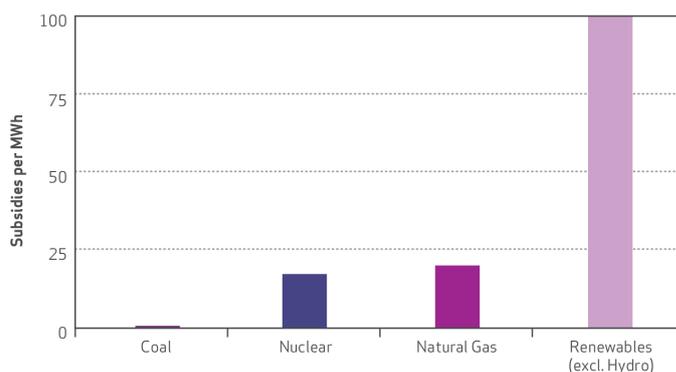
Fossil fuel subsidies by type (billion US\$)

Source: IEA World Energy Outlook 2010



Estimates of relative subsidies to energy sources (US\$/MWh)

Source: IEA World Energy Outlook 2010, Relative Subsidies to Energy Sources, Global Subsidies Initiative, 2010, IEA Key World Energy Statistics 2010



9 <http://www.worldenergyoutlook.org/media/weowebsite/2012/factsheets.pdf>

10 <http://www.eria.org/Chapter%208-Ompact%20of%20Fuel%20Subsidy%20Removal%20on%20Government%20Spending.pdf>

11 http://www.iisd.org/gsi/sites/default/files/ffs_india_czguide.pdf

12 <http://www.ft.com/cms/s/0/caa11ff4-11e6-11e0-92d0-00144feabdc0.html#axzz2Eg2davXR>

13 <http://www.scribd.com/doc/111657654/Implementing-Energy-Subsidy-Reforms>

supply interruptions. Chile is widely regarded as a successful case of energy sector reform because it was one of the first countries in the region to effectively liberalize its electricity market.¹⁴

Chile's energy reforms focus on the demand side of its energy sector. While there is an excise tax on transport fuels, there is an explicit government policy to reduce price volatility for consumers of transport fuels through a Consumers' Protection System. A price band is established around the fuel's average of past and future prices over a five-month window. If the price exceeds the price-band ceiling, a reduction of tax is applied to benefit fuel consumers. However, if the oil price is below the price-band floor, the rate of tax applied is increased, making this measure more revenue-neutral for the government.¹⁵

While Chile still has some fuel subsidies, transparency has helped the public to understand price fluctuations and pave the way for liberalization of the domestic fuels market.¹⁶ The subsidiary role of the state in the electricity sector is one of the key lessons for countries undergoing reform.¹⁷

China: Supply-side Emphasis Serves National Interest

While China acknowledges the benefits of subsidy reform, it also sees value in its fossil fuel subsidies as a key element in both its energy security and foreign policy. The core attributes of China's energy policies lie in substantial government ownership of assets and continued management of the market.¹⁸ China is one of the few countries that subsidize coal consumption. Of its US\$ 21.32 billion in fossil fuel consumption subsidies in 2010, electricity receives the most (54%), then oil (36%) and coal (9%).¹⁹ Without specific definitions of subsidies, China has flexibility with particular policy interventions.

China's most recent reform involved a tiered electricity pricing system, in which rates for the first tier remain unchanged from current levels, but rates progressively increase for the second and third tiers. Each province establishes its own price bracket accordingly.²⁰

However, China is not shy about continuing to implement fossil fuel subsidies. In November 2012, the Ministry of Finance in China announced that it will offer a subsidy of 0.4 yuan for every cubic metre of shale gas produced from 2012 to 2015 (with additional subsidies launched by local governments to meet their regional needs).²¹

Overall, China's energy subsidies are intended to ensure sufficient energy supply to support rapid economic growth. Despite substantial energy subsidies, China's approach of gradually reducing energy subsidies has proven to be effective and politically feasible. Given that China's land mass encompasses a large footprint, the infrastructure and transport sectors are often subsidized, generating direct and indirect subsidies to particular fossil fuels.²² With regard to reform, China sees potential in doing research on adjusting the urban land use tax relief to fossil fuel producers as appropriate.²³

Ghana: New Government Priorities Energize Social Reform

Ghana reallocated money previously spent on fuel subsidies to social priorities. In February 2005, Ghana implemented several strategies to improve the successful transition to a more market-driven energy economy. They used preliminary research and a communications campaign in conjunction with mechanisms that were intended to reduce political interference in fuel prices and policies to assist the poor. These strategies led to success.

Before implementing 2005 subsidy reforms, the Government of Ghana commissioned a study to assess the winners and losers from the subsidy and its removal. The independent poverty and social impact assessment, which revealed that the rich received the greatest benefit from the subsidy, formed a credible foundation for the government's communication campaign, which included announcement by the president, radio broadcasts from the minister of finance, advertisements in national newspapers and interviews with government and trade union officials.

The government also took several steps to financially assist the poor to compensate for higher energy prices resulting from de-subsidization by eliminating fees for state-run primary and secondary schools, increasing the number of public-transport buses, putting a price ceiling on public-transport fares, raising the daily minimum wage and starting programmes to spread electrification to rural areas.

These strategies, however, were not without challenges. Unforeseen consequences of the change in fuel prices included temporary fuel shortages, as suppliers hoarded fuel in advance of a price rise. The government did not maintain its commitment through these unexpected price hikes, showing that these policies are only as strong as the government behind them.²⁴

Indonesia: Rising Global Prices Threaten Energy Security

No longer a net exporter of oil, fossil fuel subsidies in Indonesia have placed greater financial burden on the Indonesian government. Gasoline prices in Indonesia are among the cheapest in Asia, but the costs on the supply side – US\$ 16 billion in

14 http://www.iisd.org/gsi/sites/default/files/ffs_india_czguide.pdf

15 http://www.iisd.org/gsi/sites/default/files/ffs_report_sustain_energy.pdf

16 http://www.iisd.org/gsi/sites/default/files/ffs_india_czguide.pdf

17 http://www.iisd.org/gsi/sites/default/files/ffs_india_czguide.pdf

18 http://www.iisd.org/gsi/sites/default/files/mapping_ffs.pdf

19 <http://www.instituteforenergyresearch.org/2011/11/23/iea-review-shows-many-developing-countries-subsidize-fossil-fuel-consumption-creating-artificially-lower-prices/>

20 <http://iea.org/media/weowebiste/2012/developments-energy-subsidies.pdf>

21 http://www.chinadaily.com.cn/bizchina/2012-11/07/content_15885890.htm

22 http://www.iisd.org/gsi/sites/default/files/mapping_ffs.pdf

23 http://priceofoil.org/wp-content/uploads/2012/06/FIN.OCL_Phasing_out_fossil-fuel_g20.pdf

24 http://www.iisd.org/gsi/sites/default/files/strategies_ffs.pdf

2010 – have ballooned the nation's budget deficit.²⁵ In May 2012, Indonesia announced additional policies to reduce subsidy expenditure, including tracking fuel usage by vehicle, banning state-owned and certain company vehicles from using subsidized fuels, substituting natural gas for kerosene and diesel, and reducing electricity use in state-owned buildings and for street-lighting.²⁶

The government's current reform plans also include a proposal to redirect the savings from subsidy reform to four main areas: cash transfers, public transport subsidies, increase in expenditure for productive activities and increase in expenditure for education.²⁷

However, these policies correspond with rising energy costs, and public demonstrations against the government's reform plans in late March 2012 have resulted in the government delaying a price increase for Premium, originally planned for 1 April 2012. The impact of the public's discontent with subsidy reform underlines the need for two areas of activity that are critical to building public support: a coordinated government communications strategy and ongoing consultations with stakeholders with the aim of designing effective support measures (especially for the poor, who may face the most adverse consequences to subsidy reform).²⁸

Iran: Cash Payments Reduce Impact on Consumers

In December 2010, Iran became the first major oil-exporting country to enact large subsidy cuts as a result of Western-led sanctions over its nuclear programme, which put its finances under pressure. Iran's reforms cut fuel and electricity subsidies on the supply side and shifted its focus to the demand side.

Wary of civil unrest sparked by its 2007 gas rationing, the Iranian government set a different course with these reforms. The legislature approved raising fuel prices while compensating citizens with monthly cash payments, and a public relations campaign delivered the message that subsidies promote waste and social injustice because the poorest citizens do not benefit as much as the wealthy.²⁹ With the reform, Iran increased gasoline prices by 400%, natural gas (>700%), diesel (1,000%), electricity (<300%) and water prices, virtually overnight.³⁰

Riots never materialized and the price increases removed US\$ 50-60 billion in fuel subsidies, distributed at least US\$ 30 billion in cash to citizens and freed US\$ 10-15 billion for investment in energy efficiency.³¹

Overall, Iran's subsidy reform is expected to result in a transitory slowdown in economic growth and temporary increase in the inflation rate, but it will most notably improve Iran's medium-term outlook by rationalizing domestic energy use, increasing export revenues, strengthening overall competitiveness and bringing economic activity in Iran closer to its full potential.³²

India: Strategy Stalled Due to Public Unrest

Historically, India has subsidized energy with the objective of protecting its consumers from international price volatility and providing energy access for its citizens, especially the poor.³³ Subsidies placed a heavy burden on the government's budget and India, followed closely by China, has the highest subsidies among importers, totalling US\$ 22 billion in 2010.³⁴ The petroleum sector is one of the most heavily subsidized energy sources

in India and the pricing of petroleum products has alternated between free market and regulated regimes. In 2010, the government deregulated the price of petrol; however, prices for diesel, PDS kerosene and domestic LPG continue to be regulated.³⁵

Released in March 2012, the Indian government's revised budget for the 2012-2013 fiscal year calls for a shift from subsidies to targeted cash transfers as a way to help the poor.³⁶ In July 2012, the minister of petroleum and natural gas announced that the government is also considering capping the number of subsidized LPG cylinders per household and a "partial decontrol" of diesel prices.³⁷

Although the Indian government has weighed the benefits of subsidy reform, progress remains slow due to valid concerns that raising diesel prices will have a significant impact on inflation and cascading effects throughout the economy (especially on sectors such as transport, agriculture and fisheries). The government has also established the Unique Identification Authority of India (IDAI) to develop the infrastructure for delivering direct transfers in place of kerosene subsidies.³⁸ However, progress in rolling out a national policy to design a cash transfer scheme has also slowed due to public backlash over raised prices.³⁹

Jordan: Balancing Subsidy Removal with Increasing Living Costs

Starting in 2005, Jordan implemented a relatively successful reform programme, which resulted in the gradual elimination of energy subsidies over a three-year period. This success followed previously unsuccessful reform efforts in the late 1980s and early 2000s, when large-scale demonstrations forced Jordan's government to reverse its reform plans.⁴⁰

25 http://news.nationalgeographic.com/news/energy/2012/06/pictures/120618-large-fossil-fuel-subsidies/#/energy-fuel-subsidies-indonesia_55103_600x450.jpg

26 <http://iea.org/media/weowebiste/2012/developments-energy-subsidies.pdf>

27 http://www.iisd.org/gsi/sites/default/files/ffs_actionplan_indonesia.pdf

28 http://www.iisd.org/gsi/sites/default/files/ffs_actionplan_indonesia.pdf

29 http://news.nationalgeographic.com/news/energy/2012/06/pictures/120618-large-fossil-fuel-subsidies/#/energy-fuel-subsidies-iran_55104_600x450.jpg

30 <http://www.undp.org/content/dam/undp/library/Environment%20and%20Energy/UNDP-EE-AHDR-Energy-Subsidies-2012-Final.pdf>

31 http://news.nationalgeographic.com/news/energy/2012/06/pictures/120618-large-fossil-fuel-subsidies/#/energy-fuel-subsidies-iran_55104_600x450.jpg

32 <http://www.undp.org/content/dam/undp/library/Environment%20and%20Energy/UNDP-EE-AHDR-Energy-Subsidies-2012-Final.pdf>

33 http://www.iisd.org/gsi/sites/default/files/ffs_india_czguide.pdf

34 http://news.nationalgeographic.com/news/energy/2012/06/pictures/120618-large-fossil-fuel-subsidies/#/energy-fuel-subsidies-india_55102_600x450.jpg

35 http://www.iisd.org/gsi/sites/default/files/ffs_india_czguide.pdf

36 <http://iea.org/media/weowebiste/2012/developments-energy-subsidies.pdf>

37 http://www.iisd.org/gsi/sites/default/files/ffs_india_qa.pdf

38 http://www.iisd.org/gsi/sites/default/files/ffs_india_guide_rev.pdf

39 http://news.nationalgeographic.com/news/energy/2012/06/pictures/120618-large-fossil-fuel-subsidies/#/energy-fuel-subsidies-india_55102_600x450.jpg

40 <http://www.undp.org/content/dam/undp/library/Environment%20and%20Energy/UNDP-EE-AHDR-Energy-Subsidies-2012-Final.pdf>

While Jordan's reform plan saw gasoline prices increase by around 10%, it did not prevent the size of energy subsidies from increasing as oil prices in international markets continued to rise. Jordan's energy price increases were dramatic (almost 65% for fuel oil to the power sector). In 2008, the government decided to remove most energy subsidies, resulting in even more price increases. However, to ensure that domestic prices align with those in international markets, the government set up a committee to set the price on a monthly basis based on a formula that reflects international prices and freight allowance. The implementation of this price adjustment mechanism helped reduce the risk of policy reversal.

As a result of these efforts, energy subsidies declined from 5.8% of GDP to 0.4% in 2010. This helped Jordan's government improve its public finances, but not without having adverse effects on households and industry. In response to these effects, Jordan's government invested considerably in measures aimed to protect low- and medium-income households. It raised public sector wages and pensions and low-income earners in the private sector received a separate compensation scheme.

In addition, the government set up lifeline tariff schemes for electricity and an upgraded food subsidy programme to offset the negative consequences of energy price increases. However, in 2011, public protests due to rising living costs as a result of subsidy reform pressured Jordan's government to reverse some of its earlier steps of reform and curb further fuel price rises. Jordan's case shows the importance of revising fuel prices within a broader context of energy pricing reform and liberalization of the entire energy sector, including the power sector.⁴¹

Nigeria: Failure to Communicate Results in Public Distrust of Reform

In January 2012, the Nigerian government abruptly ended its fossil fuel subsidies, causing gas prices to rapidly increase from US\$ 0.40 per litre to US\$ 0.86 per litre virtually overnight. Citizens feared that this abrupt end to fossil fuel subsidies was a ploy by the government to capture the country's resources and reacted violently through mass protests. The government's rationale for ending subsidies was based on the increasing burden of

subsidies on public finances. In 2011 alone, energy subsidies cost the country an estimated US\$ 8 billion, and the government expected this figure to increase even more in 2012 due to the rising cost of fuel.⁴² Shortly after these protests, the Nigerian government cut gasoline prices by one-third, partially reinstating the subsidy.⁴³

Properly communicating the costs of the subsidy and the benefits of the subsidy's removal could have smoothed the situation. Although plans have been drawn up to deregulate prices, there is little public confidence that reform would not open the door to increased opportunities for corruption.⁴⁴ In this case, subsidy reform was not effectively managed on the demand-side and lack of transparency aided concerns about corruption and incited public backlash.

Conclusions

These case studies demonstrate that, once in place, energy subsidies are extremely difficult to remove. Reform strategies are only as robust as the political will to carry through and uphold them during the transition period.

There is no single formula for success, and country circumstances and changing global conditions must be taken into account when devising ways to transition from subsidized markets to stronger and competitive global markets.

Nonetheless, the growing reliance and interconnectedness of global supply chains maintain international interest in reform. Properly designing and implementing an appropriate strategy to meet individual country needs is key to improving the chance of successful reform. The cases reflect that governments need to pay special attention to the systems and processes (research, communication campaigns and government committees, for instance) with which they decide, explain and monitor the process to de-subsidize the supply of energy to the general public.

Efforts may include independent regulation of fuel prices, automatic price-setting mechanisms and education of decision-makers and the public about the problems with government intervention in fuel pricing.⁴⁵

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41 <http://www.undp.org/content/dam/undp/library/Environment%20and%20Energy/UNDP-EE-AHDR-Energy-Subsidies-2012-Final.pdf>

42 <http://www.brookings.edu/research/opinions/2012/01/10-fuel-subsidies-nigeria-songwe>

43 <http://iea.org/media/weowebiste/2012/developments-energy-subsidies.pdf>

44 http://www.iisd.org/gsi/sites/default/files/ffs_nigeria_czguide.pdf

45 http://www.iisd.org/gsi/sites/default/files/strategies_ffs.pdf



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