FACT SHEET

Subsidy reforms

Key points

- ***Subsidies are an important fiscal instrument that governments use to stimulate certain vital sectors of the economy, but they can distort markets, harm the environment and inhibit the adoption of more advantageous alternatives.***

- ***Subsidies can be reformed through an environmental fiscal reform, which will redirect the allocated funds into investment towards increased resource efficiency, eco-efficiency innovation and poverty reduction.***

Subsidy reform explained

The Organisation for Economic and Co-operation and Development defines a subsidy as "a measure that keeps prices for consumers below market levels, or keeps prices for producers above market levels or that reduces costs for both producers and consumers by giving direct or indirect support."[1]

A subsidy may constitute direct or indirect grants or payments as well as pricing, tax or regulatory policies that are preferential to particular economic activities. Some subsidies are very evident, such as government payments to assist a business or industry, but other advantages that governments provide to producers or consumers can also be considered subsidies.[2] These government actions can include tax policies (special exemptions, allowances, deductions and credits), regulations, research and development, direct government market activities, government services (maintaining public ports and highways) and disbursements (such as grants).

The share of fuel subsides differ from country to country. In developing countries, fuel subsidies to households tend to constitute a large portion of government spending. As of 2009, 22 per cent of government expenditures in Malaysia for example were subsidies, with petrol subsidies alone taking up 12 per cent.[3]

Environmental fiscal reforms (EFR) can help governments phase out certain subsidies, particularly the ones that result in higher degrees of consumption or production of environmentally harmful products and services. The phase-out can in turn increase resource efficiency of the economy, which can further be augmented by redirecting the generated budget revenues (liquidity) to environmentally beneficial and green growth stimulating activities as well as to creating social benefits and increased employment.

How it works

Governments usually initiate subsidy reforms in times when the costs of certain vital natural resources, such as fossil fuels, rise to the extent that subsidizing their use becomes unfeasible. There are some important questions and steps to be considered when initiating the subsidy review, which should include a thorough analysis of whether subsidies benefit the most disadvantaged as intended, what market distortions need to be corrected, impact of the subsidy phase-out on the disadvantaged and on the key sectors of the economy, compensatory measures and garnering public support.

Review of direct benefits of subsidies

[1] Organization for Economic Co-operation and Development, *Improving the Environment Through Reducing Subsidies* (Paris, 1998).

[2] There are more than 250 measures that support fossil fuel production and use in OECD countries, according to the Organisation for Economic Co-operation and Development, *Inventory of Estimated Budgetary Support and Tax Expenditures for Fossil Fuels* (Paris, 2012).

[3] Munan Heidi, Foo Yuk Yee, *Malaysia*. (New York, Benchmark Books, 2001) pp. 28, 36–37.

Some subsidies are designed and implemented with a primary objective of alleviating poverty and enhance the livelihoods of the low-income households and individuals by easing their access basic utilities to ensure the minimum standards of their living. For instance, kerosene, electricity and fertilizer subsidies are intended to benefit poor households.

In reality, however, the effects of some of the subsidies are suboptimum, and they may be a costly and inefficient way to achieve such goals, often resulting in environmental costs that negate their supposed benefits. For instance, the rural poor in many a developing countries largely lack access to the centralized modern energy supply; subsidies on water prices or chemical fertilizers for agriculture often tend to benefit large corporate farming rather than small farmers as intended.

Based on a recent International Energy Agency (IEA) study of selected economies, only 8 per cent of fossil fuel subsidies in 2010 actually benefited the poorest 20 per cent of the population.[4] The top 20 per cent of households received on average approximately 42 per cent of the total energy subsidies.[5] An International Monetary Fund study (2010) found that as much as 80 per cent of the benefits of the gasoline subsidies worldwide went to the richest 40 per cent of households.[6]

A similar pattern was found in many countries in the region. In Indonesia, for example, more than 70 per cent of fossil fuel subsidies directly benefited the 40 per cent top-income households, while to the most disadvantaged, constituting 40 per cent of the lowest-income households, only 14 per cent of the subsidies distribution could be attributed. The subsidies stimulated robust use of private vehicles and much less was attributed to lowering the price of kerosene used in poor households.[7] The studies also reveal that fossil fuel subsidies have had a strong impact on widening the gap between rich and poor.

Review of costs and market distortion implications of subsidies

Subsidies often stimulate higher degrees of consumption or production of environmentally harmful products and services than would occur in their absence, causing damage not only to the environment but to the economy as well. Specifically, they can result in the overuse of fossil fuels and extraction of natural resources at levels that are not sustainable and consequently substantial increase of pollution, harmful emissions and waste.[8]

In the current pricing mechanism, the costs for abatement of these environmentally harmful and undesirable activities are not being fully internalized in the production costs and remain unaccounted. The higher costs of the environmental damages are eventually paid by the end consumer.

One such review of the market distortions caused by subsidies (favouring fossil fuel-based energy production processes) shows considerable impact on the competiveness of renewable energy systems. The IEA estimates that in 2010, worldwide fossil fuel subsidies reached US$409 billion, representing a significant portion of the GDP – often averaged to 1–2 per cent of the GDP (PPP) and resulted in stimulating the consumption and production of fossil fuels. Alarmingly, fossil fuel subsidies are expected to grow to US$660 billion by 2020, equivalent to 0.7 per cent of global GDP.

Renewable energy production, however, receives only US$66 billion of such subsidies in the form of incentives, tax breaks and rebates, which are not enough to reduce their costs and stimulate wider use.[9] This constitutes a missed economic opportunity, especially for developing countries in the Asia-Pacific region.

[4] International Energy Agency, *World Energy Outlook 2011* (Paris, 2011). The findings are based on a survey of 11 countries including Angola, Bangladesh, China, India, Indonesia, Pakistan, Philippines, South Africa, Sri Lanka, Thailand and Viet Nam. The survey does not include subsidies specifically allocated to extend access to basic energy services.

[5] Ramón E. López, Vinod Thomas, and Yan Wang, *The Effects of Fiscal Policies on the Quality of Growth* (Washington, D.C., The World Bank, 2010), p. 9.

[6] David Coady and others, Petroleum Product Subsidies: Costly, *Inequitable and Rising* (Washington, D.C., International Monetary Fund, 2010).

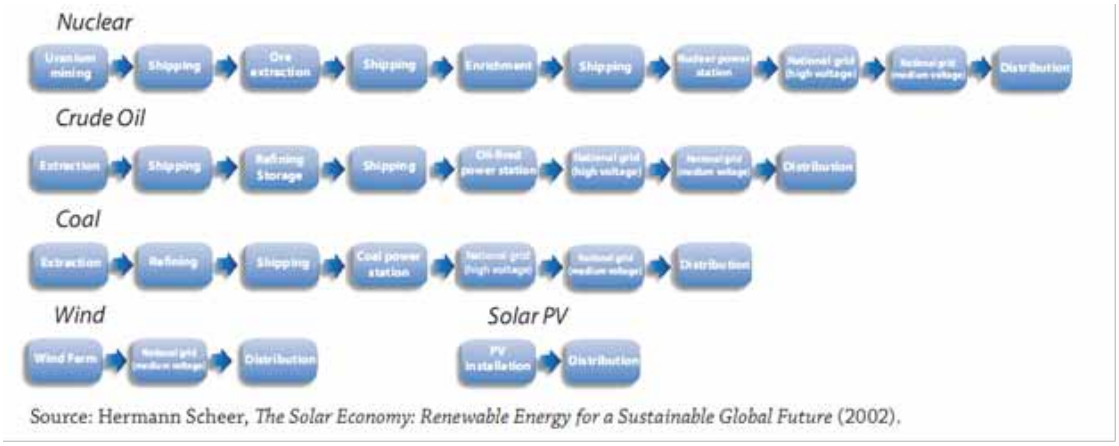
[7] Republic of Indonesia, Effectiveness of Unconditional Cash Transfer of 2008 (Jakarta, Deparemen Sosial, Ministry of Social Welfare 2008), p.15 from A. A. Yusuf and B. P. Resosudarmo, "Mitigating distributional impact of fuel pricing reform: The Indonesian experience", *ASEAN Economic Bulletin* (2008), vol. 25, no. 1, pp. 32–47, a modelling shows that richer households tend to experience a greater increase in consumer prices and bigger fall in their income as a result of reductions in fuel subsidies.

[8] These result in losses to the GDP.

[9] International Energy Agency, *World Energy Outlook* (Paris, IEA and OECD, 2010g).

In the case of China, for example, which has emerged as the world's producer of solar photovoltaic (PV) systems, 95 per cent of this production in 2007 was for export.[10] Currently shrinking European markets are creating an oversupply of PV solar systems and a considerable price drop, by 30–40 per cent. Boosting local consumption of such solar systems would create the desired economy of scale to make prices competitive with those of conventional energy production systems. Solar energy systems, for example, tend to create faster investment returns because of lower risks in a short supply chain, as illustrated in the following figure.

Figure 1: Comparison of supply chains for electricity supply for different energy sources



Source: Hermann Scheer, *The Solar Economy: Renewable Energy for a Sustainable Global Future* (London, Earthscan Publications Ltd., 2002).

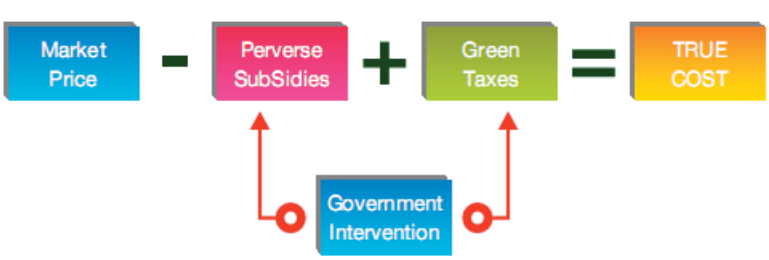
Additional expected benefits would include reduction and elimination of budgetary losses from subsidizing traditional energy production facilities, new green jobs, improved domestic energy and environmental security, increased investments in green technologies and innovation, and economic growth

Strengths of subsidy reform

Subsidy reform as part of the environmental fiscal reform in the context of low carbon green growth is comprised of two parts: 1) **Phasing out environmentally harmful subsides**, and; 2) **Increasing subsides for energy efficiency, clean and renewable energies and other activities related to the greening of the economy.**

Key benefits of subsidy reforms include following:

- **Provides excellent opportunity to correct market failure:** Redirecting subsidies from environmentally harmful activities and products, such as pollution, carbon emissions, resource inefficiency, overdependence on non-renewable fossil fuels to more environment-friendly ones (such as renewable and other clean and efficient energy sources), constitute an important part of the EFR. The following simplified diagram illustrates the process.



[10] Based on data for exports and imports in 2007.

- **Creates significant resource efficiency gains:** Removing fossil fuel subsidies, which lock countries into an inefficient infrastructure development pattern for long periods of time, would considerably reduce the consumption of these resources, would contribute heavily towards reducing carbon emissions and would create additional incentives for investments in renewable energy infrastructure. The Potential of carbon emission reduction through robust renewable energy subsidy policies are estimated to be 3.4-3.5 Gt by the year 2035 compared with the average emission level in 2009, yielding fossil-fuel import savings of US$350 billion globally.[11]

- **Generates revenue to finance green growth:** Removing environmentally harmful subsidies can potentially create substantial budgetary room for investments on renewable and other alternative energies as well as green technologies. A recent study by the McKinsey Global Institute finds that yearly $260 to $360 billion (about 60-90 per cent of the current fossil fuel subsidies) would be sufficient over the next two decades in financing to achieve a 450 ppm pathway by shifting from high-carbon to low-carbon powered economy through renewable energies, more extended use of biofuels in road transport and other carbon emission reduction measures. The same paper indicates that ensuring the minimum energy access for all (by providing 250 to 500 kilowatt hours per person per year) would require about $50 billion a year during the same period, which accounts for only 12 per cent of the current fossil fuel subsidies[12]. The process of greening an economy is expected to generate more employment ("green jobs"), spur innovations as well as improving domestic energy and environmental security.

BOX 1: Emissions reductions attributed to removal of fossil fuel subsidies

An IEA study indicates that global greenhouse gas emissions would be reduced by 8 per cent compared with business-as-usual levels in 2050 if all 37 countries in the IEA subsidy database (36 countries plus Uzbekistan) phased out fossil fuel subsidies between 2013 and 2020.[13] Analysis by the OECD also suggests that phasing out fossil fuel subsidies by 2020 could reduce greenhouse gases by more than 15 per cent in 2050 in India and more than 5 per cent in China.[14]

Challenges to subsidy reform

- **Income regressive impacts.** Subsidy reform may lead to negative impacts on the livelihoods of the population with lowest income and means, which will weaken the legitimacy and sustainability of the reform. Reforms need to be gradual in pace and to address the distributional impacts, based on a careful assessment of economic and social impacts, and supported with rigorous public information campaigns for securing public understanding, support and political feasibility.

- **Lack of supporting regulatory measures.** Subsidy reforms need to be gradually put in place while firmly based on a rigorous impact analysis and enforced in tandem with supportive policy and regulatory measures that will allow compensation of possible direct and sudden impacts on the industrial competitiveness and on the livelihoods of the poor.

[11] Organisation for Economic Co-operation and Development, Farmland Conversion – *The Spatial Implications of Agricultural and Land-use Policies* (Paris, 2009c). (Paris, International Energy Agency and OECD, 2011).

[12] Mckinsey Global Institute, Mckinsey Sustainability & Resource Productivity Practice, Resource Revolution: Meeting the world's energy, materials, food and water needs. November 2011.

[13] J. Burniaux and J. Chateau, "Mitigation Potential of Removing Fossil Fuel Subsidies: A General Equilibrium Assessment", OECD Economics Department Working Papers, No. 853 (Paris, OECD Publishing, 2011). Available from http://dx.doi.org/10.1787/5kgdx1jr2plp-en (accessed 17 March 2012).

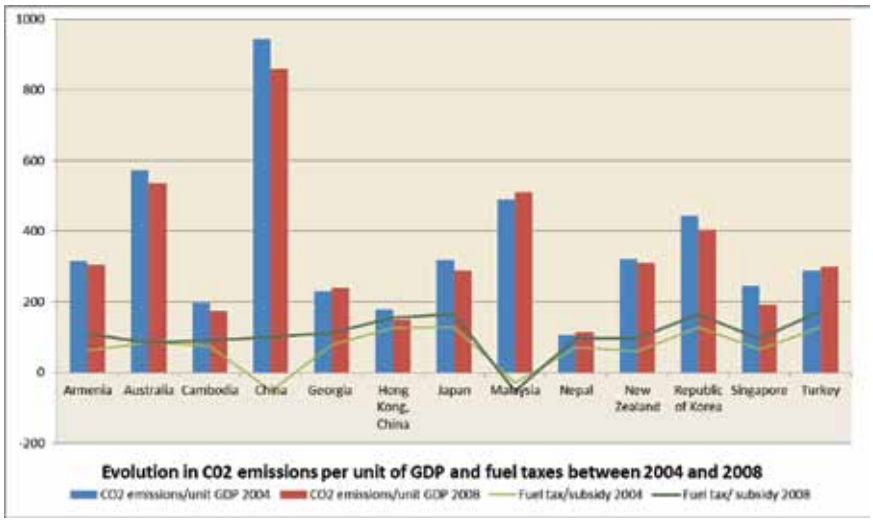
[14] Organisation for Economic Co-operation and Development, *Interim Report of the Green Growth Strategy: Implementing our commitment for a sustainable future* (Paris, 2010).

Recent Initiatives in developing countries in the Asia-Pacific region

Countries are beginning to understand that reforming environmentally harmful subsidies is a critical step toward a greener economy. In 2009, the G-20 agreed to gradually phase out fossil fuel subsidies. In Asia and the Pacific region, countries are also moving toward phasing out fossil fuel subsidies.

Between 2004 and 2008, many governments in the region decided to shift from fuel subsidies to fuel taxes as a strategy to address the impact of rising fuel prices. Such EFR policies have resulted in increased budget liquidity and may have contributed to reducing CO_2 emissions per unit of GDP (figure 2).

Figure 2: Evolution in C02 emissions per unit of GDP and fuel taxes in selected countries in the Asia-Pacific region, 2004–2008



Source: Based on data from the German International Development Agency (GIZ), *International Fuel Prices 2009* (Berlin, 2009).

Policymakers in **Indonesia** started a reform of the fossil fuel subsidies; in 2005, concern over the increasing pressure that fuel subsidies were placing on the state budget led the Government to increase fuel prices in March and then again in October by an average of 29 per cent and 114 per cent, respectively. This reduced the state budget deficit by US$4.5 billion in 2005 and US$10 billion in 2006.[15] The potential negative impact of the reform on the poor was mitigated through a **direct cash transfer programme**, which reached 19.2 million households and cost around US$2.3 billion, less than a quarter of the savings in 2006 alone.[16]

The **Malaysian** Government also introduced reforms of energy subsidies in 2008, shifting to cash rebates, windfall taxes and expansion of the social safety net. This came after expenditure on electricity and petroleum subsidies grew to US$14 billion, or approximately 4 per cent of GDP, during the period of rising oil prices in the late 2000s. Further cuts to gasoline, diesel and LPG subsidies were made in July 2010.

Similarly, lawmakers in the **Islamic Republic of Iran** introduced in 2010 the **Targeted Subsidy Reform Act**, which resulted in a twenty-fold increase in domestic energy and agricultural prices. The reform resulted in savings of US$50–$60 billion in one year. Half of this amount was redistributed to households, while US$10–$15 billion was advanced to enterprises to finance investment in restructuring aimed at reducing energy intensity.[17]

[15] Robert Bacon and Masami Kojima, *Coping with Higher Oil Prices* (Washington, D.C., The World Bank, 2006).

[16] ibid.

[17] Dominique Guillaume, Roman Zytek and Mohammad Reza Farzin, "Iran: The Chronicles of the Subsidy Reform", IMF Working paper WP/11/167 (Washington, D.C., International Monetary Fund, 2011).

Box 2: Current status of Indonesia's fuel subsidy reform

Indonesia's Medium-Term Plan in 2010 pledged to a reduced spending on energy subsidies by 40% by 2013 and eliminates subsidies by 2014 In February 2011, however, Indonesia postponed a restriction on subsidies for fuel for private cars, a move that could end up costing the Government 6 trillion rupiah.[18] This measure was initiated to substantiate the pledge of the Government to eliminate fossil fuel subsidies in the medium term and completely eliminate them by 2014. The path to zero subsidies has not been without its bumps.

Even the restriction was considered ineffective to some because it was limited in scope; motorcycles were to be exempt from the subsidy cut, even though there are approximately ten times as many motorcycles as there are cars in Indonesia.[19] A recent trend of increasing oil price strengthens a perverse incentive to sell fuels subsidized by the Government to industries and other illegal channels: in 2011, this portion reportedly reached between 10 and 15 per cent.[20] In December 2011, the quota of subsidized fuels reportedly would increase by between 500,000 and 1,000,000 kilolitres.[21]

In addition, the electricity subsidy increased from 65.6 rupiah to 91 trillion rupiah (as of January 2012). Due in part to the subsidized and state controlled price of electricity, the state utility PLN has had difficulty in increasing energy infrastructure and supplying electricity to meet the increasing need. This problem, analysts find, threatens to slow Indonesia's economic growth.[22] A concern is raised that in the projected steady increase of oil prices, the current practice of fuel and energy subsidies in Indonesia is likely to further weaken fiscal conditions of the Government while diverting public expenditure from areas requiring more investment, such as health, education and infrastructure building.

[18] Rangga D. Fadillah and Esther Samboh, "15 Per cent of Subsidized Fuel Sold to Industries", *The Jakarta Post*, May 31 2011. Available from www.thejakartapost.com/news/2011/05/31/15-percent-subsidized-fuel-sold-industries.html (accessed 17 March 2012).

[19] Francis Kan, "Analysis: Power Woes Could Trip Indonesia's Economic Surge", *Reuters*, 22 December 2011. Available from www.reuters.com/article/2011/12/23/us-indonesia-energy-bottlenecks-idUSTRE7BM06F20111223 (accessed 17 March 2012).

[20] Rangga D. Fadillah and Esther Samboh, "15 Per cent of Subsidized Fuel Sold to Industries", *The Jakarta Post*, May 31 2011. Available from www.thejakartapost.com/news/2011/05/31/15-percent-subsidized-fuel-sold-industries.html (accessed 17 March 2012).

[21] *The Jakarta Post* , "Govt to Add to Subsidized Fuel by Up To 1m kl", 15 December 2011. Available from www.thejakartapost.com/news/2011/12/15/govt-add-subsidized-fuel-1m-kl.html (accessed 17 March 2012).

[22] Francis Kan, "Analysis: Power Woes Could Trip Indonesia's Economic Surge", *Reuters*, 22 December 2011. Available from www.reuters.com/article/2011/12/23/us-indonesia-energy-bottlenecks-idUSTRE7BM06F20111223 (accessed 17 March 2012).