Getting rid of Fossil-fuel Subsidies is a Triple-win Solution

FATIH BIROL calls for the removal of fossil fuel subsidies

Fossil-fuel subsidies remain commonplace in many countries. They result in an economically inefficient allocation of resources and market distortions, while often failing to meet their intended objectives. Moreover, volatile energy markets and the prospect of higher fossil fuel prices mean that fossil-fuel subsidies threaten to be a growing liability to state budgets. This prospect has created a strong impetus for reform, strengthened by other associated benefits. But fossil-fuel subsidy reform is notoriously difficult as the short-term costs imposed on certain groups of society can be very burdensome and induce fierce opposition. If removing these subsidies were easy, it would probably already have happened.

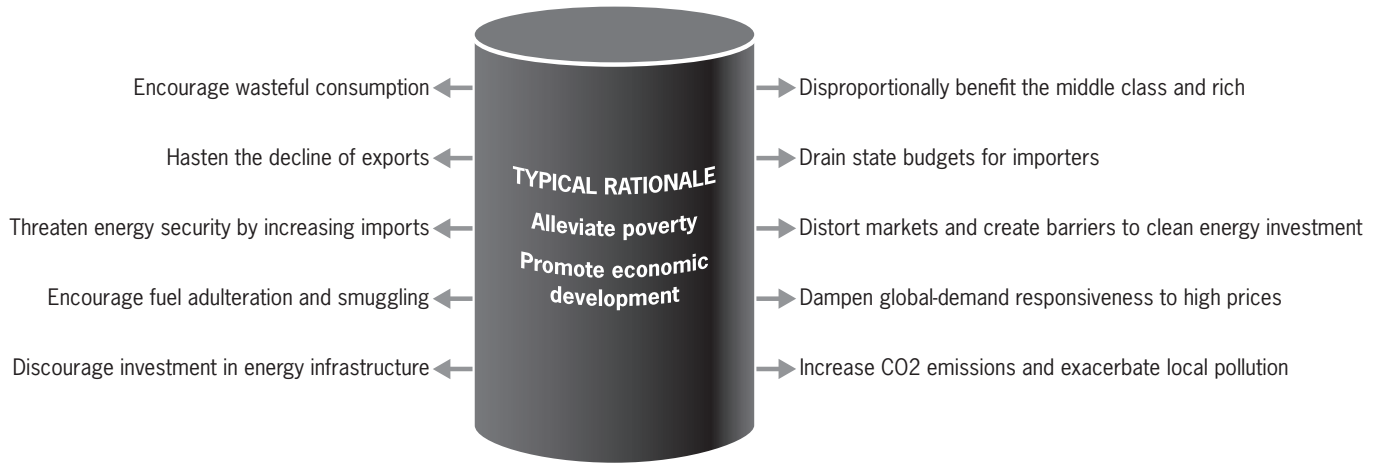
Fossil-fuel Subsidies have Unintended Consequences

The most common justifications for fossil-fuel subsidies include alleviating energy poverty, redistributing national resource wealth, or promoting economic development and diversification (Figure 1). In recent years there has been growing momentum to phase out fossil-fuel subsidies as many were seen to be failing to serve effectively the aforementioned objectives. While also, in a period of persistently high prices, imposing unsupportable financial burdens on countries importing energy at world prices and selling it domestically at lower, regulated prices.

A related motivation for phasing out fossil-fuel subsidies stems from their adverse impact on investment resources. Where fossil-fuel consumption is subsidised through consumer price controls, the effect, in the absence of offsetting compensation payments to companies, is to reduce energy companies' revenues, which discourage investments in energy infrastructure. This problem is particularly prevalent within the electricity sector of many developing countries, but also exists in the oil, natural gas and coal sectors.

Subsidies can encourage wasteful

Figure 1: Potential Unintended Effects of Fossil-fuel Consumption Subsidies



Source: World Energy Outlook 2011

consumption, thereby leading to faster depletion of finite energy resources, and can also discourage rationalisation and efficiency improvements in energy-intensive industries. There is a strong empirical link between low energy prices and excessive consumption. Extremely high rates of electricity consumption in many developing economies such as in parts of the Middle East can be shown to derive from cheap electricity tariffs rather than solely from demography or economic growth. The resulting subsidy, in certain cases, has over-burdened government resources at the expense of social and economic expenditures.

Fossil-fuel subsidies exacerbate energy price-volatility on global markets by dampening normal demand responses to changes in international prices. For example, the first half of 2008 saw robust demand despite dramatic increases in crude oil prices. This has now been attributed in part to artificially low energy prices in many countries, which blunted market signals. A survey of 131 countries carried out by the International Monetary Fund (IMF) found that in 2008 around two-thirds of countries failed to fully pass through the sharp rise in international prices for gasoline and one-half failed to pass through the full increase in the cost of diesel. Cutting subsidies, by shifting the burden of high prices from government budgets to individual consumers, would lead to a much faster and stronger demand response to future changes in energy prices and free up government revenues for other urgent needs.

Fossil-fuel subsidies can encourage fuel adulteration, and the substitution of subsidised fuels for more expensive fuels. In some countries, subsidised kerosene intended for household cooking and lighting is diverted for unauthorised use as diesel fuel due to wide price differentials. Fuel smuggling can also arise, since an incentive is created to sell subsidised products in neighbouring countries where prices are unsubsidised and, therefore, higher. This has been an issue for years in many parts of the world, particularly in southeast Asia, Africa and the Middle East. The effect in subsidising countries is a substantial financial transfer to smugglers, while recipient countries experience losses from uncollected taxes and excise duties, due to reduced sales in the legitimate market. Removing subsidies would eliminate incentives both to adulterate fuels and to smuggle them across borders.

Fossil-fuel subsidies are mostly counterproductive in reaching local and global environmental goals. Subsidised energy prices dampen incentives for consumers to use energy more efficiently, resulting in higher consumption and greenhouse-gas emissions than would otherwise occur. Furthermore, fossil-fuel subsidies undermine the development and commercialisation of renewable energy and other technologies that could become more economically attractive.

Fossil-fuel Subsidies and their Costs

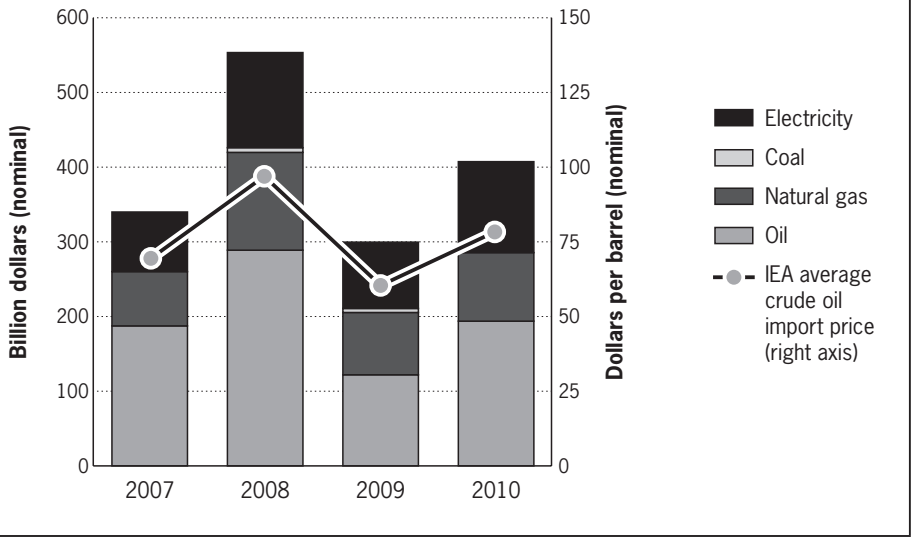
Within the framework of the World Energy Outlook (WEO), the IEA has been measuring fossil-fuel subsidies in a systematic and regular fashion for more than a decade. Its analysis is aimed at demonstrating the impact of fossil-fuel subsidy removal for energy markets, climate change and government budgets. The IEA's latest estimates indicate that fossil-fuel consumption subsidies worldwide amounted to $409 billion in 2010, up from $300 billion in 2009, with subsidies to oil products representing almost half of the total (Figure 2). The magnitude of energy subsidies fluctuates from year-to-year with changes in world prices, domestic pricing policy, exchange rates and demand. Of these factors, movements in world prices typically have by far the greatest impact on variations in subsidy levels. The series of estimates from 2007 to 2010 demonstrate clearly the risk to which governments are exposed by regulated domestic prices in international energy markets subject to unpredictable price fluctuations.

Today, fossil-fuel subsidies remain most prevalent in the Middle East, amounting in 2010 to $166 billion, or 41 percent of the global total. At $81 billion, Iran's subsidies were the highest of any country, although this figure is expected to fall significantly in the coming years if the sweeping energy-pricing reforms that commenced in late 2010 are implemented successfully and prove durable. Two leading oil and gas exporters – Saudi Arabia and Russia – had the next-highest subsidies in 2010. While the magnitude of fossil-fuel subsidies in 2010 was also large in China and India, they are considerably smaller when viewed as a share of their economic output or relative to their huge populations, amounting to less than 0.5 percent of GDP and $20 per person in both cases.

Fossil-fuel Subsidies are not Benefiting the Poor

One common justification for fossil-fuel subsidies is that they are needed to help the poor gain or maintain access to energy services essential to basic living standards. However the IEA's *WEO-2011* estimates that only 8 percent of the $409 billion spent on fossil-fuel subsidies in 2010 was distributed to the poorest 20% of the

Figure 2: Global Economic Cost of Fossil-fuel Consumption Subsidies by Fuel



Source: World Energy Outlook 2011

population. (This finding does not include subsidies specifically provided to extend access to basic energy services.) Compared to other fuels, subsidies to kerosene tend to be best targeted on the poor, despite its tendency to be sold in the black market. In 2010, nearly 15 percent of the kerosene subsidies in the countries analysed reached the lowest income group; subsidies to LPG, gasoline and diesel benefited the poor least, with only 5–6 percent going to the lowest group. Subsidies to electricity and natural gas were in the middle of the range, with shares of 9 and 10 percent disbursed to the lowest group (Figure 3).

These results demonstrate that subsidising fossil fuels is an inefficient method of providing assistance to the poor. Fossil-fuel subsidies tend to be regressive disproportionately benefiting higher income groups that can afford higher levels of fuel consumption. Poor households may not have access to subsidised energy directly, lacking a connection to electricity or natural gas and owning no vehicle. The same level of financial support could be distributed more efficiently to low-income households at a lower cost. In general, social welfare programmes are a more effective and less distortionary way of helping the poor than energy subsidies.

Phase out Fossil-fuel Consumption Subsidies for a Healthy Energy Economy

Reforming inefficient energy subsidies would have a dramatic effect on supply and demand in global energy markets. The *WEO-2011* estimates that a universal phase-out of all fossil-fuel consumption subsidies by 2020 – ambitious though it may be as an objective – would cut global primary energy demand by nearly 5 percent by 2035, compared with a baseline in which subsidies remain unchanged. Oil demand savings would be equal to 4.4 million barrels per day. Phasing out fossil-fuel consumption subsidies could represent an integral building block for tackling climate change: their complete removal would reduce carbon dioxide emissions by 5.8 percent, or 2 Gigatonnes, in 2020. Conversely without further subsidy reform, the IEA estimates that the total cost of fossil-fuel consumption subsidies would reach $660 billion in 2020 (year-2010 dollars).

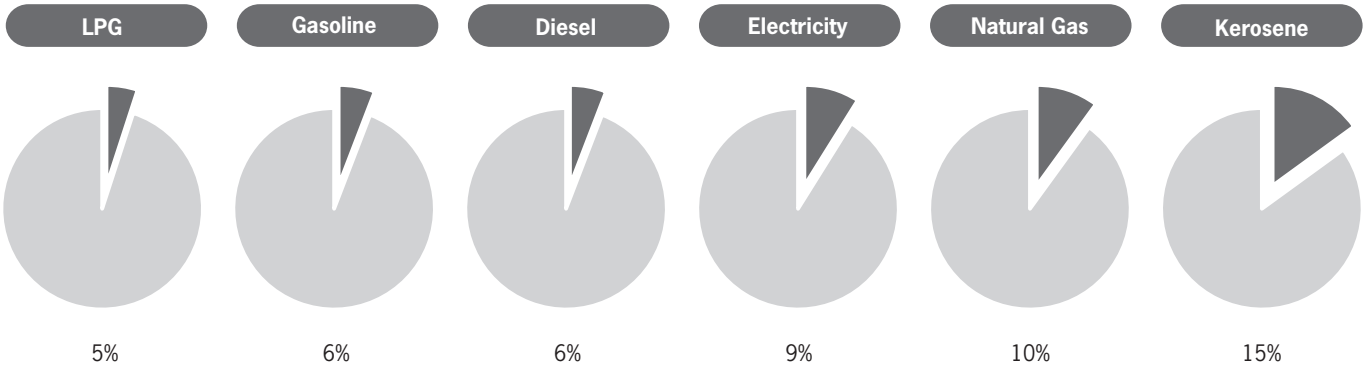
Curbing the growth in energy demand via subsidy reform has several important energy security implications. In net-importing countries, lower energy demand would reduce import dependence and thereby spending on imports. For net-exporting countries, removing subsidies would boost export availability and earnings. For all countries, it would also improve the competitiveness of renewable energy in relation to conventional fuels and technologies, further diversifying the energy mix. Lower energy demand would also alleviate upward pressure on international energy prices, while the elimination of subsidies would make consumers more responsive to price changes, which should contribute to less volatility in international energy markets.

Signs of Progress but much more Remains to be Done

In September 2009, G-20 leaders, gathered at the Pittsburgh Summit, committed to 'rationalize and phase out over the medium term inefficient fossil fuel subsidies that encourage wasteful consumption'. In November 2009, APEC leaders meeting in Singapore made a similar pledge, thereby broadening the international commitment to reform. Since making these commitments, many G-20 and APEC member economies have publicly identified inefficient fossil-fuel consumption and production subsidies and outlined plans for their removal. Many other countries outside of the G20 and APEC groupings have also taken steps to bring their energy prices in line with international levels. In total, of the 37 economies identified in the *WEO-2011* global survey as having fossil-fuel consumption subsidies, at least 15 have either implemented reforms or announced related plans since the beginning of 2010. This includes a number of energy-rich exporting countries that have moved to phase out subsidies, or expressed interest in doing so, concerned not only by the high cost of the subsidies but also the resulting low efficiency in domestic energy use: the consequences can be sharp domestic demand growth and reduced availabilities for export.

While the above-mentioned reforms represent an encouraging start, much work remains to be done in order to realise the full extent of benefits from subsidy reform. And in this period of persistently high energy prices and with growing concerns about climate change and mounting risks to energy security, it is imperative that countries now follow through on their commitments by implementing subsidy reforms that are well-designed and durable.

Figure 3: Share of Fossil-fuel Subsidies Received by the Lowest 20 Percent Income Group by Fuel, 2010



Source: World Energy Outlook 2010

Note: Countries surveyed were Angola, Bangladesh, China, India, Indonesia, Pakistan, Philippines, South Africa, Sri Lanka, Thailand and Vietnam.