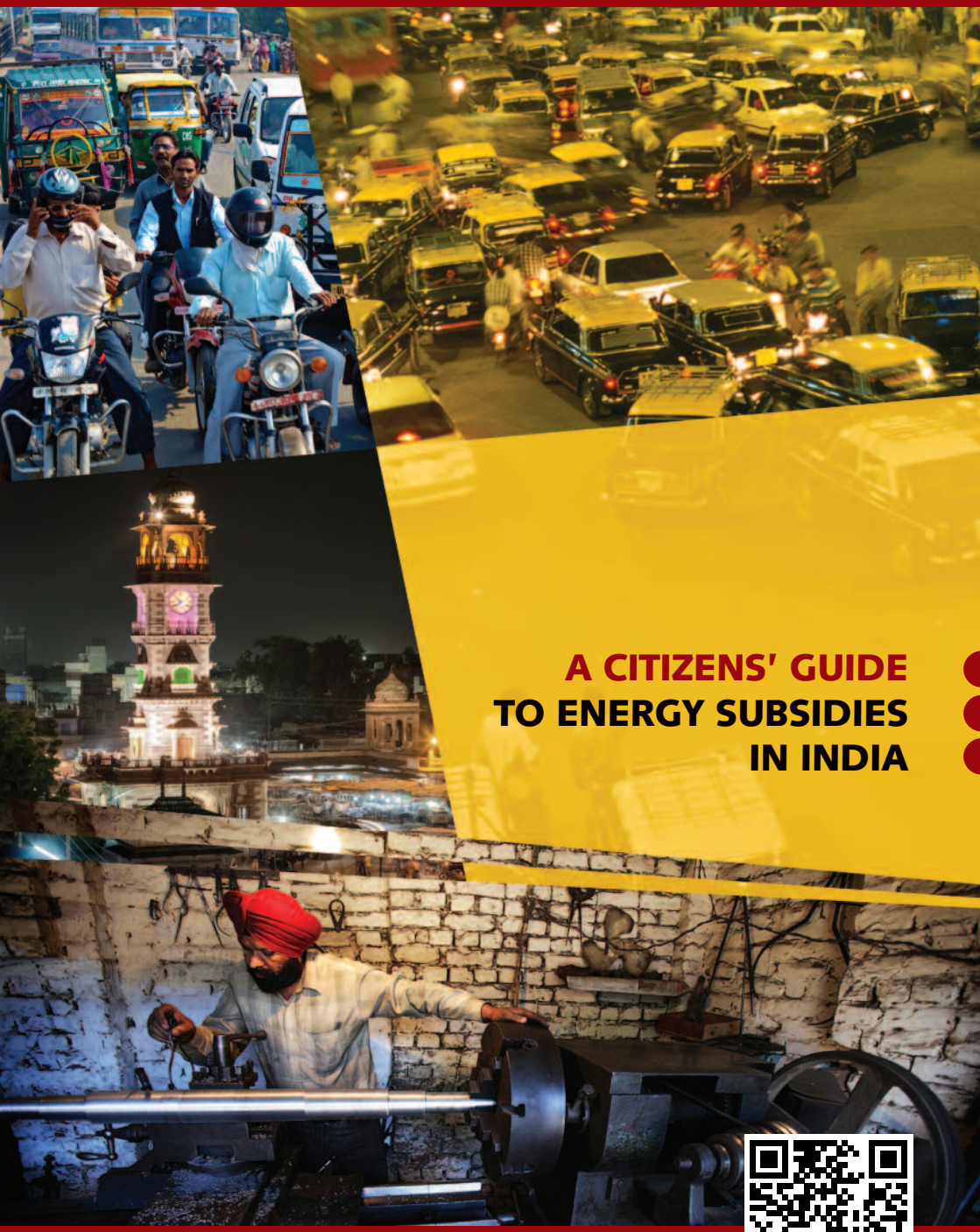

# A CITIZENS' GUIDE TO ENERGY SUBSIDIES IN INDIA

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# Introduction

Subsidies are one of the most powerful policy tools in the hands of the government. In India, as elsewhere, they have been used for decades to achieve a range of economic, social and environmental objectives. Indeed, one of the most important and challenging responsibilities of a government is allocating financial resources to achieve public good.

There are a number of criteria by which a subsidy policy may be assessed. Is it serving a public, rather than a private interest? Is it achieving its intended objective efficiently? Does it have any negative, unintended consequences, such as corruption or environmental degradation? Only when citizens are in possession of this information can they make an informed decision on whether their government is spending money wisely.

The focus of this guide is energy subsidies in India. In addition to forming a large part of government expenditure in India, subsidies for energy have a tremendous impact on the lives of citizens. At the most immediate level, these subsidies affect how much people pay for energy. But digging deeper reveals that they have a profound effect on the environments in which people live and the economies in which they earn their living.

# 1

# A BRIEF OVERVIEW OF INDIA'S ENERGY SUBSIDIES

# 1. A Brief Overview of India's Energy Subsidies

India has historically subsidized energy with the objective of protecting its consumers from international price volatility and providing energy access for its citizens, especially the poor. However, energy subsidies place a heavy burden on government budgets, while often failing to reach their targeted beneficiaries.

The petroleum sector is one of the most heavily subsidized energy sources in India. The pricing of petroleum products has changed over time, alternating between free market and regulated regimes. Until 2010, the central government controlled the prices of petrol, diesel, kerosene[1] and liquefied petroleum gas (LPG)[2]. In June 2010, the Indian government deregulated the price of petrol. However, prices for diesel,[3] PDS kerosene and domestic LPG continue to be regulated. Even in the case of petrol, OMCs can only change prices every fortnight, and only after seeking approval from the government. In contrast to fuel subsidies, electricity subsidies in India are disbursed by the state governments, at considerable cost to state budgets.

## 1.1 What Is an Energy Subsidy?

A number of definitions of subsidies exist. One internationally agreed definition has been adopted by the World Trade Organization (WTO), which identifies four main types of subsidy:[4]

(a) Direct transfer of funds (e.g., grants, loans, and equity infusion), potential direct transfers of funds or liabilities (e.g., loan guarantees);

(b) Government revenue that is otherwise due is foregone or not collected (e.g., fiscal incentives such as tax credits);

(c) Provision of goods or services other than general infrastructure, or purchase of goods; and

(d) Income or price support.

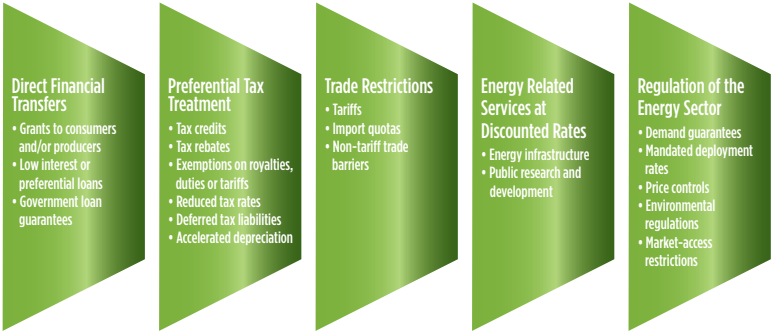
[ India has historically subsidized energy with the objective of protecting its consumers from international price volatility and providing energy access for its citizens, especially the poor. ]

As for subsidies on energy in particular, the International Energy Agency (IEA) has a widely accepted definition (IEA, 1999):

"Any government action that concerns primarily the energy sector that lowers the cost of energy production, raises the price received by energy producers or lowers the price paid by energy consumers."

The different forms that energy subsidies can take are shown in Figure 1.

## Figure 1 » Examples of Energy Subsidies




Source: GSI & IESR (2011)

Subsidies for energy can be broadly classified as producer subsidies or consumer subsidies. Producer subsidies are provided to companies to encourage investment and increase output. Consumer subsidies, as the name implies, support the consumption of energy, by lowering prices at which energy products are sold. This guide looks only at subsidies for energy consumption.

## 1.2 Why Subsidize Energy?

Energy subsidies aim to improve energy access by making prices more affordable, shielding domestic consumers from international price volatility, and supporting energy-intensive industries. Although energy subsidies do have the potential to generate benefits in the short term by addressing these goals, they have been criticized for leading to unintended adverse consequences. These consequences—and the challenges in addressing them—are discussed in detail in this guide.

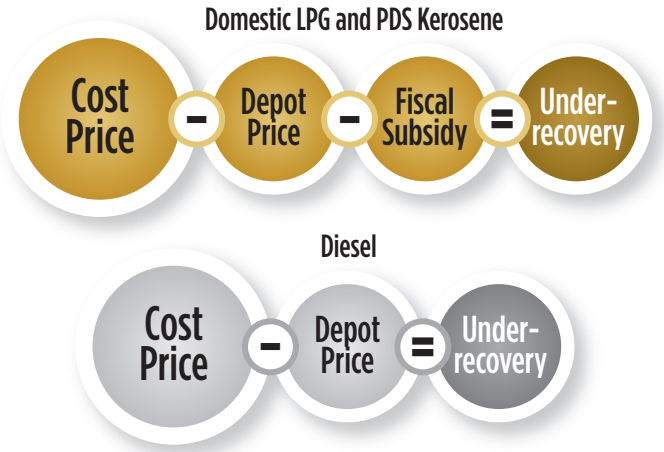
## 1.3 Energy Subsidies in India: A snapshot

In India, subsidies are provided for petroleum products and electricity. These products are retailed at prices that are often kept artificially low compared to market rates[5]. While subsidies on both electricity and petroleum products are provided in the form of lower prices for the final product, the methods of subsidy delivery and the amount of the subsidy itself varies widely across the different products. The following sections take a closer look at subsidy regimes for petroleum products and electricity.

### 1.3.1 Petroleum Products

Three petroleum products, namely PDS kerosene, domestic LPG and diesel are sold for less than international market prices[6], with the government providing a fiscal subsidy on LPG and kerosene. The subsidy, however, covers only a part of the difference between the cost price (including marketing costs) and the selling price of these three petroleum products, thereby resulting in "under-recoveries" for the OMCs. Under-recoveries are calculated as the difference between the cost price and the regulated price at which petroleum products are finally sold by the OMCs to the retailers after accounting for the subsidy paid by the government (Figure 2).

Figure 2 » Calculation of Under-recoveries




Adapted from the price build-up published by Petroleum Planning and Analysis Cell (PPAC).

A large part of these under-recoveries is compensated for by additional cash assistance from the government (over and above the fiscal subsidy), while another portion is covered by financial assistance from upstream NOCs.[7] The remaining portion remains uncompensated to the OMCs. Table 1 below shows the quantities of these figures for the year 2010–11.

[ Three petroleum products, namely PDS kerosene, domestic LPG and diesel are sold for less than international market prices, with the government providing a fiscal subsidy on LPG and kerosene. ]

## Table 1 » Quantum of Subsidies and Under-recoveries (2010–11)

INR crore (million US$[8])

| Fiscal Subsidy | | Under-recoveries | |
|---|---|---|---|
| PDS Kerosene | 931 (204) | Domestic LPG | 21,772 (4,777) |
| | | PDS Kerosene | 19,484 (4,275) |
| Domestic LPG | 1,974 (433) | Petrol | 2,227 (489) |
| | | Diesel | 34,706 (7,614) |
| Total | 2,904 (637) | Total | 78,190 (17,154) |

| Government Cash Assistance | Upstream Assistance | Borne by OMCs |
|---|---|---|
| 41,000 (8,995) | 30,297 (6,647) | 6,893 (1,512) |

Source: MoPNG (2011)

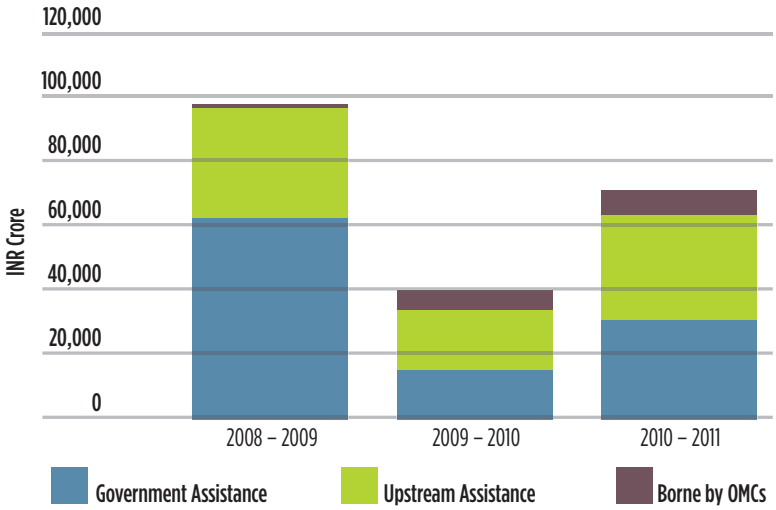
Cash assistance is provided by the government as partial compensation for the total under-recoveries incurred by OMCs. The amount of cash assistance is determined on an ad hoc basis and is usually more than half of the total amount of under-recoveries. Given the total size of the under-recoveries, the amount of cash assistance exceeds the fiscal subsidy provided on PDS kerosene and domestic LPG. Cash assistance is allocated from the fiscal budget and is accounted for under the expenditure category "Compensation to oil companies for under-recoveries on account of sale of sensitive petroleum products" (Union Budget, 2011-12).

The cash assistance to the OMCs is paid on an *ex post facto* basis, i.e., after the under-recoveries have been incurred. The payments are made at the end of each quarter. Therefore, the OMCs often face a shortage of investible funds in the short term. In case of such shortages, these companies have to take additional loans to finance their investments.

The provision of cash assistance to OMCs began after 2008–2009. In the period between 2005–2006 and 2008–2009, the government partially compensated the OMCs' under-recoveries by issuing oil bonds instead of providing cash assistance.

Figure 3 shows how the government's share of compensation of the under-recoveries (through issuance of oil bonds or cash assistance) has varied from 2008–2011.

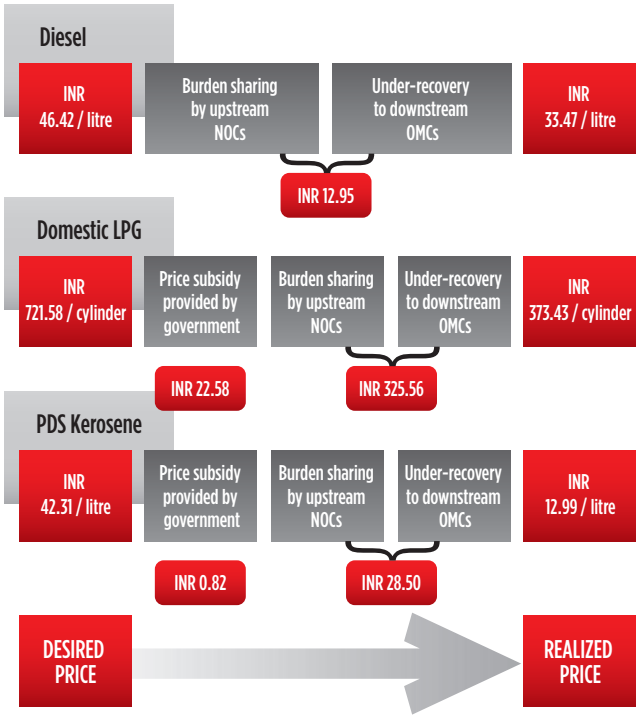
Figure 3 » Compensation for Under-Recoveries by Government and Upstream Companies from 2008–2011




Source: MoPNG (2011)

Figure 4 shows a detailed breakdown of the under-recovery compensation mechanism and government subsidies for the above three products at the retail price applicable in New Delhi as of January 16, 2012.

## Figure 4 » Breakdown of Per Unit Under-recovery on Diesel, PDS Kerosene and Domestic LPG



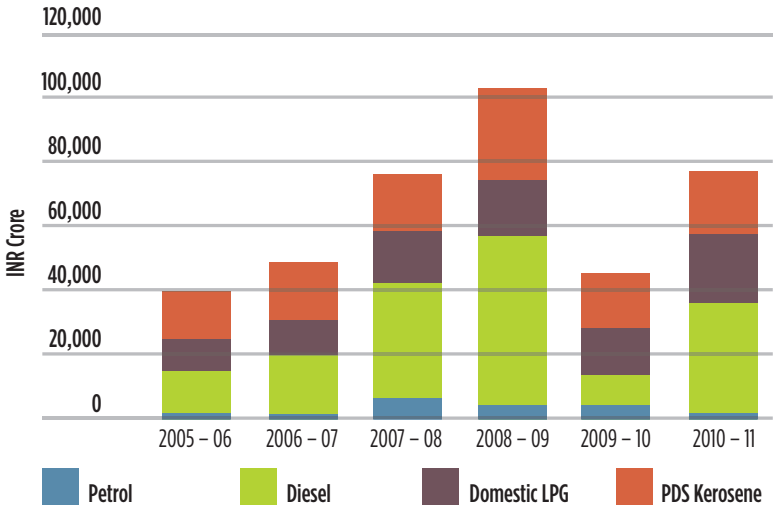

Source: PPAC (January 16, 2012)

**Note:** The data pertains to prices applicable on January 16, 2012. "Desired price" refers to the sum of refinery gate prices, transport charges and marketing margins paid by OMCs. "Realized price" refers to the price charged to dealers (depot price) by the OMCs. Retail prices in each city are calculated by adding excise duty, wholesalers' and retailers' commission and value-added tax on the "realized price."

The total size of under-recoveries on petrol, diesel, kerosene and LPG in 2010–2011 was INR 78,190 crore (US$17.15 billion)[9] (PPAC, 2011a), which is a significant 1.07 per cent of GDP (RBI, 2011a). In contrast, total expenditures of both central and state governments on health and education were 1.27 per cent and 2.98 per cent of GDP, respectively (Ministry of Finance, 2011).

Figure 5 shows how total under-recoveries to oil marketing companies and specific under-recoveries on petrol, diesel, kerosene and LPG have varied over the last six years (2005–2011).

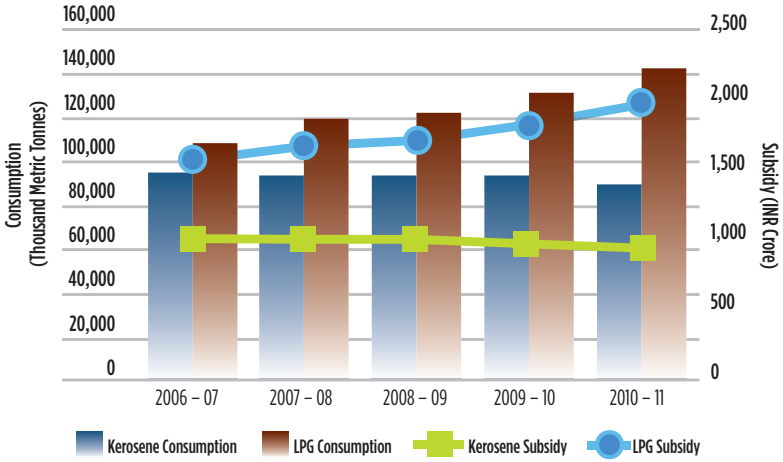
### Figure 5 » Total Under-recoveries on Sensitive Products




Source: PPAC (2011a)

Figure 6 shows the trends in consumption and in the government's fiscal subsidy burden on kerosene and domestic LPG from 2006–2011.

## Figure 6 » Consumption and Fiscal Subsidy Paid for LPG and Kerosene




Source: PPAC (2011b) and PPAC (2011c)

Owing to a fall in the allocation of kerosene by the central government to the states, the government's budgetary subsidy for kerosene has decreased. The total under-recoveries on this fuel have, however, gone up to INR 19,484 crore (US$4.27 billion) in 2010-11 (PPAC, 2011a) due to rising international prices of petroleum.

### 1.3.2 Electricity

The system for providing electricity subsidies is more complex than that of petroleum products, since policies and tariff rates on electricity differ among states and between consumer categories in each state. Moreover, state governments not only provide subsidies on tariff rates (by providing electricity to consumers at discounted rates), but also grant capital subsidies to the state utilities.

Consumers in each state are divided into five broad categories: domestic (residential), agriculture, commercial, industry and railways. Each of these categories is further divided into sub-categories based on consumption levels. The categories and sub-categories vary from state to state. Even within these sub-categories, some states have different tariff rates for consumers in urban and rural areas.

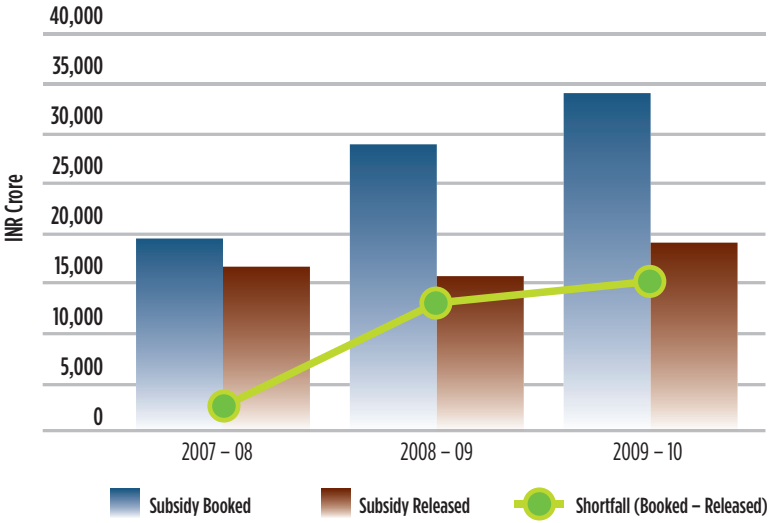
State electricity utilities compute electricity tariffs on the basis of revenue required and the sales forecast. The utilities then approach the state government and the respective state electricity regulatory commissions for approval of the tariff rates. The final seal of approval is provided by the regulatory commissions. The approved tariffs are often lower than those petitioned for by the utilities. This markdown is done with the aim of meeting social and development objectives for different consuming categories.[10]

The state governments then announce a lump sum amount of subsidy to be disbursed to the utilities as compensation. This amount is termed as "Subsidy Booked" in the accounts of the state utilities. According to Section 65 of the Electricity Act, 2003, the state governments should make the subsidy payment in advance to the state utilities for the following financial year. More often than not, however, the governments actually make the payment later. The actual subsidy payment to the utilities is termed "Subsidy Released" and is often lower than the amount of subsidy booked.

According to a report by the Power Finance Corporation Ltd (PFC, 2010), 89 major utilities in the country earned revenues equalling INR 1,90,948 crore (US$ 40.27 billion) (excluding subsidies) in 2009–2010, while their total expenditure was higher, at INR 2,52,125 crore (US$53.17 billion). This essentially implies a 75.74 per cent cost recovery for these companies.

The electricity subsidies booked and released over the last three years are shown in Figure 7.

## Figure 7 » Electricity Subsidies in India




Source: Power Finance Corporation Limited (PFC), (2010)

**Note:** This report covers State Power Utilities and State Power Departments in all the States as well as Union Territories of Puducherry and Private Distribution Companies created as a result of reform measures (distribution companies in Delhi & Orissa). It covers 90 utilities for the years 2007–2008, 93 utilities for 2008–2009 (including successor utilities of Chhattisgarh State Electricity Board (CSEB) unbundled with effect from January 1, 2009) and 89 utilities for the year 2009–2010. The three distribution utilities of Assam and the trading company Assam State Electricity Board have been bundled together to form a single distribution utility for the year 2009–2010.

# 2

# ARE ENERGY SUBSIDIES GOOD FOR INDIAN CITIZENS?

# 2. Are Energy Subsidies Good for Indian Citizens?

Out of India's 1.2 billion people, approximately one-fourth live below the poverty line.[11] Energy access and affordability play an important role in ensuring socioeconomic development of this segment of the population. Since poor households typically spend a larger share of their income on energy needs (NSSO, 2010), changes in fuel prices affect them much more than the rich. It is therefore imperative for the government to take into account the impact that any policy on energy subsidies can have on these citizens. With this in mind, the following sections look at the impact of energy subsidies on the economy as a whole, on poor households in particular, as well as on the environment. Finally, this guide outlines the government's current plans for energy subsidy reform.

## 2.1 What is the Impact of Energy Subsidies on the Economy?

### 2.1.1 Impact on Government Finances

Subsidies have multiple effects on the government's budget. The first and easiest to identify is the impact on the fiscal balances of the country.

The fiscal subsidy to the petroleum companies in 2010–11 was INR 2,904 crore (US$637 million). In addition to the fiscal subsidy, the government also grants assistance to the OMCs in the form of cash and oil bonds (see Box 1) to share the under-recovery burden. In 2010–2011, this assistance amounted to INR 41,000 crore (US$8,995 million) (MoPNG, 2011).

> Since poor households typically spend a larger share of their income on energy needs, changes in fuel prices affect them much more than the rich.

## Box 1 » Oil Bonds

### Oil bonds were issued by the government of India to partly make up for the under-recoveries of the OMCs.

These bonds have a maturity of up to 20 years and interest rates ranging between 6 and 9 per cent and were issued in several tranches each year between 2005–2006 and 2008–2009. Although fully transferable, these bonds do not satisfy the short term cash requirements of the companies which are forced to sell these bonds at discounted rates to meet their cash and liquidity needs.

Although the bonds themselves are off-balance-sheet items, the interest on these is to be paid by the government and forms a part of the fiscal outgo. Further, once these bonds become due for repayment, the government will face a huge expenditure. However, in the budget speech for 2010–2011, it was announced that oil bonds would no longer be used as a way of compensating oil companies for subsidies. Instead of issuing bonds, the government now provides support in the form of cash assistance to oil companies.

In its third quarter review of the Macroeconomic and Monetary Developments, the Reserve Bank of India (RBI) stated (RBI, 2012):

"The Centre has already exhausted its budgetary provision for petroleum subsidies and has indicated additional provisions (Rs. 300 billion) in the second supplementary demand for grants presented in November 2011. It is estimated that the higher expenditure on petroleum subsidy could drive up the fiscal deficit by around 0.8 percentage points of GDP for 2011-2012."

## Box 2 » The Petroleum Sector's Contribution to Government Treasury

While subsidies and under-recoveries in the petroleum sector are a huge burden on government finances and on oil companies, it should be kept in mind that petroleum products are also heavily taxed by the central and state governments. In 2010–2011, the total contribution of the sector to the central and state exchequer was INR 2,25,494 crore (US$49,472 million) (PPAC, 2011d). The total contribution comprises of customs duty, excise duty, cess and royalty, dividend, corporate tax, tax on dividend, profit petroleum and others (including service tax) paid to the central government, and sales tax, royalties, dividends, octroi duties (including electricity duty), entry tax and others paid to the state governments.

The electricity subsidies that are disbursed by the state governments put significant pressure on their budgets. In addition to this, the shortfall between cost and revenue has adversely affected the finances of the state owned-electricity utilities. Over the period 2006–2010, subsidies accounted for 16 per cent of the total revenue of electricity distribution companies and, even after accounting for the subsidies, the net losses of the distribution companies amounted to INR 82,000 crore (US$18,269 million) (Planning Commission, 2011).[12]

### 2.1.2 Diversion and Misuse

Subsidies also encourage diversion and malpractice in the energy sector. For example, kerosene is diverted to adulterate more expensive transport fuels. Since kerosene moves throughout the supply chain at subsidized rates, almost 40 per cent of the allocation for PDS purposes is diverted towards non-PDS and non-household usage (NCAER, 2005). In the past few years refineries have made large investments in improving the quality of diesel which gets negated once the fuel is adulterated with kerosene. This not only contributes to leakage, but also impacts the quality of ambient air, engine efficiency of vehicles, and tailpipe emissions of hydrocarbons, carbon monoxide, nitrogen oxide and particulate matter. It also negates the substantial investments made by the refiners in improving fuel quality and moving towards producing cleaner and more efficient grades of auto fuel.

In case of LPG, although the subsidised LPG cylinders are meant only for household usage, the substantial gap between the price of domestic and commercial LPG has led to large-scale diversion for commercial usage. Further, subsidized LPG cylinders are also being diverted for use as an automobile fuel. This not only exacerbates the already rampant misuse but is also hazardous and can lead to accidents (RIS, 2010).

The provision of free electricity has also led to wasteful consumption in the agriculture sector. Even in regions where electricity is not provided free of cost to farmers, tariffs are set at flat rates which leads to excessive usage of irrigation pumps and depletion of the water table.

## Box 3 » Efforts Made by the Government to Check Diversion of LPG

In order to check black marketing and diversion of domestic LPG cylinders, the government enacted the "Liquefied Petroleum Gas (Regulation of Supply and Distribution) Order, 2000," which prohibits unauthorised diversion of LPG and also formulated the "Marketing Discipline Guidelines, 2001," which provide for penal action against such offences. Raids on commercial establishments and LPG distributorships are conducted with the authorisation of the Central government, and OMCs perform refill audits on distributors. State governments are also empowered to take action against black marketing/diversion of domestic LPG. Between April and September 2010, 1,939 raids were conducted on commercial establishments, in which 11,557 domestic LPG cylinders were seized (Rajya Sabha, 2010). However, the fines imposed on such distributors may not be acting as an adequate deterrent against such offences (Praveen, 2008).

While these policies may help in preventing the diversion of fuel in the short term, the long-term pricing policy of the government needs to be re-examined to address the inherent problems.

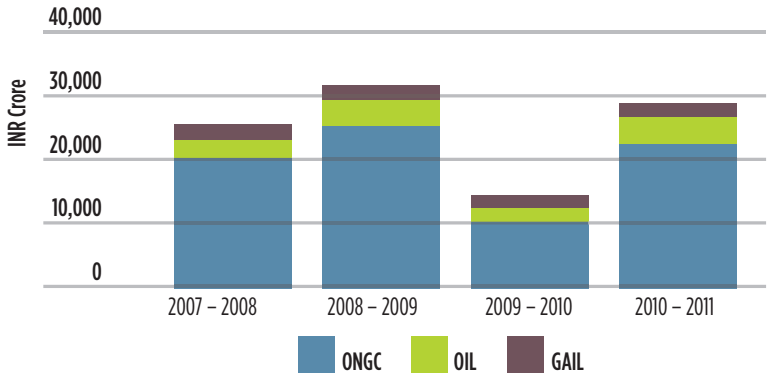
Further, the large cost of monitoring the distributors to check leakages presents a regressive solution which only adds to the overall cost of subsidies.

### 2.1.3 Impact on Public Sector Oil Companies

Since the under-recoveries are shared by both the upstream and downstream companies, they have an impact on the petroleum sector as a whole. Upstream oil companies, namely Oil and Natural Gas Corporation (ONGC) Limited and Oil India Limited (OIL), sell crude oil to downstream refineries at discounted rates[13], and the downstream companies also bear a portion of the under-recovery burden. In 2010–2011, the burden borne by upstream and downstream companies was INR 30,297 crore (US$6.65 billion) and INR 6,893 crore (US$1.51 billion), respectively.

This not only adversely affects the cash flow and profitability of oil companies but also hinders the upstream sector from investing in improving and expanding their exploration and production operations. Among the upstream companies, ONGC bears the largest burden of the total subsidy followed by OIL and Gas Authority of India Limited (GAIL) (Figure 8).

Figure 8 » Crude Oil Under-recovery Burden Shared by Upstream Oil Companies




Source: OIL (2011)

The subsidy and cash assistance is provided only to public sector companies, and private companies are free to market these products at competitive market prices. However, higher market prices make it uncompetitive for private companies to retail these products; therefore, while private participation is increasing in the refining of petroleum products, there is limited private participation in marketing these fuels (petrol, diesel, LPG and kerosene).

### 2.1.4 Impact on Private Oil Companies

In 2002, the marketing of transportation fuels (petrol and diesel) was opened to private sector players as well as other NOCs, and licenses were given to private companies such as Reliance, Essar and Shell to market these fuels. However, these companies have not been provided a level playing field as they continue to compete with the public sector OMCs which market the fuel at subsidized/ government-controlled rates.[14] Consequently, a large number of petrol pumps owned by private players are currently sitting idle.

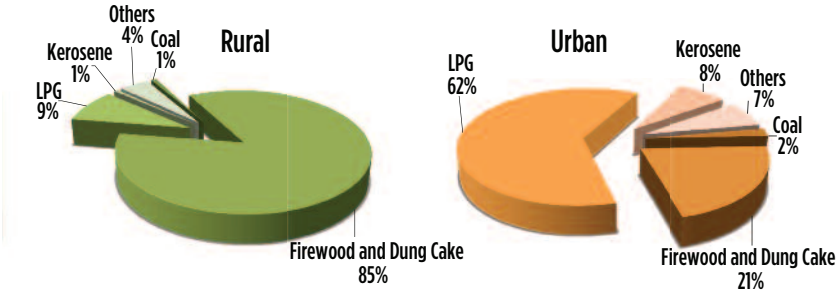
## 2.2 Do Poor People Benefit?

The effectiveness of energy subsidies hinges in part on the extent to which subsidized fuels reach the intended beneficiaries, primarily the poor. The following sections consider how poor citizens benefit from subsidies for LPG, PDS kerosene, diesel and electricity.

### 2.2.1 LPG

In 2007–2008 only around 8 to 9 per cent of the rural population consumed LPG as a primary fuel for cooking, compared to 62 per cent in urban areas. (NSSO, 2010).[15] Although LPG is subsidized to meet the fuel requirements of the poor, a larger share of LPG is consumed by economically well-off urban households (GoI, 2010b).

Figure 9 » Distribution of Households by Primary Source of Energy for Cooking in Rural and Urban India (2007–2008)




Source: NSSO (2010)

**Note:** "Others" includes households which use no cooking arrangements, gobar gas, charcoal and electricity.

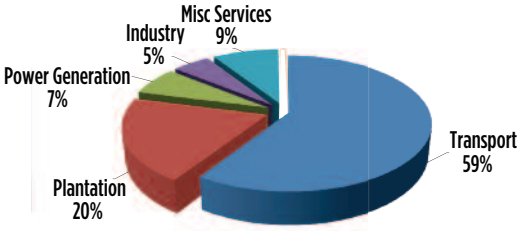
According to an earlier study by The Energy and Resources Institute (TERI), 76 per cent of the LPG subsidy goes to urban areas and nearly 40 per cent of the LPG subsidy is enjoyed by the wealthiest 6.75 per cent of the population (Chawla et al., 2005). In short, the subsidy for LPG, even in urban areas, is inefficient and regressive.

### 2.2.2 High Speed Diesel

While no explicit fiscal subsidy is provided to High Speed Diesel (HSD), the final prices of the product at the petrol pumps operated by the OMCs are controlled by the government and the under-recovery on diesel as of January 16, 2012, stood at INR 12.95/litre.

Almost 60 per cent of the diesel consumed in India was in the transport sector (Figure 10) of which 54 per cent was consumed in the road transport sector (GoI, 2010a).

Figure 10 » Uses of High Speed Diesel in India (2009–2010)




Source: MoSPI (2011)

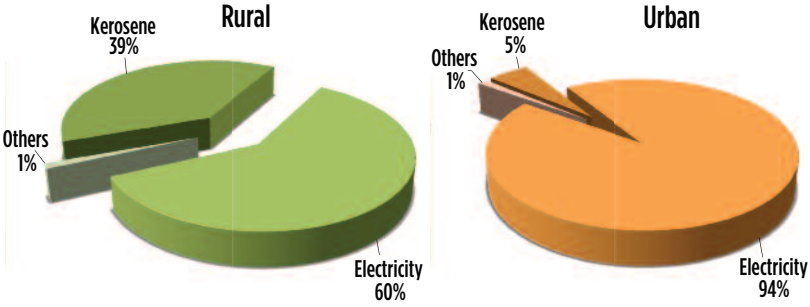
Within the road transport sector, the consumption of subsidized diesel by private vehicles has increased substantially; a trend that is further exacerbated by the price difference between petrol and diesel.

Prices of diesel are controlled primarily to keep a check on the cascading inflationary impact of higher freight and transportation charges on the prices of essential commodities. Although this is a channel through which diesel prices affect the poor, the exact causal relationship between diesel price and inflation is yet to be quantified conclusively.

### 2.2.3 Kerosene

PDS kerosene has been subsidised to increase its accessibility to the poor. In rural areas this fuel is used primarily for lighting purposes—only 1.3 per cent of rural households use it for cooking (NSSO, 2010). However, in urban areas, 8 per cent of the households use kerosene for cooking. In 2007–2008, 39 per cent of rural and 5.1 per cent of urban households used kerosene as the primary fuel for lighting. However, kerosene is an inefficient and more expensive source of lighting when compared with electricity and causes indoor air pollution. Cell-based LED lanterns and solar power based lanterns also provide an alternative to kerosene-based wick lanterns.

Figure 11 » Distribution of Households by Primary Source of Energy for Lighting in Rural and Urban India (2007–2008)




Source: NSSO (2010)

**Note:** "Others" includes households which use no lighting arrangements, other oils, gas and candles.

### 2.2.4 Electricity Subsidies

Electricity is provided free of charge to farmers in some states. However, since a significant number of farm connections are unmetered, quantifying the benefits of power subsidies to farmers is complicated and may even be misleading. In the domestic (residential) sector too, electricity is provided at subsidised rates which vary according to different categories[16] of consumers. Tariffs are typically higher for those households that consume more electricity. In a study of electricity subsidies for urban residential consumers in 15 states in India, Komives et al (2005) found that although the subsidies are generally regressive,[17] they are less regressive than overall levels of income distribution. In other words, the distribution of electricity subsidies is more equitable than income distribution in these states.

## 2.3 What About the Environment and Health?

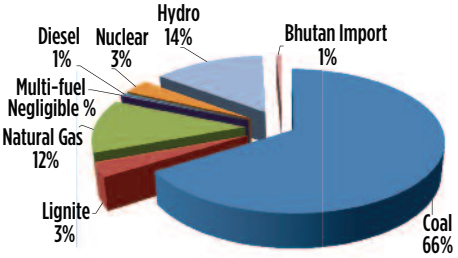
Subsidizing fuels can encourage consumption and discourage investment in cleaner forms of energy. The logical consequences of high fossil fuel consumption are greater greenhouse gas emissions, local air pollution and resource depletion. Based on data from the International Energy Agency (IEA), phasing out consumption subsidies for fossil fuels between 2011 and 2020 would cut global carbon dioxide ($CO_2$) emissions by 5.8 per cent, compared with a business as usual scenario (IEA, 2010). The Organisation for Economic Co-operation and Development (OECD) estimates that emissions reductions could be as high as 10 per cent by 2050 if the same subsidies for fossil fuel consumption are removed by 2020 (IEA, OPEC, OECD & World Bank, 2010).

The regulation of retail prices of diesel has affected the private passenger vehicle market. The price differential between petrol and diesel has led to an increase in the demand for diesel-based personal vehicles (Goyal, 2011) which, although more efficient, are more polluting than petrol-based vehicles.

More than 80 per cent of electricity generated in India in the year 2010–2011 was from fossil fuels (Figure 12). Any wasteful consumption of electricity thus puts undue pressure on fossil fuel supplies and is bad for the environment.

The provision of free electricity to the agriculture sector in some states has also led to overuse of ground water through tube-wells and agricultural pump sets, which has in turn resulted in lowering of the water table (Siddhanta, 2010).

Figure 12 » Percentage Share of Various Fuels in Overall Electricity Generation, 2010–2011




Source: Central Electricity Authority (CEA, 2011)

## 2.4 Who Would be the Winners and Losers from Energy Subsidy Reform?

Abolishing price controls and dismantling subsidy programs would lead to an improvement in the government's finances. It would also free up public funds which could then be used for other development-related expenditures.

A reform of prices will also have an overall positive impact on the oil sector. It will reduce the borrowing and interest expenditure of refining and marketing companies and at the same time will increase funds available for upstream companies to invest in exploration and production activities. The downstream companies will be encouraged to invest in producing better and cleaner grades of automotive fuels. Market-based pricing of fuels will also facilitate and encourage private players to enter the retail market for petroleum products, which in turn will lead to a more competitive market.

Efficient pricing of fuels will also create a competitive market between different types of fuel and may even encourage a shift towards cleaner and more efficient forms of energy.

Notwithstanding the clear benefits to oil companies and the government's finances, removal of subsidies would lead to an increase in fuel prices which, in turn, will have an impact on the budgets of

all households, at least in the short run. There is expected to be both a direct impact through higher fuel prices and an indirect impact through the effect on prices of other commodities. In a review of 20 countries from Africa, Asia, Middle East and Latin America, del Granado et al., (2010) have estimated that an increase of 25 cents per litre in fuel prices would decrease household real incomes by about 5.9 per cent.[18] However, owing to differences in economic status, changes in fuel prices are likely to affect the poor and the rich differently. Any change in prices would have a greater impact on the household budget of the poor vis-à-vis the richer households. It is thus critical that any step towards reforming the subsidies be coupled with adequate measures to mitigate the impact on poor households.

Due to the indirect impact on other goods and services, energy subsidy reform, especially in case of diesel and electricity[19] will also affect the inflation rate. According to the RBI (2011c) "empirical estimates show that every 10 per cent increase in global crude prices, if fully passed through to domestic prices, could have a direct impact of 1 percentage point increase in overall Wholesale Price Index (WPI) inflation and the total impact could be about 2 percentage points over time as input cost increases translate to higher output prices across sectors."

## 2.5 What Plans to Reform Subsidies Have Been Announced by the Government?

### Petrol has been deregulated . . .

Based on the recommendations of the Expert Group on a Viable and Sustainable System of Pricing of Petroleum Products headed by Dr. Kirit Parikh (GoI, 2010b), the government decided to reform the subsidy regime for petroleum products. Petrol prices were liberalized from June 2010 and it was reported that diesel prices would soon follow suit.

### . . . diesel prices have not followed suit

The government announced on November 24, 2011 that diesel price deregulation had been put on hold owing to the rise in the level of food inflation. A rise in diesel prices would result in an increase in freight charges levied by transport companies. This would, in turn, feed into higher prices of food commodities. Recently, the Indian rupee has also depreciated to an all-time low of INR 53/US$ thereby increasing the import bill and also the final prices of petroleum products which are priced at par with international rates. This has exacerbated the challenge of reforming fossil fuel subsidies (Mahajan, 2011).

## Reduction in taxes

In an effort to reduce the burden of high fuel prices on final consumers, the central government has reduced basic customs duties on crude from 5 per cent to nil from June 2011. Customs duties on petrol and diesel were also reduced from 7.5 per cent to 2.5 per cent and on other petroleum products from 10 per cent to 5 per cent. Similarly, the basic excise duty on diesel has been reduced to nil from INR 2/litre. Moreover, in June 2011, the Finance Minister urged state governments to reduce levies on diesel, kerosene and domestic LPG (Press information Bureau (PIB), 2011a).

## Better targeting

To better target subsidized LPG as a clean cooking fuel in rural areas, the government introduced a distribution scheme called the Rajiv Gandhi Gramin LPG Vitrak Yojana (RGGLVY). This program was launched in October 2009 and initially covered eight states and 1,200 distribution centres. The scope of the program has increased since then, with the OMCs undertaking to set up 2,428 distributors in 23 states and Union Territories (UTs). As of September 2011, Letters of Intent (LoIs) had been issued for 1,062 locations, of which 581 distributors had already been commissioned (MoPNG, 2011).

## Linking subsidies to the UID?

The government has long contemplated a move towards direct transfers of kerosene and LPG subsidies through a smartcard/unique ID framework. A task force chaired by Nandan Nilekani, and which includes representatives from multiple government ministries and departments, was appointed to develop a suitable mechanism for direct subsidies to individuals and families who are entitled to kerosene, LPG and fertilizer (PIB, 2011b).

Initially, the task force was mandated to develop the framework for direct transfer of subsidies and to design the necessary IT systems, but the terms of reference of the group were extended (in July 2011) to include:

I. Identifying and suggesting required changes in the existing systems, processes and procedures, IT frameworks and supply chain management;

II. Recommending institutional mechanisms to implement the IT strategy for PDS; and

III. Examining and suggesting an implementable solution for direct transfer of subsidies on food and kerosene to intended beneficiaries with the use of Aadhaar numbers (Unique Identification numbers), Aadhaar enabled transactions and Aadhaar authentication infrastructure.

An interim report by the Task Force was released in July 2011. The report recommended the development of a Core Subsidy Management System to assist in targeted subsidy delivery through Aaadhaar Enabled Bank Accounts.

Regarding LPG, the Task Force envisioned three phases: phase I would see a cap on subsidized cylinders coupled with an authentication framework; phase II would introduce direct transfers to bank accounts of the beneficiaries; and phase III would involve segmenting and targeting customers and direct transfer to these customers alone. In the case of kerosene, the Task Force recommended direct transfers through State Governments/UT Administrations in Phase I and direct transfer to the account of the beneficiaries in Phase II. Pilot projects on validation of domestic LPG sales through Aadhaar accounts are currently underway in the cities of Hyderabad and Mysore.

The UID scheme has, however, been criticized on issues relating to adaptability of technology, security and identity theft, costs of the program and legal issues pertaining to the voluntary participation in the program.[20]

## Direct transfer of LPG subsidy

Notably, the state government of Andhra Pradesh has already introduced a direct transfer scheme named "Deepam" for increasing access to LPG for BPL families. Under this scheme, which was launched in 1999, the state government waived the initial fee of INR 1,000 for obtaining a new LPG connection to women who were part of Self Help Groups (SHGs) (UNDP/ESMAP, 2003).

## Electricity subsidy reforms remain largely unexplored . . .

Electricity subsidy reforms need to be addressed at the state level. Electricity tariffs are often a major electoral issue and lower tariffs are often used by the state governments to placate the public and garner support before the elections. While the Electricity Act of 2003 was introduced with the aim of improving efficiency in the sector, state-owned electricity utilities continue to face heavy losses.

## Rural electricity scheme

Government schemes like the Rajiv Gandhi Gramin Vidyutikaran Yojana (RGGVY) are also facilitating the connection of more poor households to the electricity grid. The increasing pace of rural electrification could also provide an alternative to kerosene.

# 3

# WHAT DO WE KNOW ABOUT REFORM OF ENERGY SUBSIDIES?

## 3. What Do We Know About Reform of Energy Subsidies?

Although many fuel subsidies help the rich more than the poor, we should not lose sight of the fact that some poor households depend on subsidies to make energy affordable. For these people, expenditure on energy takes up a larger portion of their budget than it does for the wealthy. An increase in energy price and possible inflation can put poor households under severe financial stress. As has been already mentioned, a large percentage of India's population lives below the poverty line, and any increase in energy price is bound to affect these households adversely. Energy prices therefore also form an important political issue. Any effort to reform prices of petroleum products and electricity has been met with opposition that has deterred government from taking strong and consistent measures on price reform.

But subsidy reform can be designed and implemented in a way that minimizes the negative impacts on poor households. A suite of policies have been used by countries around the world to ease the transition away from fuel subsidies. The policies can be grouped into two categories: those that provide assistance to poor households and those that help the broader community to understand and support reform. The best chance for successful reform (which can be defined as the long-term elimination of subsidies with minimal negative impacts) requires a comprehensive strategy drawing on a range of transitional support policies (Laan, Beaton and Presta, 2010). Research into the nature of the subsidy, how its costs and benefits are distributed and identification of those most likely to be impacted by its removal will help design the reform strategy.

[ Subsidy reform can be designed and implemented in a way that minimizes the negative impacts on poor households. ]

## 3.1 Policies to Support Poor Households

Reducing energy subsidies would free up government funds for other purposes. By allocating these funds to programs that directly target the poor, the government would redirect money from fuel subsidies (that mostly benefit the rich) to those most in need. There are two main ways that governments can do this: cash transfers or increased social spending.

Lessons for both of these approaches can be drawn from Indonesia's experience. In 2005 and 2008, the Indonesian government used the Cash Transfer Assistance program (Bantuan Langsung Tunai or BLT) to reduce opposition to fuel price increases and help poor families cope with higher energy costs. The program provided two payments of INR 300,000 (around US$30) directly to poor families (Widjaja, 2009). The BLT was accompanied by short-term measures referred to as the Fuel Subsidy Reduction Compensation Program (Program Konpensasi Pengurangan Subsidi Bahan Bakar Minyak or PKPS-BBM). These programs provided targeted support for affected groups by increasing social spending in the areas of education, health and rural infrastructure (Beaton & Lontoh, 2010).

In a review of these policies, Beaton and Lontoh (2010) considered that they were reasonably successful in assisting poor households and reducing opposition to fuel price increases. According to various reviews of the 2005 BLT program, mistargeting is thought to have been relatively low, and the majority of households did actually receive the funds they had been promised (Hastuti, et al., 2006).

However, there were problems. Some cash transfers were misappropriated and some deserving recipients did not receive payments, which resulted in social unrest (Cameron & Shah, 2011). Those missing out on payments vented their frustration on the local administrators of the scheme, leading to violence in some cases. Any future implementation of the BLT would need to take into account lessons learned from previous experience such as the need for better targeting, stronger oversight and greater support for village officials.

An alternative approach would be to link cash payments to behaviours that assist community development. Conditional Cash Transfers (CCTs) require recipient families to commit to certain activities, generally related to children's health care and education. Mexico's Oportunidades program is one such scheme. It started with approximately 300,000 beneficiary households in 1997 but covered 5 million households by 2009 (Fiszbein & Schady, 2009). Significant data collected over the years indicate that the program has been successful in assisting the poor. Mexico's program was not coupled with reductions to fossil-fuel subsidies, but it nonetheless provides an example of a social safety net that could be used to compensate for fuel price increases while maximizing development outcomes.

In India too, various cash transfer schemes have been implemented to support education and health. Most of these programs are directed towards empowerment of women and child development. At the central level, programs like the Dhanalakshmi Scheme (2008), Janani Suraksha Yojana (2005) and Balika Samridhi Yojana (1997) have been introduced. At the state level as well, schemes have been introduced in Tamil Nadu, Gujarat, West Bengal, Delhi and Kerala. However, none of these address the issue of energy poverty.

Alternative avenues for social spending (funded by subsidy elimination) can also be observed in other countries. Jordan, for example, supported subsidy reform in 2008 by increasing the minimum wage and providing a salary increase to low-paid government employees. A one-time bonus was given to low-income government employees and pensioners and electricity tariffs were maintained at low levels. In the same year, Thailand initiated a six-point, six-month THB46 billion (US$1.3 billion) program to help the poor in response to high international oil prices. The plan offered free electricity to those consuming less than 80 kilowatt-hours a month (and half the cost for households consuming less than 150 kilowatt-hours), free rides on the 800 ordinary buses operated by the state-run Bangkok Mass Transit Authority and on third-class trains, free water for the first 50 cubic meters, excise exemptions on ethanol-gasoline blends and diesel, and a ceiling on LPG prices (Kojima, 2009).

The best options for transitional support measures will be country-specific, depending on the administrative capacity of the country and coverage of services. Targeted cash transfers require that the poor can be identified and a cash delivery mechanism established. A prerequisite to providing cheap access to electricity is comprehensive electricity coverage. Where such infrastructure does not exist, governments can increase social spending through publicly funded health clinics, schools, roads, public transport, and water and sanitation infrastructure.

## 3.2 Good Processes to Support Reform: Lessons from international experience

The way in which subsidies are eliminated can also ease the transition to market prices and build public support for reform. Good practice includes a clear communications campaign, stakeholder consultation, transparency about fuel prices, a gradual phase-out of subsidies and monitoring of the impacts of implementation with adjustments if necessary.

### 3.2.1 Communication

Information campaigns are an important element of any successful subsidy reform strategy. For example, in 2005 the Indonesian government implemented a public relations campaign alongside cash transfers and social spending as a means for building support for reform. In contrast with previous attempts to increase fuel prices, the 2005 reforms met with no substantial opposition (Beaton & Lontoh, 2010).

Public understanding and acceptance of changing fuel prices can be encouraged by regularly publishing information such as price surveys, comparisons of domestic and international prices, historical and current prices, and the composition of each key petroleum product price (such as import prices, refining and distribution costs and taxes) (World Bank, 2009).

Chile, for example, has strong transparency arrangements for its fuel subsidies and pricing policies. The National Energy Commission determines fuel price structure, monitors prices set by National Petroleum Company and provides weekly media briefings about pricing. 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.

Clear communication with stakeholders and the public is a key element of an effective reform strategy. If stakeholders participate in the decision-making process from the beginning, opposition to subsidy reform can be addressed early and taken into account in designing policies to ease the transition. Public awareness campaigns help citizens to understand why reform is necessary and how their money can be redirected to other services or returned to them in the form of lower taxes.

### 3.2.2 Gradual Phase-out

A gradual phase-out of subsidies can give recipients time to adjust. The longer a subsidy has been in place, the more difficult it will be to remove and the longer the likely timeframe required for reform. Subsidies have a tendency to become perceived as entitlements and any attempt to reduce them can be politically hazardous (Steenblik, 2007). In December 2010, the Bolivian government made sudden and dramatic increases to the price of subsidized fuel, raising prices by over 80 per cent, with few supporting measures to ease the transition. The result was a major public backlash and a rapid reinstatement of subsidies by the government. In early 2012, the Nigerian government also slashed fuel subsidies steeply and with little forewarning. This led to riots and a general strike, prompting the government to backtrack. The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ, the German development agency) recommends that governments should avoid price jumps of over 10 per cent per adjustment when instituting reform; GIZ recommends governments implement small increments on a regular (e.g. monthly) basis, over a clear timeframe.

However, there can be opportune moments to deregulate quickly. Falling oil prices in the second half of 2008 provided an opportunity for several governments to undertake price subsidy reforms, including China, Ethiopia and Vietnam (Kojima, 2009).

### 3.2.3 Monitoring and Adjustment

Monitoring and adjusting reform on an ongoing basis is necessary to assess whether measures have been effective, check whether there have been unintended negative consequences, and adapt policies over time (Laan, Beaton & Presta, 2010). Temporary assistance policies also require careful monitoring in order to ensure that the assistance is reaching the target groups and that support does not continue for so long that it becomes entrenched.

Finally, strong governance practices must be put in place to prevent the government from becoming enmeshed in fuel pricing again in the future. Governments will always be called upon by the public to intervene when fuel prices are high. Market-based pricing overseen by independent bodies that regulate competition and transparency regarding fuel prices allow governments to demonstrate to citizens that fuel prices are dictated by international forces, not the government.

## 3.3 Conclusion

The current regime of energy subsidies in India is a heavy burden on the government's resources and has had only limited success in reaching the intended beneficiaries. In case of PDS kerosene, large-scale leakages are rampant, with close to 40 per cent of the fuel being diverted towards non-PDS usage. In the case of LPG, a large portion of the subsidies accrue to richer households, which can afford to pay market prices for the fuel.

Energy subsidies also have significant ecological ramifications due to overuse of fossil fuels and electricity. Increases in emissions due to overuse of petroleum products and over-exploitation of groundwater resources caused by inefficient consumption of free electricity are genuine and urgent concerns.

Subsidies also put a lot of pressure on national oil companies and power sector utilities, which face heavy financial burdens under the current system. Entry into the electricity and oil marketing sector is difficult for private companies, which cannot afford to undercut the artificially lowered prices at which these energy sources are sold to consumers.

At the same time, however, subsidy reform has to be approached carefully. Changes in fuel prices affect the poorest sections of the population the most. Experience from around the world demonstrates that energy reform will face strong opposition if the public is not properly consulted and informed, and if compensatory policies are not introduced to protect the poor. Target groups which are to receive subsidy benefits need to be identified accurately and appropriate measures to compensate for the loss of welfare from rising fuel prices should be designed carefully. A prerequisite to reform is the presence of a high degree of awareness among the people regarding the plethora of issues surrounding energy subsidies, including an understanding of their overall costs and benefits.

# 4. Endnotes

1 Subsidies are provided on kerosene distributed through the public distribution system (PDS) where the fuel is sold only to ration card holders through government designated Fair Price Shops (FPSs). Wheat, rice and sugar are also distributed through the PDS.

2 Subsidies are also provided on 14.2 kg LPG cylinders which are sold to households. Subsidized LPG is termed as "domestic LPG" and is sold only to households, i.e., for residential usage.

3 An in-principle approval for deregulating the diesel prices was also given, but that has not happened due to the persisting volatility in international crude oil prices.

4 Detailed text available at <http://www.wto.org/english/docs_e/legal_e/24-scm_01_e.htm>

5 Since neither petroleum nor electricity markets are perfectly competitive, the term market price has a different connotation in these markets.
In petroleum product markets these refer to trade and import parity prices. Trade Parity Price (TPP) is a weighted average of import and export parity prices in a ratio of 80:20. Import Parity Price of a good is set equal to the domestic price of an equivalent imported good – which means that it is the sum of world price, transport cost and tariff. Similarly, export parity price of a good is equal to the price that a producer gets or can expect to get for its product if exported.
In electricity markets, prices are determined on a cost-plus basis.

6 Internationally competitive market prices are based on trade parity in case of diesel and import parity in case of LPG and Kerosene.

7 Upstream NOCs are those companies which are involved in exploration and production of oil and gas.

8 At an exchange rate of INR 45.58 = US$1 for 2010–2011 (Source: RBI, 2011c).

9 This refers to residential consumers (i.e., households) in India.

10 For instance, in the states of Tamil Nadu and Punjab, electricity is provided free of cost to the agriculture sector.

11 There are a large number of definitions and methodologies that exist to determine the extent of poverty and inequality. The approximation made here is based on the Planning Commission's estimates and the national poverty line estimates as reported in the Economic Survey 2010–2011.

12 This report compiles information on the distribution companies in 15 states.

13 Between April and June 2011, the gross price of crude oil was US$120.58/bbl of which the upstream companies realized only US$49.96/bbl: the rest was offered as discounts to the refineries (MoPNG, 2011).

14 For instance, Essar Oil maintains diesel prices at rates higher than the regulated NOC prices and this also affects the volume of sales.

15 The household-level energy usage patterns reflected in this guide are based on the household-level sample survey data available in the Reports of the National Sample Survey Organization (NSSO).

16 The definition of these categories (and therefore the level of subsidies) varies from one state to another.

17 A regressive subsidy implies that the share of subsidy received by poor households is lower than their share in the total population. Similarly, regressive income distribution implies that the share of income earned by poor households is lower than their share in the total population.

18 It should be noted that these estimates are based on cross-country studies done by the authors and are not specific to India.

19 These are both used as intermediate goods for production of other commodities and diesel is also used for freight transportation.

20 The UID bill which was introduced in the Winter Session of Parliament has been rejected and the Parliamentary Standing Committee has demanded that the bill be redrafted. The mandate of the UIDAI has, however, been extended to collect biometric data of an additional 40 million residents taking the total number of people enrolled to 200 million.

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**The International Institute for Sustainable Development's Global Subsidies Initiative**

The International Institute for Sustainable Development (IISD) launched the Global Subsidies Initiative (GSI) in December 2005 to put a spotlight on subsidies – transfers of public money to private interests – and how they undermine efforts to put the world economy on a path toward sustainable development.

Subsidies are powerful instruments. They can play a legitimate role in securing public goods that would otherwise remain beyond reach. But they can also be easily subverted. The interests of lobbyists and the electoral ambitions of officeholders can hijack public policy. Therefore, the GSI starts from the premise that full transparency and public accountability for the stated aims of public expenditure must be the cornerstones of any subsidy program.

But the case for scrutiny goes further. Even when subsidies are legitimate instruments of public policy, their efficacy – their fitness for purpose – must still be demonstrated. All too often, the unintended and unforeseen consequences of poorly designed subsidies overwhelm the benefits claimed for these programs. Meanwhile, the citizens who foot the bills remain in the dark.

When subsidies are the principal cause of the perpetuation of a fundamentally unfair trading system, and lie at the root of serious environmental degradation, the questions have to be asked: Is this how taxpayers want their money spent? And should they, through their taxes, support such counterproductive outcomes? Eliminating harmful subsidies would free up scarce funds to support more worthy causes. The GSI's challenge to those who advocate creating or maintaining particular subsidies is that they should be able to demonstrate that the subsidies are environmentally, socially and economically sustainable – and that they do not undermine the development chances of some of the poorest producers in the world.

To encourage this, the GSI, in cooperation with a growing international network of research and media partners, seeks to lay bare just what good or harm public subsidies are doing; to encourage public debate and awareness of the options that are available; and to help provide policy-makers with the tools they need to secure sustainable outcomes for our societies and our planet.

**www.globalsubsidies.org**

The GSI is an initiative of the International Institute for Sustainable Development (IISD). Established in 1990, the IISD is a Canadian-based not-for-profit organization with a diverse team of more than 150 people located in more than 30 countries. The GSI is headquartered in Geneva, Switzerland and works with partners located around the world. Its principal funders have included the governments of Denmark, the Netherlands, New Zealand, Norway, Sweden and the United Kingdom. The William and Flora Hewlett Foundation have also contributed to funding GSI research and communications activities.

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**The Energy and Resources Institute (TERI)** is a leading science and policy research institution committed to working for global sustainable development. The focus of TERI's initiatives has been to address the diverse challenges of ensuring equity, efficiency and optimal utilization of resources. The institute was formally established in 1974 with the purpose of tackling and dealing with the immense and acute problems that mankind is likely to face in the years ahead

- on account of the gradual depletion of the earth's finite energy resources which are largely non-renewable; and
- on account of the existing methods of their use which are polluting.

Over the years, the Institute has developed a wider interpretation of this core purpose and its application. Consequently, TERI has created an environment that is enabling, dynamic and inspiring for the development of solutions to global problems in the fields of energy, environment and sustainable development. The Institute's growth has been evolutionary, driven by a vision of the future and rooted in challenges looming today, based on an approach that looks beyond the present and across the globe. TERI has grown to establish a presence not only in different regions of India but is perhaps the only developing country institution to have established a presence in North America and Europe and on the Asian continent in Japan, Malaysia and the Gulf.

TERI's Centre for Research on Energy Security (CeRES) functions as the Institute's nerve centre for work on emerging strategic issues and persistent policy challenges in the energy domain, covering energy economics, geopolitics and trade, technology development, infrastructure, and pricing and regulation. The Centre engages in transdisciplinary policy research and multistakeholder dialogues on energy security, and works towards forging strategic partnerships with research institutes globally.

The **TERI University** was established in 1998. Initially set up as the TERI School of Advanced Studies, it received the status of a deemed university in 1999. The University is a unique institution of higher learning exclusively for programmes leading to PhD and Master's level degrees. Its uniqueness lies in the wealth of research carried out within TERI—as well as by its faculty and students—making it a genuinely research-based University.

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