GSI Global Subsidies Initiative

iisd International Institute for Sustainable Development / Institut international du développement durable

RESEARCH REPORT

Fossil-Fuel Subsidy Reform in India: Cash transfers for PDS kerosene and domestic LPG

The Energy and Resources Institute
TERI University

August 2012

www.iisd.org/gsi

About IISD

The International Institute for Sustainable Development (IISD) contributes to sustainable development by advancing policy recommendations on international trade and investment, economic policy, climate change and energy, and management of natural and social capital, as well as the enabling role of communication technologies in these areas. We report on international negotiations and disseminate knowledge gained through collaborative projects, resulting in more rigorous research, capacity building in developing countries, better networks spanning the North and the South, and better global connections among researchers, practitioners, citizens and policy-makers.

IISD's vision is better living for all—sustainably; its mission is to champion innovation, enabling societies to live sustainably. IISD is registered as a charitable organization in Canada and has 501(c)(3) status in the United States. IISD receives core operating support from the Government of Canada, provided through the Canadian International Development Agency (CIDA), the International Development Research Centre (IDRC), and from the Province of Manitoba. The Institute receives project funding from numerous governments inside and outside Canada, United Nations agencies, foundations and the private sector.

Head Office
161 Portage Avenue East, 6th Floor, Winnipeg, Manitoba, Canada R3B 0Y4
Tel: +1 (204) 958-7700 | Fax: +1 (204) 958-7710 | Website: www.iisd.org

About GSI

GSI is an initiative of the International Institute for Sustainable Development (IISD). 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.

International Institute for Sustainable Development
Global Subsidies Initiative
International Environment House 2, 9 chemin de Balexert, 1219 Châtelaine, Geneva, Switzerland
Tel: +41 22 917-8373 | Fax: +41 22 917-8054

Fossil-Fuel Subsidy Reform in India: Cash transfers for PDS kerosene and domestic LPG
August 2011

The Energy and Resources Institute
TERI University

Acknowledgements

This report is a joint production of The Energy and Resources Institute and the International Institute for Sustainable Development. The authors are Anmol Soni, Anomitro Chatterjee, Kaushik Ranjan Bandyopadhyay with inputs from Kerryn Lang, Peter Wooders and Tara Laan. National Sample Survey Organisation data was provided by Mr. Aditya Ramji.

Internal peer review comments were provided by R. K. Batra and Deepti Mahajan. The report also greatly benefited from the peer review comments provided by Bhamy Shenoy; Masami Kojima at the World Bank; Marcelo Medeiros of the University of Brasilia.

This project could not have been undertaken without the generous support of its donors. The views expressed in this report do not necessarily reflect those of the International Institute for Sustainable Development's funders, nor should they be attributed to them.

Table of Contents

List of Tables

List of Figures

Abbreviations

AAY	Antyodaya Anna Yojana
APL	above poverty line
ASHA	Accredited Social Health Activist
BC	business correspondent
BPCL	Bharat Petroleum Corporation Limited
BPL	below poverty line
BSY	Balika Samridhi Yojana
CCT	conditional cash transfer
CPI	Consumer Price Index
DBC	double-bottle connection
FPS	Fair Price Shop
GAIL	Gas Authority of India Limited
HPCL	Hindustan Petroleum Corporation Limited
IGNOAPS	Indira Gandhi National Old age Pension Scheme
IOCL	Indian Oil Corporation Limited
JSY	Janani Suraksha Yojana
KL	thousand litres
LPG	liquefied petroleum gas
M&E	monitoring and evaluation
MGNREGS	Mahatma Gandhi National Rural Employment Guarantee Scheme
MoP&NG	Ministry of Petroleum and Natural Gas
MoRD	Ministry of Rural Development
MPCE	monthly per capita expenditure
MT	million tonnes
NCAER	National Council for Applied Economic Research
NPR	National Population Register
NSSO	National Sample Survey Organisation
OIL	Oil India Limited
OMC	oil marketing companies
ONGC	Oil and Natural Gas Corporation
PDS	Public Distribution System
PNG	Piped Natural Gas
PPAC	Petroleum Planning and Analysis Cell
RGGLVY	Rajiv Gandhi Gramin LPG Vitaran Yojana
RKVY	Rashtriya Krishi Vikas Yojana
SBC	Single Bottle Connection
SECC	Socio Economic and Caste Census
TPDS	Targeted Public Distribution System
UIDAI	Unique Identification Authority of India
VfM	value for money
WPI	Wholesale Price Index

Executive Summary

The government has historically subsidized four major petroleum products (petrol, diesel, kerosene and liquefied petroleum gas [LPG]) with the primary objective of increasing the affordability of these fuels and protecting domestic consumers from international price volatility. However, burgeoning subsidies have had a number of adverse consequences, including loss of revenues for the government and for oil companies, as well as inefficient consumption of fossil fuels. In 2011–2012 oil marketing companies incurred under-recoveries to the order of INR1,38,541 crore (US$27.06 billion). This burden increased by more than 75 per cent from that in 2010–2011 and has increased three times from the 2009–2010 figures.

As a country that is highly dependent on imported crude (almost 80 per cent of crude consumed is imported), it is crucial for India to ponder the appropriate delivery mechanism of petroleum products subsidies. The growing cost of under-recoveries and the economy-wide ramifications of the ad hoc pricing policy have brought about the urgent need to reform pricing of petroleum products, since each year of delay is adding significantly to the costs borne by the government, the oil sector and the economy in general.

Although a number of government committees and academic papers have examined the issue of subsidies, the actual progress on rationalizing prices has been limited. The amounts shown in Table ES1 will only get compounded over the next few years unless price rationalization is expedited, especially since demand for petroleum products and the price of crude oil are expected to go up significantly in the future.

TABLE ES1: FINANCIAL IMPACTS OF SUBSIDIES ON PETROLEUM PRODUCTS

Under-recoveries on sale of petroleum products in 2011–2012	INR1,385.41 billion (US$27.06 billion)
Total government subsidy bill on public distribution system kerosene and domestic LPG in 2011–2012	INR30 billion (US$0.59 billion)
Potential losses due to 40 per cent diversion of PDS kerosene at 2005–2006 prices	INR50 billion (US$1.13 billion)
Excise duty on diesel potentially being lost at 2005–2006 prices due to diversion	INR10.21 billion (US$0.23 billion)

Source: PPAC (2012a) and author's calculations

In view of the above, this report revisits and reviews the existing mechanism of subsidy delivery through public distribution systems (PDSs) and examines the possibility of using cash transfers as an option for fossil-fuel subsidy reform. In an era of rapid technological change, it would be worthwhile to explore new technology-aided options not just to improve the mechanism of subsidy delivery, but, primarily, to ensure that the subsidies reach the intended beneficiaries. Such measures would also minimize inefficient and illegal usage of subsidized fuels. The report draws on relevant existing literature and insights from international experiences in implementation of cash transfers. The report focuses specifically on kerosene distributed through the PDS and LPG used by households (termed as "domestic LPG") since these are the two fuels for which cash transfers are being considered most strongly as an option for subsidy delivery.

On the basis of some approximate calculation carried out in the report, it has been observed that if the price of PDS kerosene had been deregulated in 2010–2011 and the sum of under-recoveries and subsidies saved on this fuel were used to finance cash transfers to all families living below the poverty line, each household could have potentially received between INR1,565.57 (US$34.34) per annum (if 50 per cent of the amount saved was redistributed) and INR3,131.14 (US$68.70) per annum (if all of the amount saved was redistributed). For domestic LPG, calculations have been made based on the amount of subsidies accruing to each expenditure decile on the basis of household level National Sample Survey Organisation data for 2009–2010 (Ministry of Statistics and Programme Implementation, 2011). The figures show that the approximate amount that could be saved by capping subsidized cylinders at eight per year per household works out to more than INR4,000 crore (US$897.21 million), which is 17 per cent of the total subsidies and under-recoveries on LPG incurred in the year 2010–2011.

This report examines secondary data on a pilot project on implementing cash transfers that is underway in the Kotkasim block of Alwar district in Rajasthan. The initial results available in the public domain do paint a positive picture, with around a 80 per cent reduction in kerosene purchase in this block. It would be premature to draw conclusions on the efficacy of cash transfers on the block itself unless a well-designed impact assessment of implementing cash transfers on beneficiaries is carried out. Furthermore, the replicability of positive fallouts of implementing cash transfers on a country-wide basis would depend on the institutional and governance mechanisms underlying such implementation.

This report contributes to the existing literature by identifying the key design elements and challenges that would need to be addressed while planning a nationwide cash transfer scheme for kerosene and LPG.

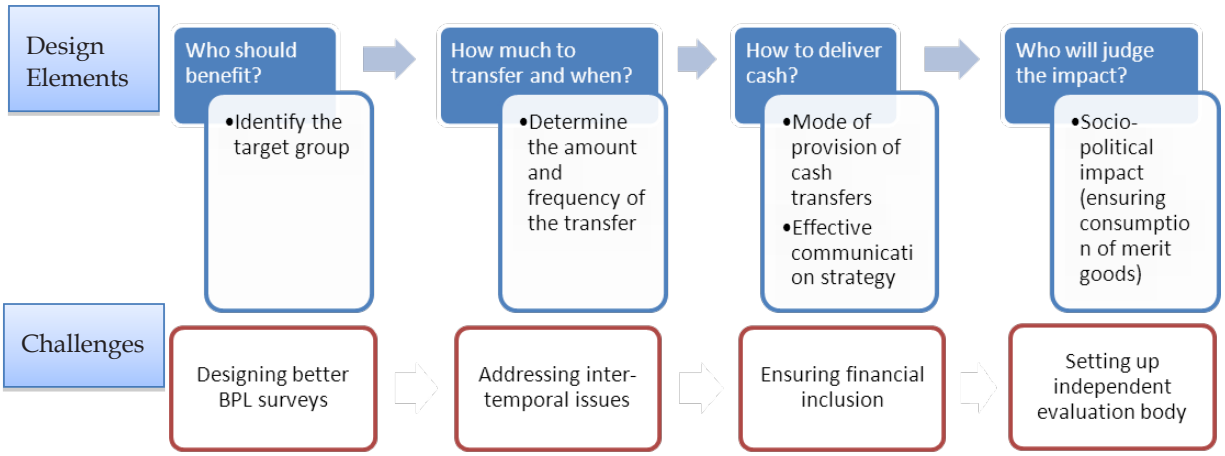

FIGURE ES1: DESIGN ELEMENTS AND CHALLENGES FOR IMPLEMENTING CASH TRANSFERS

In view of the complex existing system of subsidy delivery and the current state of technology and enabling infrastructure, this report has divided its recommendations into two categories. The first is termed as "short-term recommendations," which should be addressed at the earliest (ideally by March 2014). The second category includes "long-term recommendations" which, though essential, will take longer to put in place (potentially over the next five years). Furthermore, the central government should ensure that states have adequate incentives to set up the requisite enabling infrastructure as swiftly as possible to mitigate inefficiencies in the existing system at the earliest.

Short-term recommendations:

- **More pilot studies:** At the national level, a representative sample of pilot sites should be chosen, accounting for rural/urban areas, poor/middle-income groups and connected/remote areas. The program should be led and administered by the district-level authorities concerned (as in Alwar) and with due involvement of the banking sector and the informatics department of the government.
- **Value for money and cost-benefit analyses on cash transfers:** The value for money and cost benefit analyses should cover all possible costs of the program, ranging from the costs of establishing, administration, identification/targeting, size of the transfer, operational expenses, and monitoring and evaluation.
- **Capping of subsidized cylinders:** A standard national cap should be imposed on the number of subsidized cylinders that each household can purchase in one year. This report identifies this as the best short-term option to reduce under-recovery and subsidy burden, while not affecting the efforts to increase penetration of affordable LPG in the country. However, this is an interim recommendation only and the cap should be discontinued when a more permanent mechanism is put in place.

Long-term recommendations

- Implementing cash transfer schemes contingent upon results of pilots
- Designing better below-poverty-level surveys
- Increasing financial inclusion
- Indexing payments to changes in price level
- Calibrated decontrol of LPG prices
- Improving supply chain of PDS kerosene and domestic LPG

1.0 The Backdrop

1.1 Introduction

In conjunction with the rapid economic progress witnessed in the country, the total energy demand in India has increased substantially over the past decade. While this progress has contributed to economic development in the country, a large segment of the population still lacks access to modern and clean sources of energy. Further, since almost 80 per cent of the crude oil consumed in India is imported, the domestic economy is susceptible to the vagaries of international prices.

In an effort to improve energy access, shield domestic consumers from international price volatility and support energy-intensive industries (such as public transport and freight), the government has historically subsidized the four major petroleum products (petrol,[1] diesel, kerosene and liquefied petroleum gas [LPG]). However, subsidies have had only limited success in meeting these objectives. The unintended consequences of subsidies include loss of revenues for the government and oil companies, as well as inefficient consumption of fossil fuels.[2]

For instance, LPG penetration remains low (Office of the Registrar General and Census Commissioner, India, 2011) and a large portion of the subsidy on this fuel accrues to relatively well-off unintended beneficiaries. Similarly, while kerosene is subsidized to provide a source of lighting in areas lacking access to reliable electricity supply, several studies have shown that a large portion of public distribution system (PDS) kerosene is diverted towards adulteration of diesel (National Council for Applied Economic Research, 2005). While subsidies on diesel have been provided to benefit the public transport and freight transport sectors, the price difference between petrol and diesel has also created perverse incentives for private motorized modes and led to higher sales of personal vehicles that are based on diesel and usage of diesel in place of fuel oil in the industry.

1.1.1 A Snapshot of Petroleum Product Subsidies in India

The selling prices of diesel, kerosene and LPG are kept below market prices[3] by the government. These products together form almost two thirds of the total petroleum product consumption in the country. To partly compensate for this gap, since 2002 the government has been providing a fixed per-unit fiscal subsidy on kerosene sold through the PDS at the rate of INR0.82 (US$0.02[4]) per litre and on the LPG used for cooking in the households (domestic LPG) at INR22.58 (US$0.5) per cylinder. However, these fiscal subsidies are very small when compared with the gap between the selling and cost prices of the products. This widening gap has led to large *under-recoveries* for government-owned oil marketing companies (OMCs), such as Indian Oil Corporation Limited (IOCL), Bharat Petroleum Corporation

[1] Although the price of petrol was officially decontrolled in 2010, the decontrol of diesel price has been kept on hold primarily due to possible inflationary impacts of deregulation of diesel prices. In the case of petrol, the oil companies need to seek the approval of the government before revising the prices every fortnight.

[2] See a more detailed discussion on this in *A Citizens' Guide to Energy Subsidies in India* published by IISD in collaboration with TERI in 2012. Available at: www.iisd.org/publications/pub.aspx?id=1581

[3] 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 is a weighted average of import and export parity prices in a ratio of 80:20. The 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, the 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 India, a combination of these pricing mechanisms is followed depending on whether the country is a net importer or exporter of the product. Diesel and petrol prices are based on a trade parity basis, whereas kerosene and LPG prices are determined on an import parity basis.

[4] At the annual average exchange rate for 2010–2011 of INR45.58 per US$1

Limited (BPCL) and Hindustan Petroleum Corporation Limited (HPCL). The issue of under-recoveries was examined in detail by the Committee on Pricing and Taxation of Petroleum Products (Government of India, 2006), headed by C. Rangarajan. According to this report, the difference between the cost price and the realized price represents the under-recoveries of the OMCs.

It should be noted here that these under-recoveries do not reflect profits or losses of the OMCs, since these companies are integrated oil companies with a presence in the refining, pipelines and marketing segments. Therefore, while computing profits or losses, income flows from sources such as the refining revenues, income from investments and other sources of revenue are also included and do not represent the status of the marketing segments only. So the under-recovery, which only affects the marketing segment, is the difference between the price at which OMCs purchase petroleum products from refining companies and sell it to the final consumers, after accounting for any fiscal subsidies.

Table 1 summarizes the under-recoveries and fiscal subsidies for the past five years.

TABLE 1: FISCAL SUBSIDY AND UNDER-RECOVERY ON PETROLEUM PRODUCTS

	FISCAL SUBSIDY		UNDER-RECOVERIES	
Year	In INR crore*	In US$ million**	In INR crore	In US$ million**
2007–08	2,641	656.30	77,123	19,165.28
2008–09	2,688	585.40	103,292	22,495.37
2009–10	2,770	584.18	46,051	9,712.00
2010–11	2,904	637.17	78,190	17,155.66

Source: Petroleum Planning and Analysis Cell [PPAC] (2011a); PPAC (2012b)
** A crore is a unit of measure in the South Asian numbering system equal to 10 million.*
*** All conversions are based on annual average of exchange rate over the corresponding year. (Rate available in Reserve Bank of India, 2011)*

As can be seen, while the fiscal subsidy has increased only marginally, the under-recoveries have almost doubled between 2009–2010 and 2010–11. In terms of product-wise share, the largest share is of diesel, followed by domestic LPG and PDS kerosene. Figure 1 shows the product-wise share of under-recoveries in 2011–2012.

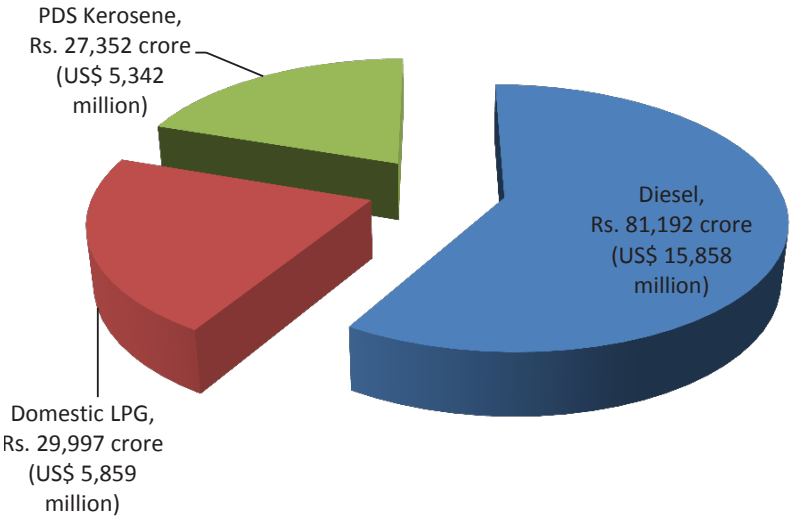

FIGURE 1: PRODUCT WISE-SHARE OF UNDER-RECOVERIES (2011–2012)

Source: Petroleum Planning and Analysis Cell (PPAC, 2012a)

The under-recoveries are compensated for in two ways. First, the government provides cash assistance to the OMCs. This compensation varies from time to time and is provided on "as per need" basis. The payment is not fixed and is often released very late, thereby affecting the investment plans of the companies.[5] A product-wise distribution of government's compensation is also not available. Until 2008–2009 the government provided off-budget assistance in the form of special bonds called "oil bonds" that were issued to OMCs. These were issued in tranches over the course of a financial year and accounted as income in the OMCs' profit and loss statements. Interest rates were set anywhere between 6 per cent and 9 per cent and the bonds were given a period of maturity of up to 20 years. Since only their interest payments are accounted for as spending in the budget, oil bonds do not have any significant fiscal impacts at the point of issue. However, once the bonds are due, the repayment costs will have to be met from budgetary allocations (Soni, 2011). However, following the budget announcement in 2009–2010, oil bonds were stopped and partial cash assistance from the government replaced them.

Second, the government has devised a burden-sharing formula by which Oil and Natural Gas Corporation (ONGC), and Oil India Limited (OIL) share one third of the under-recovery (Parliamentary Standing Committee on Petroleum and Natural Gas, 2011b), since these companies were awarded exploration blocks on a nomination basis by the government. The assistance from upstream companies is provided in the form of discounts on sales of crude oil. In 2011–2012 ONGC and OIL provided discounts at rates of US$62.69/barrel and US$54.83/barrel respectively to the refining arms of downstream companies (Oil and Natural Gas Company India, 2012; Oil India Limited, n.d.). Although the burden-sharing mechanism was initially devised to cover only the upstream companies, now even the primarily midstream Gas Authority of India Limited (GAIL) has also been mandated to share a portion of the under-recovery on LPG, since the price at which it sells LPG to OMCs is in line with international prices (Livemint.com, 2010).

[5] As mentioned in the report of the Parliamentary Standing Committee on Petroleum and Natural Gas (2011b), government assistance is at best arbitrary: "As regards budgetary support, compensation to OMCs is decided by the Government based on various factors like feasibility of the Government to allocate funds from budgetary sources and capacity of the OMCs to absorb a part of their under-recoveries. The actual burden sharing ratio has varied from year to year on this account." (p. 41).

Finally, the remaining portion of under-recoveries, if any, is absorbed by the OMCs themselves.

Table 2 presents the pattern of burden sharing of under-recoveries for the last two financial years

TABLE 2: UNDER-RECOVERY BURDEN SHARING

	GOVERNMENT CASH ASSISTANCE/ OIL BONDS		ASSISTANCE FROM ONGC, OIL, GAIL		BORNE BY OMCS	
Year	In INR crore	In US$ million	In INR crore	In US$ million	In INR crore	In US$ million
2007–08	35,290	8,769.66	25,708	6,388.51	16,125	4,007.11
2008–09	71,292	15,526.28	32,000ˆ	6,969.10	0#	0
2009–10	26,000	5,483.31	14,430	3,043.24	5,621	1,185.45
2010–11	41,000	8,995.80	30,297	6,647.46	6,893	1,512.39

Source: Parliamentary Standing Committee on Petroleum and Natural Gas (2011b)
ˆIn addition to this, import losses amounting to INR903 crore (US$196.66 million) were compensated by upstream companies.
 # The OMCs did not bear any part of under-recoveries this year. Most of it was compensated by the unusually high assistance from the government in the form of oil bonds.
**Calculated as a difference between the assistance received and total under-recoveries*

For 2011–2012 the upstream companies have contributed INR55,000 crore towards meeting the under-recoveries in the form of discounts. Of this, ONGC has contributed the largest share followed by OIL and GAIL (Figure 2).

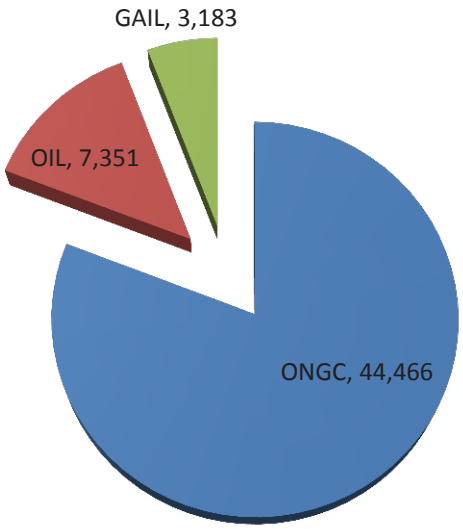

FIGURE 2: COMPENSATION BY UPSTREAM COMPANIES
Source: Oil India Limited (n.d.)

1.1.2 Impact of Subsidies

The regulated pricing regime and under-recovery burden-sharing mechanism has had an impact on all stakeholders. The growing share of government assistance has worsened the fiscal balance of the country. Within the past year, the contribution from the exchequer in meeting the under-recoveries of the OMCs has increased by more than 100 per cent. This rising share of burden is a strain for the finances of the central government and reduces the funds available for other development-related expenditure. In 2010–2011 government assistance to the petroleum sector (fiscal subsidy and under-recovery burden sharing) formed almost 11 per cent of the gross fiscal deficit. The growing burden of subsidies on the fiscal budget has also affected the country's investment grading with global rating agency Standard & Poor's threatening to downgrade India's status to junk and Fitch actually doing that (*The Hindu*, 2012a). The diversion and misuse of subsidized products has only compounded the impacts since it affects the revenues earned by the government through evasion of excise duty.[6]

Subsidies also affect the oil sector since the government-owned OMCs face a considerable amount of uncertainty regarding future pricing mechanisms, the expected assistance from the government and upstream companies. This makes the companies increasingly dependent on borrowings to fund their investments and therefore raises the debt-equity ratios and the interest burden of the companies. Further, subsidies also adversely affect the expansion plans of the companies. In a joint press statement issued by IOCL, BPCL and HPCL on June 5, 2012, these companies explained that although their combined turnover was INR8,33,000 crore (US$162 billion) in 2011–2012, their combined profits were only INR6,177 crore (US$1.2 billion), which is 0.7 per cent of their turnover. As of June 1, 2012, the OMCs were incurring daily under-recoveries of INR457 crore (US$82.28 million[7]) on sales of diesel, kerosene and LPG (PPAC, 2012b). This has also affected the level of private sector participation in the sector. While the retail sector was opened to the private sector, companies have either shut down their petrol pumps or are operating very few of them. This sharing of under-recoveries by the upstream companies affects the availability of funds for investment in enhancing production of crude oil/natural gas and contributing towards ensuring the country's energy security.

While there is a need for reforming petroleum product subsidies, the issue needs to be approached in a manner that minimizes the impact on the vulnerable sections and does not adversely affect the initiatives on fuel efficiency or penetration of cleaner fuels. Particularly important in this context are the subsidies on kerosene and LPG that are provided at the household level to address the cooking and lighting energy requirements. Adequate safety nets or compensatory mechanisms that directly address the concerns of the households should be put in place before going ahead with the full-throated rationalization of prices. The scope of this report is confined to an in-depth examination of the current system of providing subsidies on kerosene and LPG and delving into one of the instruments currently being considered by the government for delivering the subsidy to the intended beneficiaries, namely cash transfers.

1.2 Domestic LPG

LPG is a light distillate obtained from crude oil as well as from processing of natural gas. It is primarily used for cooking purposes in residential as well as commercial establishments. LPG meant for household purposes (termed as "domestic LPG") is bottled in 14.2 kilogram and 5 kilogram[8] cylinders and supplied by authorized distributors

[6] This is discussed in detail in later sections.

[7] At the exchange rate of INR55.54/US$1 applicable on June 1, 2012

[8] Five-kilogram cylinders are supplied in some areas, especially in the hilly and rural regions. These cylinders were initiated with the purpose of increasing LPG penetration in lower income groups. The relative ease of transporting smaller cylinders allows these cylinders to be supplied in hilly/remote areas as well. Five-kilogram cylinders require a lower initial security deposit of INR350 per connection as opposed to INR1250 for 14.2-kilogram cylinders (INR900 in the northeastern states). The cost of refilling a 5-kilogram cylinder is also lower, at INR150 (INR100 in the northeastern states). More information can be found at http://indane.co.in/faq.php.

of OMCs at prices controlled by the government. Almost 95 per cent of LPG is consumed in the household sector and the remaining in manufacturing, commercial/industry sectors (Indiastat.com, n.d.). As of November 2011 the government reported a total of 132.8 million LPG customers in the country (Press Information Bureau, 2011a). Total consumption of LPG in India in the year 2010–2011 was 14.33 million tonnes (MT). The total production of LPG in the country was 9.71 MT, out of which 7.54 MT was produced from crude oil and 2.71 MT from natural gas (Ministry of Petroleum and Natural Gas [MoP&NG], 2012).

The government paid out a fiscal subsidy of INR1,974 crore (US$433.12 million) at the rate of INR22.58 per cylinder on LPG, while the under-recoveries (before compensation from government and upstream companies) on this fuel stood at INR21,772 crore (US$4,777 million) (MoP&NG, 2012; PPAC, 2011a). The average retail selling price of domestic LPG in Delhi was INR399 (US$7.79[9]) per cylinder over the period April–July 2011 (PPAC, 2011b). Figure 3 provides a price breakdown for each domestic LPG cylinder.

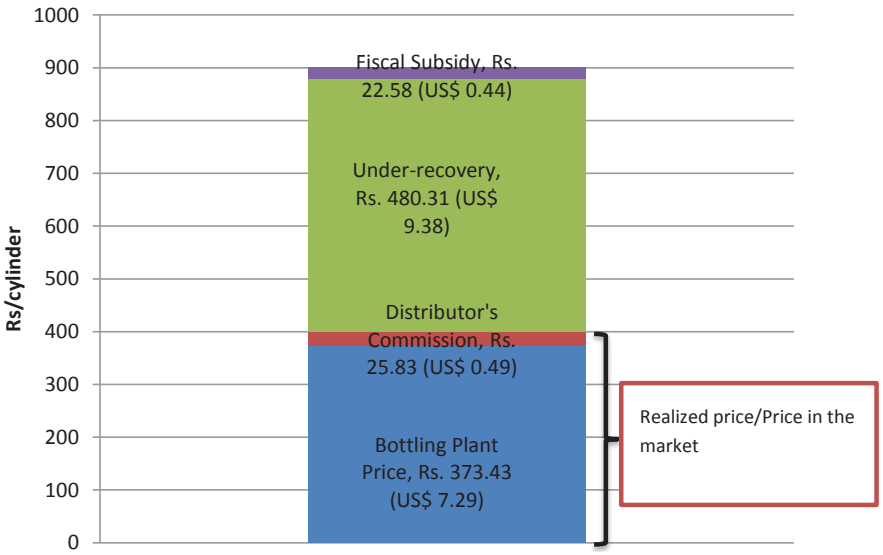

FIGURE 3: COMPONENT BREAKDOWN OF TOTAL DESIRED PRICE OF LPG (IN DELHI) AS OF MAY 1, 2012

Source: PPAC, 2012b (Conversions are based on the annual average exchange rate for 2011–2012 at INR51.2/US$1)

1.2.1 Supply Chain of LPG

The LPG supply chain involves the product (either domestically produced or imported) being sent to the bottling plants of the OMCs. From there, it is transferred to distributors at subsidized prices who, in turn, sell it to the final consumers. The schematic representation of the supply chain and subsidy delivery point is presented in Figure 4.

[9] At an exchange rate of INR51.20 per US$1

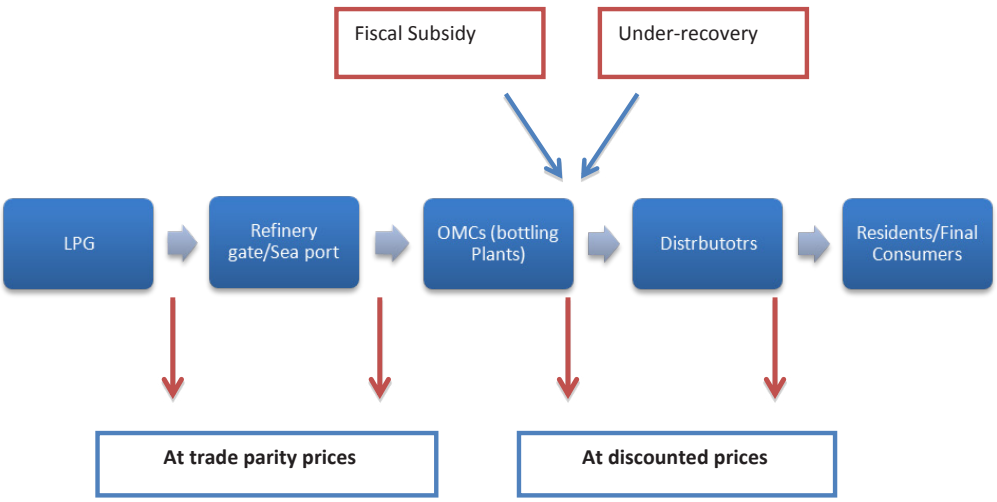

FIGURE 4: SUPPLY CHAIN OF LPG

The final price of a domestic LPG cylinder varies from one state to another; in the period of April–July 2011, the lowest average price was in Rajasthan (INR376/US$7.34 per cylinder), while the highest was in Madhya Pradesh (INR452/US$8.83 per cylinder) (PPAC, 2011b). The variation is due to differences in taxation structures between the states.

1.2.2 Penetration of LPG

Figure 5 indicates the distribution of households by primary fuel used for cooking as per the 2011 Census. The figures clearly indicate that firewood still continues to dominate as the main fuel for cooking in rural areas and LPG or piped natural gas (PNG) dominates as a fuel only among the urban masses. As per the Census (Office of the Registrar General and Census Commissioner, India, 2011) approximately 19 million households in rural areas and 51 million households in urban areas reported LPG as their primary cooking fuel.

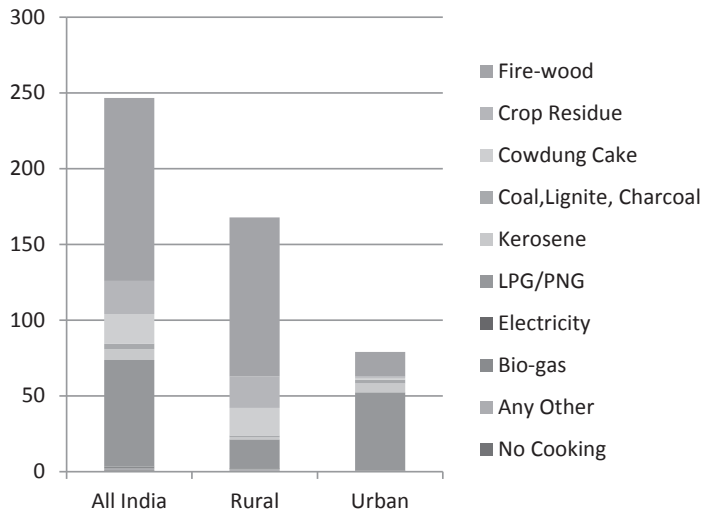

FIGURE 5: DISTRIBUTION OF HOUSEHOLDS AS PER FUEL USED FOR COOKING

Source: Office of the Registrar General and Census Commissioner, India (2011)

Since the subsidy provided on LPG is universal to all household (domestic) consumers, a larger proportion of the subsidy accrues to the rich households. Figures 6 and 7 present the number of households in each monthly per capita expenditure (MPCE) class reporting LPG as their primary fuel used for cooking in 2009–2010.

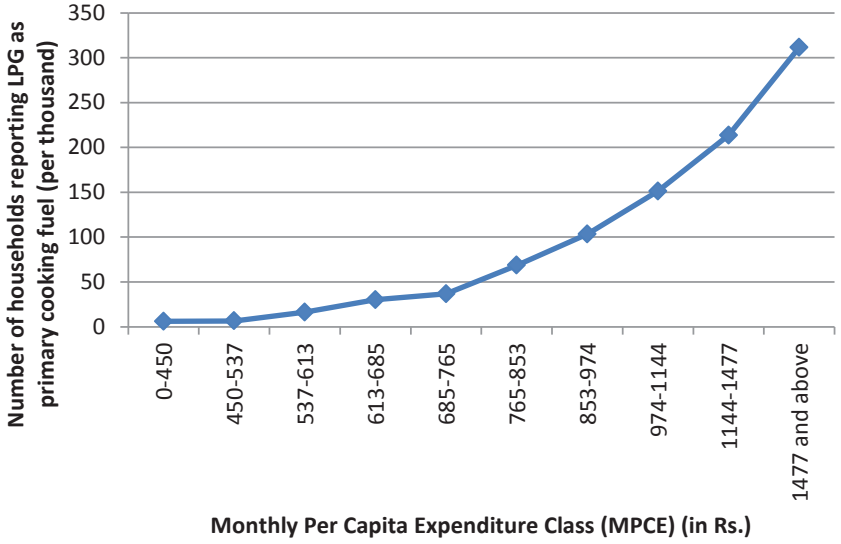

FIGURE 6: PENETRATION OF LPG IN RURAL HOUSEHOLDS BY INCOME CLASS

Source: Ministry of Statistics and Programme Implementation (2011)

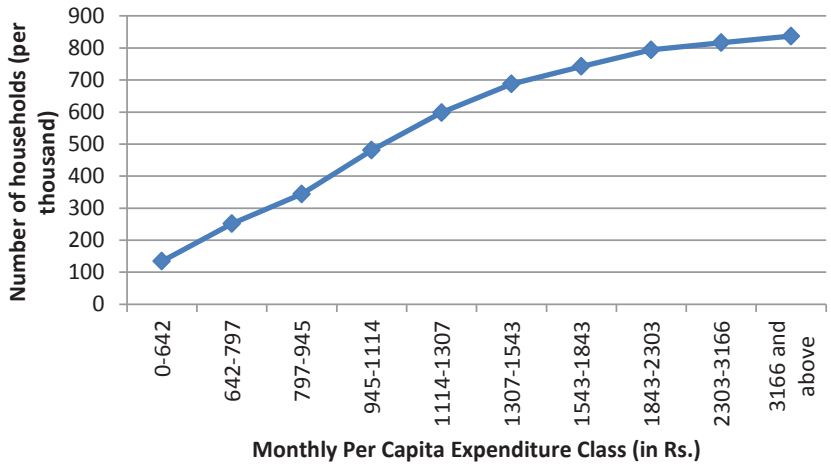

FIGURE 7: PENETRATION OF LPG IN URBAN HOUSEHOLDS BY INCOME CLASS

Source: Ministry of Statistics and Programme Implementation (2011)

As the penetration of LPG is low in rural areas, initiatives have been undertaken by the government to promote LPG usage in villages through a distribution scheme called the Rajiv Gandhi Gramin LPG Vitaran Yojana[10] (RGGLVY) under which small distributorships are being set up in rural areas. As part of *Vision-2015* adopted for the LPG sector, overall LPG coverage is targeted to reach 75 per cent of the national population, which translates to adding 55 million new customers by 2015 (MoP&NG, 2010).

An important issue that needs to be considered here is the policy and opinion on provision of clean cooking fuels in India. One of the objectives behind subsidizing LPG is to increase its uptake as a cooking fuel to replace the use of traditional fuels such as firewood and dung cakes that are ecologically harmful as well as inefficient. Despite the subsidy, the uptake of LPG has been limited and penetration of the fuel continues to remain low, as can be seen from the various rounds of the NSSO and Census (Figures 5–7). However, the burden of subsidies on LPG continues to grow and the benefits accrue disproportionately to the rich. The inequality in LPG consumption is shown in Figures 8 and 9. While this inequality is particularly pronounced in rural areas, urban areas present a more equitable distribution of LPG consumption across the population.

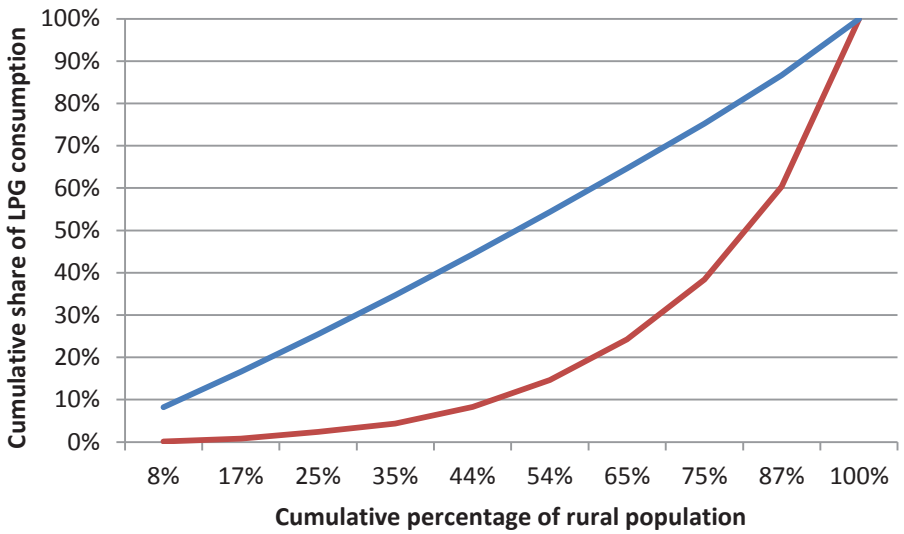

FIGURE 8: INEQUALITY IN LPG CONSUMPTION IN RURAL AREAS

Source: Ministry of Statistics and Programme Implementation (2011)

[10] The project was earlier called Rajiv Gandhi Gramin LPG VitarakYojana

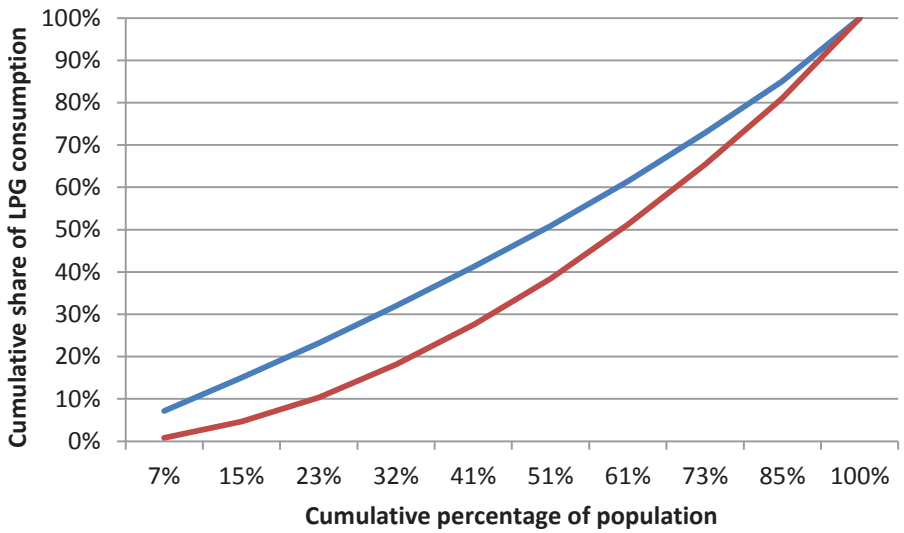

FIGURE 9: INEQUALITY IN LPG CONSUMPTION IN URBAN AREAS

Source: Ministry of Statistics and Programme Implementation (2011)

There is a need to re-examine the policy of increasing access to cleaner cooking fuels by subsidizing LPG. This is particularly true when keeping in mind the rising international prices of crude oil and petroleum products. Other alternatives, such as provision of biogas-based cooking energy and the provision of clean cook stoves, also need to be examined for the short-to-medium term. This will also provide the time frame required to set up appropriate distribution networks to facilitate the uptake of LPG (International Energy Agency, 2011). Further, as described in Ekholm, Krey, Pachauri & Riahi (2010), provision of LPG financing to ease the high upfront costs coupled with subsidies can help in transitioning to this cleaner fuel.

1.2.3 Malpractices in Domestic LPG Market

A number of malpractices have set into the LPG market. Several households own multiple LPG connections issued by different oil companies. In other cases where PNG has been provided as a safer alternative to domestic LPG, it has been observed that domestic LPG users have not surrendered their connections even after receiving a PNG connection. This leads to inefficient consumption and diversion of domestic LPG cylinders towards commercial usage. Often, distributors choose to sell domestic LPG cylinders meant for households (which may already have a PNG connection) to small commercial businesses at prices above the subsidized price for the cylinders (Mishra, 2011).

The Liquefied Petroleum Gas (Regulation of Supply and Distribution) Order, which was legislated in 2000 and amended in 2009, stipulates that when an existing consumer of domestic LPG is provided with a PNG connection, his/her LPG connection is to be surrendered within 60 days of the date of receiving the PNG connection. Government oil companies have now started blocking LPG connections in households that have been connected with the PNG network. As of December 1, 2011, 680,914 LPG connections have been blocked for the customers with PNG connections by the OMCs (Lok Sabha, 2012b). The total number of PNG connections in India was 1,588,000 as of November, 2011 (Press Information Bureau, 2011a).

1.2.4 Initiatives for Reform: Capping LPG Cylinders

In an effort to reduce the subsidy on domestic LPG, the government announced its plan to cap the number of subsidized cylinders that consumers would be allowed to purchase in a year (Press Information Bureau, 2011b). Further, a similar recommendation was made to the Ministry of Petroleum and Natural Gas by the Task Force on Direct Transfer of Subsidies on Kerosene, LPG and Fertiliser (Government of India, 2011b).

Any cylinders purchased over and above this cap will be sold only at market price. This move is currently under consideration. In its report, the Parliamentary Standing Committee on Petroleum and Natural Gas had considered the cap at four cylinders per year. However, in a press release, it was mentioned that the cap on the number of cylinders being considered is seven. (Press Information Bureau, 2011d). Further, in its reports, the committee has also recommended removing provision of subsidized cylinders to the affluent (Parliamentary Standing Committee on Petroleum and Natural Gas, 2011a; 2012).[11] There is currently no clarity on this issue. Table 3 presents the monthly consumption of LPG in rural and urban households.

TABLE 3: MONTHLY CONSUMPTION OF LPG IN RURAL AND URBAN HOUSEHOLDS

RURAL			URBAN		
MPCE CLASS		LPG CONSUMPTION	MPCE CLASS		LPG CONSUMPTION
(in INR)	(in US$)	(in kg)	(in INR)	(in US$)	(in kg)
0-450	0-9.49	4.4	0-642	0-13.54	4.3
450-537	9.49-11.33	8.7	642-797	13.54-16.81	10.4
537-613	11.33-12.93	8.1	797-945	16.81-19.93	10.9
613-685	12.93-14.45	8.8	945-1114	19.93-23.49	11.3
685-765	14.45-16.13	9.0	1114-1307	23.49-27.56	11.4
765-853	16.13-17.99	9.1	1307-1543	27.56-32.54	11.7
853-974	17.99-20.54	9.3	1543-1843	32.54-38.87	12.1
974-1144	20.54-24.13	9.5	1843-2303	38.87-48.57	12.1
1144-1477	24.13-31.15	9.6	2303-3166	48.57-66.77	12.2
1477 or more	31.15 or more	9.9	3166 or more	66.77 or more	12.1

Source: Ministry of Statistics and Programme Implementation (2011)[12]

Assuming a cap is placed at eight cylinders a year,[13] the total savings generated from lower subsidy (and under-recovery) payout could be around INR4,089.22 crore (US$897.22 million).[14] This is 17.24 per cent of the total subsidy and under-recovery amount (INR23,719 crore/US$5.2 billion) on domestic LPG for the year 2010–2011.

[11] The affluent have been defined as "rich and affluent section of population having an income of more than INR600,000 per annum including those holding constitutional posts, public representatives like MP's, MLA's/MLC's, Sr. Government Officials etc."(Parliamentary Standing Committee on Petroleum and Natural Gas, 2012).

[12] The extraction has been done by TERI based on uniform recall period basis.

[13] Eight cylinders is the approximated average annual consumption of the median MPCE class in rural areas.

[14] The detailed calculations are placed in the Appendix. It is assumed that households consuming more than eight cylinders will pay prices where no subsidies and under-recoveries are paid.

In this regard, the Parliamentary Standing Committee on Petroleum and Natural Gas (2011a) had also recommended that provision of an LPG subsidy to the rich and affluent should be done away with.[15] This recommendation was reiterated in the report submitted by the committee in December 2011 (Parliamentary Standing Committee on Petroleum and Natural Gas, 2011b). In its *Action Taken Report*,[16] the government stated that a proposal had been submitted to the government and the matter was under consideration of the "Empowered Group of Ministers regarding the under-recoveries of the OMCs."

1.3 PDS Kerosene

Kerosene oil is a middle distillate obtained from crude oil. Total consumption of PDS kerosene in 2010–2011 was at 8.93 MT. Total production of kerosene in India during the year stood at 7.70 MT. Much like LPG, kerosene is largely consumed in the household sector with very small quantities being consumed in the commercial and industry sectors.

The fiscal subsidy payment on kerosene by the government (INR0.82/US$0.02) per litre) was INR931 crore (US$204.27 million) in 2010–2011, while the OMCs incurred under-recoveries (before compensation) of INR19,484 crore (US$4,275 million) on this fuel over the year (MoP&NG, 2012; PPAC, 2011a). The current price of PDS kerosene in Delhi is INR14.83 (US$0.29) per litre. After maintaining the price in the range of INR8–10 (US$0.18–0.22[17]) per litre for over eight years, the price was increased substantially (by about INR3/US$0.66 per litre) in June 2010 and subsequently by a little over INR2 (US$0.04) per litre in June 2011. The decision to increase the prices was taken by the government primarily to address the problem of rising under-recoveries of the OMCs. The retail selling price of PDS kerosene differs marginally from one state to another on account of differences in each state's tax structure on the fuel. Within a state, retail price of PDS kerosene may vary due to differences in transportation costs at various areas, which are passed on to the consumers (Planning Commission, 2005). Figure 10 provides a breakdown of the price of PDS kerosene.

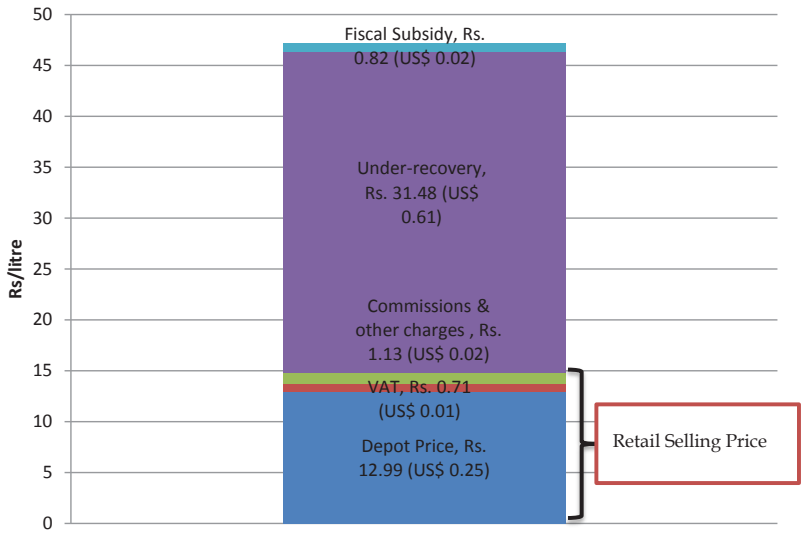

FIGURE 10: COMPONENT BREAKDOWN OF TOTAL DESIRED PRICE OF KEROSENE

Source: PPAC, 2012b

[15] Members of the committee had dissented to this recommendation and also to the recommendation of limiting the number of subsidized cylinders to four.

[16] This is a status report on implementation of recommendations by Standing Committee.

[17] At an exchange rate of INR45 per US$1

Through the PDS, the government provides subsidized kerosene to targeted[18] households. In the absence of electricity, kerosene has long been a source of lighting for poorer sections of the population (in addition to more expensive vegetable oil-based lamps).

Figure 11 shows the distribution of households in India by primary fuel used for lighting. Kerosene is used for lighting primarily in the rural areas, but not as much in the urban areas.

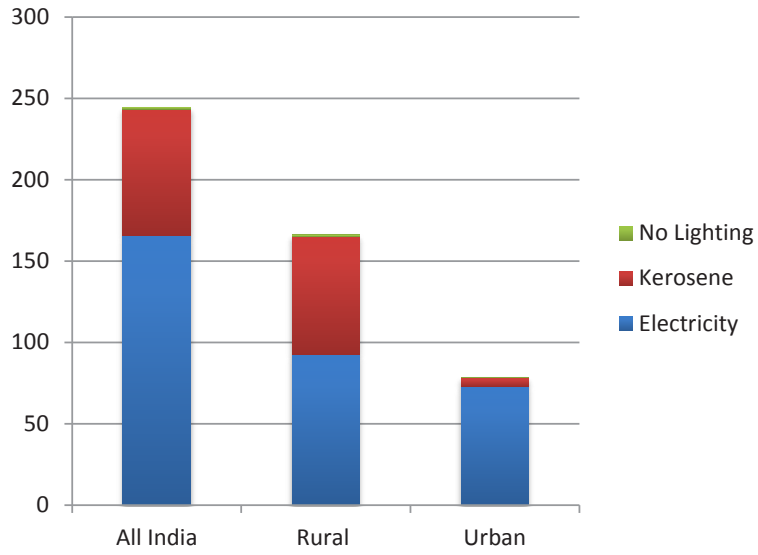

FIGURE 11: DISTRIBUTION OF HOUSEHOLDS BY PRIMARY FUEL USED FOR LIGHTING

Source: Office of the Registrar General and Census Commissioner, India (2011)
Note: In addition to electricity and kerosene, households also reported usage of other fuels such as solar power and other oils that were insignificant.

The following sections examine the distribution mechanism of PDS kerosene in India. The intended beneficiaries, the supply chain of kerosene and the pitfalls of the system are also described here.

1.3.1 Supply Chain of PDS Kerosene

The supply chain of kerosene distributed through the PDS is illustrated in Figure 12.

[18] The subsidy is provided to households that are below the poverty line and have ration cards to prove their economic status. The subsequent sections discuss the targeting and identification of beneficiaries in the PDS in greater detail.

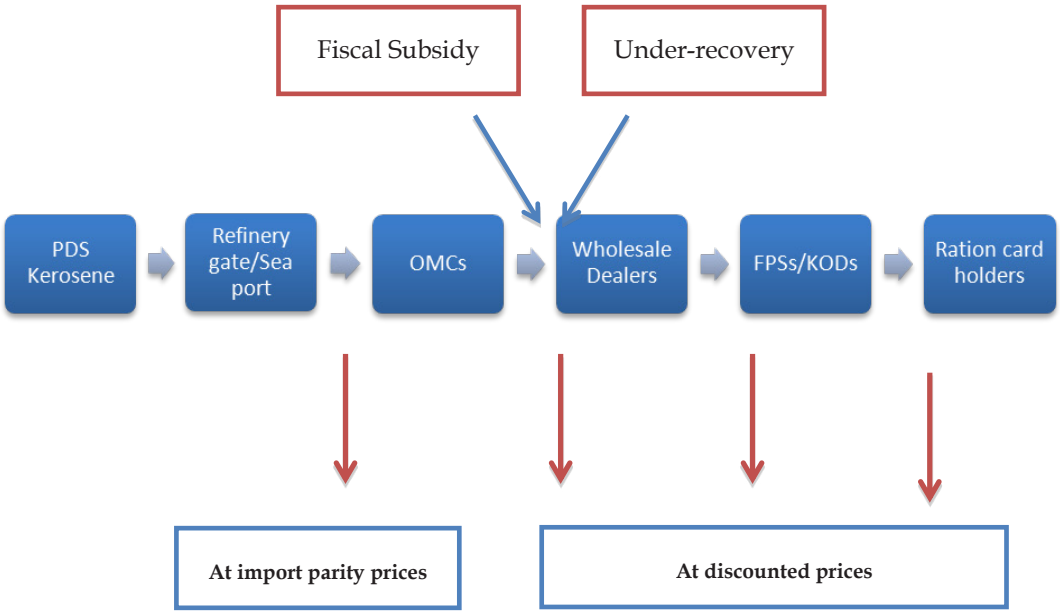

FIGURE 12: SUPPLY CHAIN OF PDS KEROSENE

In the beginning of the financial year, the petroleum ministry allocates a certain quantity of PDS kerosene to each state. The allocation is made primarily on the basis of the allocations during the previous year. Adjustments are made taking into consideration coverage of LPG and national average of per capita allocation of PDS kerosene for states. Further, such quantity of the quota that remains unlifted by the states within the stipulated period is generally reduced from the allocation for the next year.[19] In Delhi, for instance, the allocated quota was reduced by 56 per cent for the year 2011–2012 as compared to the allocation in 2010–2011.

The civil supply department of each state government then determines the allocation to each district within the state on the basis of historical allocations. Thereafter, the concerned District Supply Offices, in consultation with the oil companies, break down each district's allocations into individual dealer allocations. Each company supplies the product to its own dealers (at the district level) at the subsidized price (which is termed the "depot price"). The dealerships, or "wholesalers," supply kerosene to the Fair Price Shops (FPSs), after charging their own commission on the subsidized price. Ration card holders can then purchase subsidized kerosene from the local FPSs/kerosene oil depots.

A clear distinction can be noted here between the delivery mechanisms of kerosene and LPG. Whereas in case of LPG, the oil companies are responsible for delivering the product up to the final consumer, in case of kerosene, the state and district authorities take over at the distribution level.

[19] The kerosene quota has not been reduced in some states such as the northeastern states, the island territories (Andaman and Nicobar, Lakshadweep), Bihar and Jammu and Kashmir, where coverage of LPG is below the national average or there have been law and order problems.

1.3.2 The Targeted Public Distribution System in India

The Targeted Public Distribution System (TPDS) functions through more than 500,000 FPSs (Lok Sabha, 2010) across the country. These FPSs, known locally as "ration shops," function as retail outlets from which end-consumers can purchase PDS products at subsidized rates.

The TPDS is a joint responsibility of the central and state governments. The Department of Food and Public Distribution of the Ministry of Consumer Affairs, Food and Public Distribution administers the system. The central government procures the products, stores them whenever necessary, and allocates a specific quantity of wheat, rice, sugar, coarse grains, edible oils and kerosene to each state.

The operational responsibilities of the TPDS in each state, including allocation within the state, identification of families below the poverty line, the issue of ration cards, supervision and monitoring the functioning of FPSs rest with respective state governments.

1.3.3 Beneficiaries of the TPDS

Subsidized products under the purview of the TPDS are distributed only to ration card holders. The ration cards are differentiated to distinguish between above poverty line (APL), below poverty line (BPL) and Antyodaya Anna Yojana[20] (AAY) consumers. The AAY category includes the poorest of poor households. The National Common Minimum Programme of the United Progressive Alliance (UPA) government and the Union Budget 2004–2005 define the criteria to be used to identify AAY households (Department of Food and Public Distribution, 2012).

1.3.4 Criteria for Allocation of PDS Kerosene

Allocation of PDS kerosene to each ration card holder depends on whether the individual has an LPG connection. Consumers who have a double-bottle connection (DBC)[21] do not receive kerosene allocations from the state government. In most states, the PDS kerosene quota is higher for card holders who have no LPG connection than those who have a single-bottle connection (SBC). The criteria for determining PDS kerosene quota for each household differs between states. For example, in Rajasthan, DBC consumers are not entitled to kerosene, SBC consumers are entitled to 2 litres of kerosene per ration card per month and those without a gas connection are entitled to 3 litres per card per month.[22] Similarly, in Madhya Pradesh, DBC consumers do not get kerosene while SBC consumers in the APL category are entitled to 2 litres per card per month (Wadhwa, 2009). Those without gas connections are entitled to 4 litres of kerosene if they have an APL card and 5 litres if they have a BPL card. In contrast, in the state of Punjab and Haryana, ration card holders who have SBCs or DBCs are not entitled to any kerosene (Government of Punjab, 2012; Government of Haryana, 2012). It is interesting to note that although kerosene is used primarily for lighting purposes, the allocation is determined directly on the basis of LPG connections and not access to electricity.

[20] The Government of India launched the AAY in December 2000 to provide special subsidies on food grains to the poorest of the poor. The scheme is directed towards the poorest 5 per cent of the population, which includes people who do not get even two square meals a day. After three successive expansions, the scheme now covers more than 2.5 crore households.

[21] A DBC consumer is entitled to keep two subsidized LPG cylinders at any point of time, whereas an SBC consumer is allowed to keep only one cylinder at any point. A cylinder is replaced on request and one empty cylinder is taken away when a new one is delivered to the household.

[22] http://food.rajasthan.gov.in/documents/Kerosene_Orders.pdf

1.3.5 Pitfalls of the Current PDS System

There is a large body of literature analyzing the effectiveness and efficiency of the universal and targeted PDS mechanisms. Most of the literature, however, concentrates on evaluating the distribution of food grains through the PDS, and not on kerosene distribution and usage. The first study that evaluated the mechanism of PDS distribution was carried out by the Planning Commission (2005). While this study provides an overview of the PDS kerosene value chain in some states, the analysis of leakages and shortcomings is limited to that of food grains.

1.3.5.1 Unintended Beneficiaries

In its evaluation of the PDS in 18 states, the Planning Commission has stated that the TPDS has "not been able to benefit the large majority of the food insecure households in the desired manner"(Planning Commission, 2005).

1.3.5.2 Errors of Inclusion and Exclusion

In the Planning Commission report (2005), two types of errors in the distribution mechanism have been identified: errors of inclusion, where non-deserving households have been issued BPL ration cards, and errors of exclusion, where deserving households have not been issued the cards. Moreover, prevalence of ghost BPL cards is also rampant in many states. The methodology of identifying BPL households was also examined and the report concluded that a large share of the exclusion errors was due to the quality of implementation of the BPL census and that a more appropriate methodology of identification would be needed (Planning Commission, 2005). An issue that exacerbates the problem is that data on BPL families is not updated regularly and households that move in and out of these categories are often not accounted for regularly enough. The BPL census is usually carried out at the household level by the Ministry of Rural Development (MoRD) with the help of village-level local bodies known as panchayats. This is quite distinct from the state-wide estimate of poverty made by the Planning Commission at the macro level.

1.3.5.3 Illegal Diversion

The prevailing control on the price of kerosene has led to illegal diversion, and it is either sold at higher prices or used for adulteration of diesel. The difference between the prices of diesel and PDS kerosene provides an incentive for diverting the fuel towards adulteration.

A marker system to detect and prevent adulteration of petrol and diesel with kerosene has also been tried but the technology has not made much headway and the malpractice continues, to the detriment of the interests of OMCs and end consumers alike.

In an effort to address the problem of adulteration, the government has authorized officials of oil companies to conduct raids and checks to ensure that misuse of PDS kerosene can be curtailed. In 2008–2009, 151,097 inspections were carried out at petrol and diesel outlets and another 23,369 checks were carried out at superior kerosene oil dealerships (Lok Sabha, 2009). That year, 105 dealerships were terminated due to accounts of diversion and adulteration.

Box 1: Report from National Council for Applied Economic Research (NCAER) on diversion of PDS kerosene

In 2005 the NCAER was appointed by the Government of India to carry out a study to assess the demand and requirement of superior kerosene oil in the country. The study observed that approximately 18 per cent of PDS kerosene was diverted towards non-household use, more than 17 per cent was diverted towards the open market and a further 2.6 per cent was sold to households that did not hold BPL cards.

In a news article following the release of the report, then-director general of NCAER recommended a combination of approaches to reform the system, including gradual price increases and better monitoring of the existing system to address the prevailing deficiencies (Bery, 2006).

At a diversion rate of 37.6 per cent, more than INR5,000 crore (US$1.13 billion) of subsidies and under-recoveries were lost in 2005–2006. Assuming that all of the PDS kerosene diverted towards "non-household use" was used for the adulteration of diesel, the state governments would have lost an additional INR1,021 crore (US$230.61 million) in 2005–2006 as excise duties foregone. If kerosene were not used to adulterate diesel, the state governments would have collected these duties on sale of diesel.

1.3.6 Initiatives for Reform: Computerization of PDS

Efforts have been made to reduce identification errors and reduce leakages from the PDS. These efforts primarily involve digitization of consumer records and computerization of the delivery mechanisms. The Department of Food and Public Distribution has initiated a TPDS computerization project in order to make the system more transparent, efficient, effective and accountable with the help of information and communication technology.

Moreover, a government committee headed by Justice Wadhwa has carried out a state-wide study of computerization and the role of information technology in TPDS across 11 states (Wadhwa, 2009). The report advocates the usage of point of sale devices, radio frequency identification tags on containers and GPS devices on trucks.

Regarding the state-wide performance in terms of PDS computerization, the report of the Unique Identification Authority of India (UIDAI), published in October 2011, gives an overview of nine states that have made progress in this direction.[23] The report also lays out "best practices" on the basis of steps taken in these states. These are detailed in Table 4.

[23] The status of computerization of the PDS in various states is further detailed in *Initiatives Toward Computerization of PDS*, http://pib.nic.in/newsite/erelease.aspx?relid=73131, and *State Initiatives Towards Computerization of PDS* (as up to 19.12.2011), http://dfpd.nic.in/fcamin/sites/default/files/userfiles/Stateinitiatives.pdf

TABLE 4: MEASURES BEING IMPLEMENTED BY STATES FOR COMPUTERIZATION OF PDS

MEASURES TAKEN	CHHATTISGARH	GUJARAT	TAMIL NADU	ANDHRA PRADESH	MADHYA PRADESH	BIHAR	ORISSA	CHANDIGARH	HARYANA
Creation of central beneficiary database	✓	✓	✓						
Use of biometrics to clean database				✓	✓				
Web-based application software	✓	✓	✓						
Bar-coded ration cards	✓	✓							
Smart-card based ration cards				✓			✓	✓	✓
Food coupons		✓			✓	✓	✓		
Biometric verification before transaction		✓							
Automated monthly allocation through web-based application	✓	✓	✓						
Automated assessment of transportation requirements	✓								
GPS tracking of trucks			✓						
SMS alerts	✓								
Grievance redressal system	✓		✓						

Source: Adapted from the Task Force Report, October 2011 (Government of India, 2011c)

Several studies have recommended a move away from the existing mechanism of providing subsidized products[24] through the PDS towards a mechanism based on direct transfers.[25] The following chapter examines this option in detail.

[24] While most studies have examined the delivery of food grains through the PDS, some studies also provide specific recommendations towards provision of subsidized kerosene through the PDS (NCAER, 2005; Agarwal, 2011). Although not focusing on the delivery mechanism, studies by the Kirit Parikh Committee (Government of India, 2010) and the Rangarajan Committee (Government of India, 2006) have recommendations on pricing of PDS kerosene.

[25] See, for example, Kapur, Mukhopadhyay & Subramanian (2008a, 2008b); Kapur (2011); Kotwal, Murugkar & Ramaswami (2011); Agarwal (2011); Mehrotra (2011).

2.0 Cash Transfers: An Option for Supporting LPG and Kerosene Subsidy Reform

Cash transfers are direct payments provided to people either based on certain criteria or otherwise. Historically, cash transfers have been used for various purposes, such as providing income support to households, poverty alleviation, bolstering investment in human development, pension support and support to farmers.

Cash transfers seek to mitigate the demand constraint faced in accessing basic services and products by raising the income of the beneficiaries. Cash transfer schemes do not address product supply issues. For instance, the Janani Suraksha Yojana (JSY) aims to improve the ability to pay for prenatal and post-natal care while assuming that medical services are accessible.

Different types of cash transfer schemes exist across the world. The nature of these schemes can be distinguished on the basis of conditionality, targeting and the frequency of transfer.

Conditionality: Transfer schemes that provide cash directly to poor households by mandating fulfilment of certain specified conditions from intended beneficiaries are called conditional cash transfers (CCTs). CCT schemes have been used in several countries, notable among them being the Bolsa Familia in Brazil and Progresa in Mexico (which was replaced by the Oportunidades program in 2001). Conditions that were imposed in these schemes include sending children to school, and/or visiting health clinics for treatment or check-ups, participating in immunization campaigns and so on.

CCTs create incentives for households/individuals to adjust their behaviour in order to comply with the conditionality. In other words, CCTs serve the dual purpose of delivering the income support to those who need it the most and modifying individual/household behaviour to achieve broader social/national goals.

On the other hand, unconditional transfers simply transfer money to the intended vulnerable beneficiaries in order to assist them in coping with their vulnerabilities and do not induce any behavioural changes on their part.

Targeting: Transfers can either be targeted to support only selected sections of the society or be universal, where everybody receives the transfer. Targeting may be adopted for two purposes—to fulfill the objective of redistributing income (in order to reduce inequality) to the more vulnerable sections and to reduce the cost of the program. In order for the targeting to be effective, the vulnerable sections (i.e., the intended beneficiaries) need to be identified correctly. In order to achieve effective targeting, various methods have been adopted, ranging from geographical targeting to targeting on the basis of income and financial status of the beneficiaries.

Frequency of transfer: Transfer schemes can be systematic or ad hoc in nature. Systematic schemes involve regular, recurring payments to the beneficiaries, whereas, in case of ad hoc transfers, one-time lump-sum transfers are provided to help in adjusting to change in policy.[26] Ongoing payments are typically a part of larger social welfare programs.

A table summarizing various design elements of cash transfers for Indonesia, Iran and Mexico has been placed in the Appendix.

[26] As was done in the case of petroleum product subsidy reform in Iran in 2010 and Chile in 2005 (described in the following sections).

2.1 Cash Transfer Schemes in India: A Brief Overview

India has several ongoing cash transfer programs, both conditional and unconditional. The CCT schemes in India include the JSY, which is aimed at improving maternal health, and the Dhanalakshmi Scheme and Balika Samridhi Yojana (BSY), both of which aim to reduce social apathy towards female children. The JSY and lessons to be learned from it are described in greater detail in the Appendix. The latter schemes (Dhanalakshmi and BSY[27]) provide cash incentives to families to facilitate education of their daughters through high school graduation. On the other hand, pension schemes for the elderly and widows are provided as unconditional transfers, targeted towards certain segments. Details of these programs and the prominent evaluation studies that have been done on them to date are provided in the Appendix.

At the state level, several governments have introduced cash transfer schemes. A recent example is from Bihar, where the government provides cash to households to purchase bicycles (Narayanan, 2011).

In addition to the existing transfer programs and the state-level efforts to reform delivery of benefits, the central government has recently proposed to replace subsidies for kerosene, LPG and fertilizers with direct transfers (Mukherjee, 2012).[28] Among the Indian states, Bihar and Delhi are also considering replacing subsidies on PDS kerosene and domestic LPG with cash transfers. Two cash transfer pilot projects have recently been initiated in the country, one at Alwar in Rajasthan (see Box 2) and the other at Mysore in Karnataka. The project in Alwar involves cash transfers for consumers of PDS kerosene, while the Mysore project is looking to implement the same for LPG users.

However, the success of such direct transfers as an effective instrument for delivery of subsidies are clearly contingent upon how such transfer programs are designed in the first place. Some of key issues that need to be addressed and analyzed include:

- Identification of beneficiaries
- Mode of payment used to transfer the benefits
- Indexing the amount of cash transfer to changing prices

The Indian government is looking at direct transfers as an alternative mechanism of subsidy delivery. Through this program, the government aims to reduce the fiscal burden of subsidies, minimize leakages of products (Mukherjee, 2012) from the supply chain and reduce the plight of the poor. The following subsection highlights the potential positive and negative consequences of cash transfers.

[27] Details on the BSY can be found at http://wcd.nic.in/BSY.htm
[28] Budget speech for 2011–12

Box 2: Cash transfer pilot in Alwar

In Rajasthan, the state government has initiated a pilot project following directives of the central government to bring about a transition to cash-based subsidy delivery. The pilot is being conducted in the Kotkasim block of Alwar district. A total of 25,843 ration cards exist in the block, including 22,114 APL cards, 2,627 BPL cards and 1,082 AAY cards. Kerosene was being sold to these consumers at INR15.25 (US$0.3) per litre. After implementation of the scheme in December 2011, the retail price was increased to INR44.25 (US$0.86) per litre. The difference between the two was credited into the bank account of the consumer. A total of 15,020 zero-balance, no-frills bank accounts were opened (as of February 2012) for consumers of PDS kerosene.

Before initiation of the scheme, awareness campaigns were conducted over a period of two months. Initially, people refused to participate in the program even when they were told that they would receive one month's subsidy in advance (*Telegraph*, 2012). However, when the district collector obtained permission from the state government to deposit three months' worth of the subsidy in advance, a large number of people became amenable to participating.

A sum of INR263 (US$5.14)* was deposited into bank accounts of households with no LPG connections and INR175 (US$3.42) in the accounts of those with a SBC. Interestingly, even though kerosene is primarily used for lighting, the provision of kerosene subsidy has been linked to LPG connections. Moreover, since the transfers are being made in advance, they are not linked to the time of purchase or the amount of kerosene lifted.

Initial results from the Kotkasim block in Alwar district indicate that the purchase of kerosene has reduced drastically by from 82,000 litres (KL) in November 2011 to 18 KL in December 2011 (79 per cent), 23 KL in January 2012 and 13 KL in February 2012. (Alwar, 2012) This could be due to a combination of reduction in diversion of PDS kerosene and reduction in the purchase of kerosene by households. An annual saving of INR46.6 crore (US$9.10 million) is projected, assuming a net savings of 60 per cent of kerosene. Assuming the same rate of savings at the national level, the savings will amount to approximately INR21,800 crore (US$4.26 billion) on lower subsidy payout on kerosene and INR278 crore (US$54.30 million) on excise duty collected on additional sales of diesel. However, increased under-recoveries due to additional sales of diesel should also be accounted for.

This reduction also has implications on the savings/additional revenue generated for the exchequer from the avoided diesel adulteration. As was discussed in Section 1.3.5, this saving of PDS kerosene and avoided chances of adulteration will also lead to an increase in excise duty received on diesel. On the flipside, unless diesel prices are revised, the OMCs will incur under-recoveries on the additional diesel purchased.

**Assuming allocation of 3 litres of kerosene a month and a price differential of INR29.75*

2.2 Merits of Cash Transfers

Kapur et al. (2008a) have examined the option of introducing cash transfer as a replacement of in-kind transfers in the Indian context. While justifying the need for introducing cash transfers as a substitute for certain central expenditure schemes (including PDS for food and fuel), the authors have underscored various benefits of cash transfers, including expansion of the choices of the poor, provision of relief from cash constraints, reduction in administrative costs, greater public accountability and reduction of inequity and corruption existing in in-kind transfer schemes.

The envisaged benefit of a cash transfer scheme can be illustrated in a simple microeconomic framework. Consider the current regime of rationing in kerosene, where kerosene is sold at FPSs at a subsidized price. If kerosene prices are deregulated, the final deregulated price will be above the FPS price. Now, if an individual was given cash compensation (income support) such that the old optimal consumption of kerosene was affordable at the new price, then it can be shown that the individual would move to a higher level of utility than the original level. At the optimum, the individual would consume less kerosene (given the higher relative price) but would have more money to spend on other products.

Chaudhuri and Somanathan (2011) make a case for biometric-identification-based cash transfers instead of price-based subsidies for food grains. They relied on NSSO data pertaining to 2004–2005 to demonstrate that the bottom decile of the population received only 2.5 per cent of their MPCE as a grain subsidy. The paper argues that if the amount that the government spent on the PDS system had actually been transferred as cash to all adults (excluding those in the top decile), the lower nine deciles of the population could receive transfers that are a significantly higher percentage of their MPCE. The authors also envisage co-benefits from a biometric-based cash transfer program. These co-benefits include:

- Empowerment of women through an independent and assured source of income.
- Enhancement of the dignity of the poor by giving them an entitlement without any harassment involved in getting it.
- Possibility of using the identification program to exclude income tax payers and other wealthier persons from the subsidy scheme.
- Providing a boost to electoral politics by incentivizing a movement towards universal social security, education and healthcare and away from price-based, regressive subsidies that only favour certain interest groups.

The current mechanism of PDS is an example of entitlement-based schemes that distort the consumption pattern of products and give rise to parallel black markets for reselling subsidized goods at higher than the regulated price. Such schemes are inherently more expensive to monitor and are fraught with transparency and accountability issues (Agarwal, 2011).

2.3 Limitations of Direct Cash Transfers

Notwithstanding the merits of cash transfers, these programs also have certain limitations that need to be duly accounted for when considering an adoption of direct transfers in place of the currently existing price-based subsidy schemes. This section summarizes some limitations of the proposed transfer schemes that have been identified in the existing literature on cash transfers. The main limitations that have been identified in the Indian context for introducing cash transfers include ensuring that the transfers are spent on consumption of merit goods, exposure to price volatility and the inflationary impact of such programs. The following discussion delves into each of these issues in greater detail.

2.3.1 Ensuring Consumption of Merit Goods

Transfers in cash are theoretically posited to be more beneficial to households over in-kind subsidies, as these provide a wider choice to the beneficiaries. However, if the objective is to increase the consumption of more efficient and cleaner forms of energy, simply replacing existing price subsidies with cash transfers may not be the most effective option. Evidence about food stamps and cash transfers from United States has found the propensity to consume food out of food stamps to be higher than that out of cash income (Breunig, Dasgupta, Gunderson & Pattanaik, 2001).

This problem may arise in the Indian context too, where the general apprehension is that any cash transferred to households may be misspent. In a recent survey[29] of 150 households in some areas of Delhi conducted by the Self Employed Women's Association, 60 per cent of the respondents were agreeable to the idea of cash transfers. Out of the remaining 40 per cent, who wanted the PDS to continue, 26.7 per cent "strongly disagreed" with cash transfers. Of those who opposed cash transfers, more than 56 per cent feared that cash would be spent elsewhere and another 31 per cent stated that "ration prices are low while market prices keep increasing" (Self Employed Women's Association, 2009).

Misspending of cash received from transfer programs has been recognized as one of the potential pitfalls of introducing such schemes in the country. While this is a potential issue, such overarching assumptions of misspending reflect a paternalistic attitude (Kapur, 2011).

2.3.2 Exposure to Price Volatility

Cash transfers provide additional income to the beneficiaries, to relax constraints on their demand. However, in contrast to price-based subsidies, cash transfers do not provide a direct shield against volatility in prices unless the quantum of the transfer is accurately indexed to change with changes in prices. In India, this is a significant risk, especially in the case of petroleum products like kerosene and LPG, the prices of which depend on global crude oil prices. If a cash transfer is introduced to replace in-kind fuel subsidies, the value of cash transferred often gets eroded as the prices of goods rise and the response from the system is lagging (Ghosh, 2011).

2.3.3 Impact on Inflation

As mentioned previously in this report, dual pricing exists in the market for kerosene. If price-based subsidies are replaced with a cash transfer, the PDS price of kerosene will rise. As the price of kerosene forms a part of inflation indices such as Consumer Price Index (CPI) and Wholesale Price Index (WPI), an increase in the price is likely to have a direct impact on inflation figures. Moreover, since cash is being infused into the economy, money supply will rise, pushing up inflation. In the long run, however, reduced fiscal deficits would lead to reduction in inflation. The inflationary impact of cash transfers will, therefore, have to be duly considered and accounted for when introducing the program.

2.4 Designing Cash Transfers for Subsidy Delivery in India

As the government conducts pilot implementation of cash transfer schemes and considers the introduction of such programs across the country, it will be essential to have in place an implementation strategy that will ensure the program's efficiency and effectiveness. This section summarizes the key design elements that need to be considered when introducing a cash transfer program in India.

[29] All respondents of this survey were the women in the households.

2.4.1 Identification and Targeting

The primary concern of any targeted social welfare program is to identify the set of intended beneficiaries of the program. The hurdle in targeting lies at the root, that is to say, in the process of identification and definition of the poor.

The first step in identifying target groups should be to estimate the economic impacts of subsidy reform. Household consumption data can be used to estimate how living costs are likely to change given liberalized product prices. More complex, second-order impacts (e.g., inflation, price increases in goods and services related to the subsidized goods, impacts on businesses and employment, economic growth) can be estimated using input-output tables and economic modelling. The results of such exercises can then be used to identify how different groups will be affected by the policy reform, for example, by undertaking a World Bank poverty and social impact analysis. On this basis, and taking into account political considerations, governments can determine the criteria that groups must meet to receive assistance. Indonesia used a poverty and social impact analysis to help develop its 2005 fuel subsidy reform plans (World Bank, 2008, p 6).

Although geographical targeting has been applied in many international cases (such as Mexico and Indonesia), it may not be relevant to do so in India, since poverty is widespread, albeit with different intensities in different regions.

Another variable that should be considered while making these assessments is energy poverty. In India, a large section of energy-poor households may not be covered in the usual surveys, which compounds the problem further. Energy consumption and access data will, therefore, have to be collected across the country and energy-poor households accounted for. It is also imperative to build a certain amount of dynamism into the system (Ghosh, 2011). This will ensure that information on households moving in and out of energy poverty is continuously reviewed and updated.

2.4.2 Determining the Size and Frequency of Transfer

Typically, the size of transfer in transfer schemes is deliberately kept small to avoid dependence and so that participation in the labour markets is not adversely affected (Prabhu, 2009). This concern needs to be balanced against ensuring that the quantum of the transfer is sufficient to make the products in question affordable for the intended beneficiaries. Any cash transfer scheme needs to account for inflation and volatility in prices. As is apparent from the existing schemes in India, in several cases the amount of transferred is insignificant and does not add to the income of the household.

For reference, if the amount that is currently being provided as subsidy (and under-recovery) on kerosene is to be provided as the transfer amount per household, Tables 5 and 6 provide a rough calculation of the size of the transfer that will be available. In Table 6, three scenarios are considered and the amount of the transfer that can be given is indicated in terms of monthly and annual transfer.

TABLE 5: SUBSIDIES AND UNDER-RECOVERIES ON PDS KEROSENE AND NUMBER OF BPL HOUSEHOLDS

	UNIT	2010–11
Fiscal subsidy	INR crore	930.60
	US$ million	204
Under-recovery	INR crore	19,484.42
	US$ million	4,275
Total	INR crore	20,415.02
	US$ million	4,479
Number of BPL households	million	65.2*

Source: PPAC (2011a); PPAC (2012a); Lok Sabha (2012)
** http://164.100.47.132/LssNew/psearch/QResult15.aspx?qref=117099*

TABLE 6: AMOUNT OF TRANSFER AVAILABLE PER MONTH AND PER YEAR (IN INR)

PERCENTAGE OF "TOTAL" DISTRIBUTED AS TRANSFER	TRANSFER AMOUNT AVAILABLE PER BPL HOUSEHOLD	
	In INR	In US$
100%	3,131.14 per annum	61.16 per annum
100%	260.93 per month	5.10 per month
80%	2,504.91 per annum	48.92 per annum
80%	208.74 per month	4.08 per month
50%	1,565.57 per annum	30.58 per annum
50%	130.46 per month	2.55 per month

Source: author calculations

This is a significant amount given that in 2009–2010 the poorest 10 per cent of India's rural population had an average monthly expenditure of INR453 (US$8.85), while the average monthly expenditure of the same decile in the urban population was INR599 (US$11.70) (NSSO, 2011).

Another factor that needs to be considered is the opportunity cost and other expenses incurred by the beneficiaries in travelling to and from the collection centres (banks/post offices/FPSs) to collect their payments. If the transfers are made very frequently, the opportunity cost may become larger than the benefits. On the other hand, if the transfers are infrequent, then they may not adjust in tune with changes in prices and also would be especially challenging for the poor to procure in order to meet the immediate energy needs for which these transfers are actually made. Hence, in cases where the beneficiaries reside at a substantial distance from the delivery points, allowing payments to accumulate in a depository may be beneficial so they can collect the sum according to their convenience. In line with this, adopting an account-based mechanism (either through bank accounts or post office accounts) where the money that remains uncollected can continue to accumulate in the accounts of beneficiaries, means that money could be collected later to meet energy requirements.

2.4.3 Delivery Mechanisms

The choice of technology plays a vital role in implementing cash transfer programs. The mode of subsidy delivery could involve direct transfer of cash by the government to the bank accounts of the beneficiaries. Timely delivery of transfer amounts into accounts of beneficiaries needs to be assured so that there are minimal lags and delays in payments. The intended beneficiaries will typically have severe cash constraints and several competing demands. Thus, timely delivery becomes a critical point in designing a successful cash transfer scheme. In the absence of bank accounts, the option of delivering cash transfers through post offices should also be explored, at least in the short term. This option has been used in Indonesia (see Table 4A in Appendix).

Smart cards with biometric information are being provided as part of the National Population Register (NPR) and by the UIDAI.

Box 3: UIDAI and NPR

The Unique Identification Project was earlier envisaged by the Planning Commission to provide a mechanism of providing a unique identity number (Aadhaar number) identifying each resident of the country and creating a unified database carrying this information. While it was originally conceived as a project to identify all BPL residents, the project now aims at covering all residents. Under the program, biometric data (finger prints and iris scans) are collected and sent to a Central ID data Repository on the basis of which 12-digit Aadhaar numbers are created for each individual. In its first phase, the program created a database of 200 million residents; the second phase of the program is currently underway and aims to enrol 400 million residents.

Along similar lines, the NPR, a project under the Registrar General of India, aims at creating a database of residents of the country. Since the projects are similar in nature, a collation of both these was being considered earlier. However, the government has now decided that in order to minimize duplication, in states where the UIDAI has made progress, Aadhaar and NPR data will be integrated.

The UIDAI is envisaging a system where the requisite information of beneficiaries (such as thumbprints or iris scans) can be verified at the time of purchase and the corresponding transfer amount credited to the bank accounts of each beneficiary. In this case, the cash transfer would work as a refund of the subsidy amount to eligible beneficiaries of the program, with all end users paying full market price at the time of purchase.

Financial inclusion is a big challenge in India and would pose an obstacle to bank transfers to intended beneficiaries. This challenge would necessitate innovative solutions, a few of which have been highlighted in the recommendations section. International experience shows that local and community leaders could be involved to improve the effectiveness of any delivery mechanism, as in the case of Indonesia (see Table 3A in Appendix).

2.4.4 Monitoring and Evaluation (M&E)

An integral part of any cash transfer program is the process of monitoring and evaluating its performance to ensure that stated objectives of the scheme are being met. As mentioned earlier, M&E of the PDS has been weak and corruption and diversion have grown over time (World Bank, 2011). In domestic LPG as well, cases of malpractice have been reported. A robust system must ensure that frequent studies and surveys are conducted to ensure that

diversion and misuse are kept in check and the benefits are reaching all members of the target group. It can be easier to divert cash than to divert goods, which have to be stored and resold (Ghosh, 2011).

A combination of assessment mechanisms can be followed. Perception surveys during and after the pilot studies will help in gauging the response of the beneficiaries. Rapid assessments at key stages, such as after the first tranche of payments, can quickly identify problems that can be addressed in subsequent tranches. Indonesia undertook a rapid assessment after the first set of payments in 2005 to help identify targeting and delivery problems.

Adequate M&E processes will add to the administrative costs of the transfer program. M&E costs should be accounted for while weighing the relative costs and benefits of different options. It is important to involve local authorities such as the Panchayati Raj Institutions in the M&E process. This should be an administratively cheaper option and also impart a sense of ownership on the cash transfer project.

2.4.5 Communication Strategy

Information campaigns are an important element of any successful subsidy reform strategy. 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 prices (such as import prices, refining and distribution costs and taxes). 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 less opposition (Beaton & Lontoh, 2010).

2.5 Challenges

2.5.1 Designing Better BPL Surveys

As mentioned earlier, a critical issue with the PDS is that of identification errors. Many poor families do not have ration cards. Surveys conducted by the government itself show errors of inclusion/exclusion in the identification of BPL families (Planning Commission, 2005). Moreover, NSSO data pertaining to 2004–2005 show that about 50 per cent of poor rural households did not have a BPL card in 2004–2005 (with the figure being as high as 80 per cent in states like Bihar and Jharkhand).

The Planning Commission (2005) has also regarded the current system of identifying the poor to be inefficient. While examining the ramifications of introducing cash transfers in India, Ghosh (2011) has also discussed the prevailing distinction between food insecurity and the current definition of poverty. Likewise, if energy poverty is not directly correlated with income poverty, a section of energy-poor households may be excluded from the usual poverty surveys and analyses.

Having recognized the need to improve the BPL census, an expert group, under the Chairmanship of Shri N. C. Saxena (referred to as the N. C. Saxena Committee) was appointed in 2008 to develop a methodology for identification of the BPL households. The report of the Expert Group was submitted in 2009.[30] The group has recommended a three-stage process. The first step is exclusion of households that meet certain criteria based on socioeconomic and access parameters. Second, the categories of households that need to be automatically included have been listed and finally,

[30] There have been objections to the methodology prescribed in this report and in fact members of the group have also shown their dissent. Discussion related to that are, however, outside the purview of our analysis.

a score-based methodology is adopted for the households that need to be included to identify those households that qualify as BPL (MoRD, 2009). A pilot survey was conducted in 2010[31] to test the methodology recommended by the Expert Group.

In 2011 the MoRD decided to conduct the Socio Economic and Caste Census (SECC) in rural areas for the 12th Five-Year Plan (MoRD, 2011a). While the methodology used for this survey is broadly in line with the one recommended by the Expert Group, there are deviations in the categorization of automatically excluded/included categories and the scoring methodology. A pilot testing of the methodology in 254 villages has been completed. In addition to this, a participatory rural appraisal was also used to rank households according to well-being criteria and the results from 161 villages (43,000 households) have been used to finalize the criteria. The SECC survey is currently underway and is in different stages across the states (MoRD, 2011b). The criteria used and the questions included in this survey broadly cover household parameters related to the nature of dwellings, the number of adult members, members afflicted with a disability, social status (in terms of scheduled castes or scheduled tribes), absence of literate members in the household and ownership of land. The set of criteria included in the questionnaire do not include any questions on energy consumption, but the criteria for exclusion includes categories of households with access to motorized vehicles, mechanized agricultural equipment, refrigerators, landline phones and irrigation equipment and/or irrigated land.

An urban BPL survey will also be conducted under the supervision of the Ministry of Housing and Urban Poverty Alleviation, but with a different questionnaire. The S. R. Hashim Committee Expert Group was formed to recommend a methodology for conducting the SECC in urban areas. The questionnaire in urban areas, although mostly similar to the rural questionnaire, has questions on the main sources of lighting energy and ownership of electrical appliances such as refrigerator, computer/laptop, air conditioners and washing machines.[32]

2.5.2 Inter-Temporal Issues

Unless "sunset clauses" and incentives to move out of the cash transfer program are built into cash transfer programs, beneficiaries may, over the long term, become unnecessarily dependent on such a scheme, creating a natural lock-in effect. Exit options need to be thought out, under which the transfers would diminish or stop altogether as the beneficiaries' economic statuses change, program objectives are met or other factors necessitate a reconsideration of the system (Kapur, 2011). Therefore, provision of cash transfers should be linked to availability of electricity, asset holdings of households and monthly expenditure.

Further, as mentioned earlier, accounting for volatility in prices and indexing transfers to inflation in prices will be critical.

2.5.3 Setting Up an Independent Evaluation Authority

In order to ensure effective M&E of the cash transfer program, an independent evaluation authority has to be mandated to carry out annual reviews and household-level surveys on the program. This could be performed by an existing body such as the Programme Evaluation Organisation of the Planning Commission, which carried out the 2005 study on performance of the PDS. If there is limited scope in the existing authorities' mandates to carry out extensive and dedicated surveys, an independent body, with due participation from civil society, should be set up specifically to examine cash transfer programs.

[31] Findings are available at http://rural.nic.in/sites/pilot_SES_Data.asp
[32] The questionnaire for urban areas is available at http://mhupa.gov.in/bpl_home/docs/notification_questions.pdf

2.5.4 Ensuring Access to Goods and Services

Cash transfers (both conditional and unconditional) have been found to be effective and successful only in cases where the provision of goods and services was assured and efficient (Ghosh, 2011). Kapur (2011) reiterates this challenge by stating that, "substituting subsidies with cash transfers, if driven mainly by fiscal considerations, are unlikely to meet their goals unless we first ask basic prior questions on the goals and objectives of the subsidies in the first place" and further goes on to emphasise the importance of complementing any efforts to introduce cash transfers with adequate "state action."

Within ensuring access to goods and services, two aspects need to be addressed. The first is the strengthening of kerosene and LPG delivery mechanisms to ensure access to these products. Secondly, delivery of the transfers themselves should be made on time and adequate distribution infrastructure needs to be put in place.

Social security pensions given to the aged, widows and the disabled in many states are directly transferred to the bank accounts of the beneficiaries, but many people who are beneficiaries on government records are actually not receiving the money due to them. Problems in opening of bank accounts, availability of banks, and presence of middlemen, even when the money is transferred into the account, delay the release of amounts. In the case of the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), as well, instances of delays and corruption in the banking system have been reported (*The Hindu*, 2012b; Singh, 2011; Sivarajah, 2012).

2.5.5 Increasing the Level of Financial Inclusion

The lack of access to financial services has been identified as one of the major limitations of providing cash transfer payments to the poor. The Deputy Governor of the Reserve Bank of India has stated that an estimated 40 per cent of the total population of India lacks access to even the most basic formal financial services (Chakrabarty, 2011). Several attempts have been made to quantify the level of financial inclusion in India and how it has changed over time.

A simple index of financial inclusion in India is constructed in Mehrotra (2009), which is an average of four indicators, including number of bank branches (to measure coverage), number of rural deposit accounts (to measure access and availability), volume of rural deposits (to measure input of the banking system) and volume of rural credit (to measure use of the banking system). The index shows that financial inclusion in India has remained in the "very low" category in more than half of the districts studied from 2002 to 2006.[33] A state-wide disaggregation indicates that while Punjab, Haryana and Kerala have relatively high financial inclusion index values, Bihar, Madhya Pradesh and Rajasthan are far worse off. Another similar index constructed and evaluated across 49 countries in 2010 (Sarma, 2010) has ranked India as 29th after Colombia (26th), Guatemala (27th) and El Salvador (28th). The value of the index in India is calculated to be 0.198, which is in the low financial inclusion category.

The government has issued a detailed strategy and guidelines on financial inclusion in 2011 (MoF, 2012). The guidelines include:

i. Setting up more brick-and-mortar branches with the objective of having a bank branch within a radial distance of 5 kilometres.
ii. Opening bank branches by September 2012 in all habitations with populations of 5,000 or more in under-banked districts and 10,000 or more population in other districts.
iii. Providing a business correspondent (BC) within a radial distance of 2 kilometres.
iv. Covering villages with populations of 1,000 or more in 10 smaller states/union territories by September 2012.
v. Considering Gram Panchayat as a unit for allocation of areas under the Service Area Approach to bank branch and BCs, etc.

[33] The number of districts in this category fell from 378 (out of 524) in 2002 to 330 (out of 510) in 2006.

However, the problems in increasing the level of financial inclusion are multiple. The government's strategy of setting up regional rural banks has met with only limited success and banks have perceived rural branches to be a burden rather than a business opportunity (Planning Commission, 2009a). The relatively high transaction costs of handling small accounts are a deterrent towards increasing financial inclusion in rural/low income areas since these adversely affect the financial viability of bank branches.

Given the lack of brick-and-mortar bank branches to cover the entire population, the government is looking at using IT-based models to increase levels of financial inclusion. The approach paper of the 12th Five-Year Plan (Planning Commission, 2011) has recommended the use of BCs and other technology-based models to open and operate more bank accounts in rural areas.

BCs comprise individuals and/or organizations that act as local outreach arms of banks in remote areas where the bank may not be able to sustain a physical presence. These correspondents extend banking services (often only basic services like opening savings accounts, depositing and withdrawing money, etc.) to customers in their area. This model has been envisaged to have a lot of potential in India (Planning Commission, 2009). Of the approximately 73,000 habitations having a population of over 2,000 identified by banks for extending banking facilities by March 2012 through BCs, BC agents and bank branches, about 55,000 villages were provided with banking facilities until December 2011 (MoF, 2012).

Mobile phones present an ideal technological platform to increase the outreach of "branchless" financial services to the rural population, since wireless penetration is already large and growing.[34] For a bank to reach its customers and to widen its customer base without investments in physical infrastructure like branches and automated teller machines, mobile banking presents an opportunity to undertake branchless banking. Therefore, mobile telephony, in conjunction with a sustainable, unified BC model, could provide a much-needed boost to levels of financial inclusion in the country.

The faster the level of financial inclusion rises, the easier it will be to implement an appropriate disbursal mechanism for cash transfer payments.

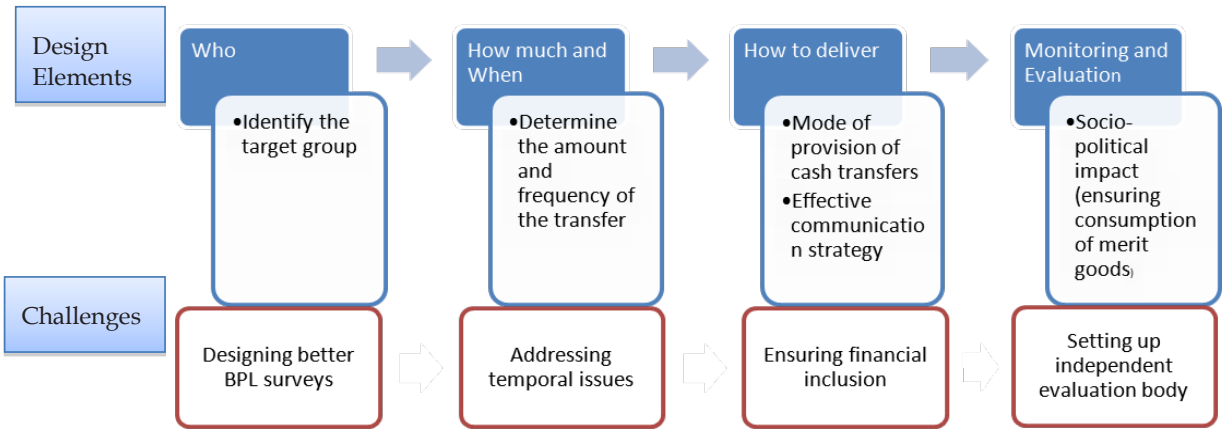

FIGURE 13: DESIGN ELEMENTS AND CHALLENGES FOR CASH TRANSFERS

[34] The Department of Telecommunications *Annual Report, 2010–2011*, indicates that during 2010–2011 the number of wireless telephone subscriptions increased by 227.27 million, to a total of 811.59 million connections. The overall teledensity (number of telephones in use for every 100 individuals) in the country registered an increase from 52.74 at the end of March 2010 to 70.89 at the end of March 2011. The rural teledensity, which was 24.29 on March 31, 2010, increased to 33.79 by the end of March 2011. The urban teledensity went up from 119.77 and 157.32 over the same period. The growth rate of subscribers in rural areas during the year was higher, at 40.64 per cent compared to 34.11 per cent in urban areas (Government of India, 2011a).

3.0 *Inferences and Recommendations*

The government has been incurring a very high subsidy bill on petroleum products. Although intended for certain specific objectives, the prevailing subsidy schemes and their delivery mechanisms have not been able to meet the intended objectives and beneficiaries. Based on the figures for last year alone, the cost of subsidizing these fuels is more than INR1,38,000 (US$26.95 billion). In addition to this, losses are incurred on leakages, foregone excise and tax revenue and excessive fuel consumption. Each year that this problem is not addressed, the losses remain high.

This section outlines the key recommendations for reform. The recommendations are divided into the short term and medium-to-long term. The short-term recommendations need to be addressed in a period of less than two years (i.e., up to March 2014). In this period, there is a requirement of more widely distributed pilot studies, carrying out cost-benefit analyses and capping the consumption of subsidized LPG cylinders. Medium-to-long term recommendations have a timeline of up to five years and will address the larger theme of design and improvements in the mechanism of cash transfer schemes if introduced in the country. The recommendations include indexing payments to price-level changes, increasing financial inclusion, decontrol of LPG prices, an improvement in the supply chain of LPG and designing better BPL surveys to reduce errors of identification of beneficiaries. The state governments will have to play an active role in administering pilot projects for distributing subsidies through cash transfers. In order to encourage states to expedite the process, financial assistance from the centre and other incentives should be provided for state governments. In this context, it is worth noting that programs such as the Rashtriya Krishi Vikas Yojana[35] and the MGNREGS include provisions to issue financial assistance to the states from the centre to achieve their respective objectives.

3.1 Short-Term Recommendations

3.1.1 More Pilot Studies Required in States where PDS is Underperforming

The true test of the effectiveness and acceptability of any program is in implementing it on a small scale in selected areas and, depending on the results, broadening the scope of the project gradually. Since cash transfers for fossil-fuel subsidy reform have never been tried in India, there is a dearth of prior results on viability and consequences of implementing direct cash transfers as an alternative to price-based fuel subsidies on a country-wide basis.

As per the NCAER study, the states with "extremely high leakage (> 50%)" of kerosene included Bihar, Chandigarh, Delhi, Jharkhand, Orissa and Punjab. This report, although comprehensive, is now almost a decade old. State-wide studies would be useful to identify states where diversion of kerosene is high and pilots would be most illuminating.

While the projects in Alwar and Mysore are steps in this direction, a unified database has not been linked to delivery of products and transfers yet. The technology also needs to be implemented and tested in the pilot studies.

At the national level, a representative sample of sites should be chosen accounting for rural/urban areas, poor/middle-income groups and connected/remote areas.

[35] The Rashtriya Krishi Vikas Yojana is classified as an Additional Central Assistance scheme and is administered by the Ministry of Agriculture. The scheme was initiated on the recommendation of the National Development Council in 2007. Its objective was to assist the states in meeting the targeted national agricultural growth rate of 4 per cent during the 11th Five-Year Plan (2007–2012). Funds amounting to around INR15,000 crore (US$3.3 billion) have been provided to the states to incentivize them to draw up comprehensive plans for their agriculture sector (Ministry of Agriculture, 2009; Lal, 2010).

The program should be led and administered by district-level authorities with due involvement of the banking sector and in partnership with the informatics department of the government. The pilots should be run for at least one year to adequately account for seasonal variations in fuel demand and changing price levels in the economy.

Dedicated web portals should be set up for each pilot project where all relevant information should be made available. Based on the information from these pilots, a control/treatment group analysis can also be carried out to validate the findings.

Further, in sites where the pilots have been in operation for some time, quick perception surveys should be carried out to assess the benefits and gaps in the design and delivery mechanism. These surveys will then feed into the final design of the schemes.

3.1.2 Value for Money and Cost-Benefit Analysis

As the pilots are completed and the lessons from these emerge, it will also be essential to carry out cost-benefit and Value for Money (VfM) analyses of these schemes. This will aid in assessing the extent to which the transfer schemes are able to achieve their stated objectives. A comparison can then be made with other schemes that could be used to achieve similar development-related objectives.

A VfM analysis for cash transfers should cover: economy, efficiency and effectiveness (Hodges, White & Greenslade, 2011). *Economy* refers to the cost of inputs, *efficiency* implies the conversion of these inputs into outputs or benefits and *effectiveness* is the impact that the outputs have in improving the welfare status.

The analysis should cover all possible costs of the program, ranging from the costs of establishing the program, administration, identification/targeting, size of the transfer, operational expenses and M&E. In addition to these costs of the program, others such as the private costs incurred by the intended beneficiaries, social costs of the impact that the transfer will have on the societal relations, adverse incentive of dependence on transfers, and economic costs of the inflationary impact of cash transfers need to be made. The costs of various aspects of the program can then be compared with international benchmarks to examine the possibility of improving the implementation.

3.1.3 The Capping of Subsidized LPG Cylinders

In order to reduce the subsidies on LPG in the short term, the appropriate method would be to cap the number of subsidized cylinders that each household can purchase in a year. Even though the consumption is different between rural and urban areas, it will be logistically difficult to impose regional caps, and therefore a standard national cap can be imposed.

At this stage, the penetration of LPG in the country (particularly in rural areas) is low. A cash transfer program that covers only current LPG consumers,[36] coupled with deregulation of prices, will raise the price of each cylinder by more than 100 per cent at current international prices. This would further reduce the affordability of LPG for the poor, thereby making it more difficult to bring about a shift away from firewood/biomass and towards LPG as a more efficient and less polluting cooking fuel.

However, the administrative costs of implementing a cap on per-household LPG cylinder consumption also need to be considered. Logistical prerequisites for implementation include a unified database of LPG consumers, a mechanism to monitor the number of cylinders consumed by each household. However, the creation of the LPG Transparency

[36] Presumably only the poor consumers.

Portal[37] is a step in this direction and will help in identifying and curtailing duplicate gas connections. One potential problem of implementing this cap is that people who consume less than the stipulated number of cylinders per annum could buy an extra cylinder and sell it to those who are consuming more at a price that is slightly lower than market price. This diversion could take place at the LPG distributorship level as well.

It should be noted here that capping cylinders is an interim recommendation only and will be discontinued when a more permanent mechanism is put in place and prices are decontrolled. Further, while the Parliamentary Standing Committee on Petroleum and Natural Gas (2011a; 2011b; 2012) has recommended considering non-provision of subsidies to the affluent, this may not be feasible since determining incomes may be difficult, especially in case of profits earned by businesses.[38]

3.2 Medium-to-Long Term Recommendations

3.2.1 Cash Transfer Schemes Contingent upon Findings of the Pilot Projects

At this stage, it is too early to roll out cash transfers on a nation-wide scale in India. Although the implementation of cash transfers is an attractive option to reduce leakages and enhance delivery of welfare benefits, the design elements mentioned in the report will need to be carefully adhered to while implementing them. The results from carefully planned and well-positioned pilot projects will be instrumental in weighing the costs and benefits of cash transfers in India. If these results are positive, only then can cash transfer schemes be rolled out.

The cash transfers, if implemented, should be unconditional, and the size of the transfer can be determined after considering a number of factors. These factors include: the size of savings from pricing reforms, impact of price reform on the overall welfare level of the beneficiaries, the objective of stimulating poverty reduction, minimizing the adverse impact on labour market participation and political compulsions. While the eventual objective of the cash transfer scheme will be to run it at the national level, the program will be managed at the state level and can be rolled out in state/region-wide phases.

3.2.2 Indexing Payments to Changes in Price Levels

Linking the quantum of cash transfer payments to inflation rates is imperative to ensure that the beneficiaries are not adversely affected by increases in the price of goods they consume. The payments under the existing social welfare schemes such as the Indira Gandhi National Old Age Pension Scheme (IGNOAPS) have not been linked to inflation and, as a result, the size of benefit provided under the scheme today has reduced in value.[39] However, it should be noted that the transfers should be designed to change in tandem with changes in the CPI[40] and not the WPI.[41] The shortfalls of using the WPI have been elaborated by authors such as Patnaik et al. (2011) and Rakshit (2011). Issues such as which CPI to use for indexing cash transfers[42] are pertinent, but fall outside the scope of this report.

[37] The LPG transparency portal has been created by the public sector OMCs and reports information on the distributors, consumers, number of refills and subsidy accrued to each consumer. See, for example, the transparency portal of IOCL: http://indane.co.in/transparency/.
[38] Similar cconcerns were also raised by members of the committee.
[39] The real value (purchasing power) as opposed to the nominal value
[40] A CPI measures changes in the weighted average of a pre-specified set of consumer goods and services purchased by households.
[41] The WPI is the price of a representative basket of wholesale goods.
[42] The CPIs reported by the labor ministry on a monthly basis are CPI for industrial workers, CPI for agricultural labourers and CPI for rural workers.

3.2.3 Increasing Financial Inclusion

The most foolproof way of transferring cash to the intended beneficiaries is to open individual bank accounts for each of them and have the government transfer subsidies directly into these accounts. Therefore, financial inclusion is a prerequisite for implementing such programs effectively. The key actors in the realm of financial inclusion are National Bank for Agricultural and Rural Development, regional rural banks, district-level authorities, the MoRD, BCs and self-help groups.

Given the current state of affairs in India, a technology-based approach focusing on branchless banking provides the most scope to increase levels of financial inclusion. The outreach of mobile telephony could be utilized for setting up and managing bank accounts in areas where brick and mortar branches are unviable. The banking correspondent model also needs to be refined further, with the goals of improving revenue generation and implementing a uniform, replicable and sustainable model that defines a common set of roles and responsibilities of correspondents across different banks. Self-help group/bank linkages need to be utilized to enhance functional literacy regarding account-operating procedures among the beneficiaries.

Finally, the government needs to set up a unified, secure database linking information on the entitlement of each beneficiary to their bank accounts to avoid duplication and/or non-receipt of cash. Financial inclusion would generate co-benefits for the poor by drawing them into the formal banking system and potentially increasing their access to financial and credit services.

3.2.4 Calibrated Decontrol of LPG Prices

While capping of cylinders consumed will help in reducing subsidies in the short term, the prices of LPG need to be decontrolled in a phased manner. Since most consumers of LPG currently belong to higher-income deciles, the most appropriate option for reforming subsidies on this fuel is to carry out a calibrated decontrol of prices over a period of time. However, such decontrol may be detrimental to affordability of LPG for the poor. This will adversely affect the government's LPG penetration strategy through programs like the RGGLVY. To control for this, beneficiaries of these programs could potentially be linked to the same cash transfer mechanism in a phased manner.

Moreover, measure for increasing availability of LPG throughout the country needs to be taken to ensure greater penetration of LPG. Even if cash transfers are provided to identified and targeted households, penetration of LPG may still remain low given the high prices and lack of affordability. This could be addressed by introducing regional micro-finance-based schemes through self-help groups, and payment in instalments for LPG cylinders to increase the uptake of LPG as a cooking fuel.

3.2.5 Improving the Supply Chain of LPG and Kerosene

There are undoubtedly some inherent shortfalls in the supply chain of kerosene and LPG that may not be fully plugged even if cash transfers are implemented. Therefore, complementary actions will have to be taken by the government to address these issues. For instance, more distributors would need to be commissioned to increase LPG penetration in the rural areas. Moreover, both for kerosene and LPG, the government could utilize mobile networks to keep customers and beneficiaries informed about the time of stock replenishment, availability of fuel, and the inventories to be kept by each distributor every month, and other relevant information.

3.2.6 Designing Better BPL Surveys to Reduce Errors of Identification

The BPL survey methodology needs to be reviewed, evaluated and modified. Steps are already being taken in this direction, as mentioned in this report. The key objective of review and modification is to eliminate errors of inclusion and errors of exclusion. Such evaluations will be beneficial not only for effective implementation of cash, but also for any other social welfare schemes aimed at the BPL and AAY categories. The SECC is a step in the right direction, with survey results expected in the next two years. A unified database of households in the BPL and AAY categories needs to be prepared on the basis of results from this survey to facilitate targeted distribution of benefits with minimal leakages. Thereafter, over the next five to ten years, a new methodology should to be put into practice that aims at identifying beneficiaries of different state-sponsored and centrally sponsored transfer schemes and maintaining a database of this information. The actual introduction of cash transfers, however, is not contingent upon the introduction of this new mechanism, and transfer schemes can be introduced based on existing surveys and the SECC.

Reference List

Ajwad, M.I. (2007). *Performance of social safety net programs in Uttar Pradesh*. Washington, D.C.: World Bank. Retrieved from http://siteresources.worldbank.org/SOCIALPROTECTION/Resources/SP-Discussion-papers/Safety-Nets-DP/0714.pdf

Agarwal, S. (2011). *Fuel and fertilizer subsidies: Instituting direct cash transfers*. New Delhi: Centre for Civil Society.

Alwar. (2012). *Launching of kerosene cash subsidy scheme: Pilot project in Kotkasim*. Retrieved from http://alwar.nic.in/news/Kerosene%20Pilot.pdf

Angelucci, M. & Attanasio, O. (2006). *Evaluating the urban component of Oportunidades: Which methods for which parameters?* Berkeley: University of California.

ASEAN. (n.d.). *Country report of the ASEAN Assessment on the Social Impact of the Global Financial Crisis: Indonesia*. Retrieved from www.aseansec.org/publications/ARCR/Indonesia.pdf

Bacon, R. & Kojima, M. (2006a). *Coping with higher oil prices*. Washington D.C. : The World Bank.

Bacon, R. & Kojima, M. (2006b). *Phasing out subsidies*. Viewpoint Note 310, Public Policy for the Private Sector. Washington D.C.: World Bank. Retrieved from http://rru.worldbank.org/documents/publicpolicyjournal/310Bacon_Kojima.pdf

Beaton, C. & Lontoh, L. (2010). *Lessons learned from Indonesia's attempts to reform fossil-fuel subsidies*. Geneva: Global Subsidies Initiative of the International Institute for Sustainable Development. Retrieved from www.iisd.org/pdf/2010/lessons_indonesia_fossil_fuel_reform.pdf

Bery, S. (2006, January 10). Suman Bery: Whither the public distribution system? Retrieved from www.business-standard.com/india/news/suman-bery-whitherpublic-distribution-system/235512

Bozorgmehr, N. (2012, April 25). Subsidy dispute add to Iran's woes. Retrieved from www.ft.com/intl/cms/s/0/a6ac4438-8ebe-11e1-ac13-00144feab49a.html#axzz23g0U4gW6

Breunig, R., Dasgupta, I., Gunderson , C. & Pattanaik, P. (2004). *Explaining the food stamp cash-out puzzle*. Food Assistance and Nutrition Research Report, Food and Rural Economics Division, Economic Research Service. Washington D.C.: U.S. Department of Agriculture. Retrieved from www.ers.usda.gov/publications/fanrr12/fanrr12.pdf

Cameron, L. & Shah, M. (2011). *Mistargeting of cash transfers, social capital destruction, and crime in Indonesia*. Melbourne: Monash University.

Chakrabarty, K. C. (2011). Financial inclusion: A road India needs to travel. Retrieved from http://rbi.org.in/scripts/BS_SpeechesView.aspx?Id=607

Chaudhuri, A. R. & Somanathan, E. (2011, may 21). Impact of biometric identification-based transfers. *Economic and Political Weekly, 46* (21), 77–80. Retrieved from www.isid.ac.in/~som/papers/Roy-Chaudhuri_Somanathan_EPW2011.pdf

Department of Food and Public Distribution. (2012). Targeted Public Distribution System. New Delhi: Ministry of Food and Consumer Affairs, Government of India. Retrieved from http://dfpd.nic.in/?q=node/101

Ekholm, T., Krey, V., Pachauri, S. & Riahi, K. (2010). Determinants of household energy consumption in India. *Energy Policy 38*, (2010), 5696–5707.

Fernald, L. C., Gertler, P. J. & Neufel, L. M. (2008). Role of cash in conditional cash transfer programmes for child health, growth, and development: An analysis of Mexico's Oportunidades. *The Lancet, 371*, 828–37.

Garg, S. (2010, December 7). *Letter to Shri Roshan Lal*. DO No.3-37/2010-RKVY. Retrieved from http://rkvy.nic.in/workshop-Jan2011.pdf

Ghosh, J. (2011, May 21). Cash transfers as the silver bullet for poverty reduction: A sceptical note. *Economic and Political Weekly, 46* (21). Retrieved from http://www.righttofoodindia.org/data/research_writing_articles/general_interest/May_2011_cash_transfer_silver_bullet_poverty_reduction_sceptical_note.pdf

Government of Haryana. (2012). Main features of TPDS in the State of Haryana. Retrieved from http://203.134.203.24/profile_distribution.aspx

Government of Himachal Pradesh: *Beneficiaries under Old Age Widow and National Security Pension Scheme – Himachal Pradesh*. Evaluation Division, Planning Department, Government of Himachal Pradesh. Retrieved from http://hpplanning.nic.in/Beneficiaries%20under%20Old%20Age%20Widow%20and%20National%20Security%20Pension%20Scheme%20-%20Himachal%20Pradesh.pdf

Government of India (2006, February). *Report of the Committee on Pricing and Taxation of Petroleum Products*. New Delhi: Government of India

Government of India (2010, February 2). *Report of the Expert Group on a Viable and Sustainable System of Pricing of Petroleum Products*. New Delhi: Government of India.

Government of India (2011a). *Annual Report, 2010–2011*. New Delhi: Department of Telecommunications, Ministry of Communications and Information Technology, Government of India. Retrieved from http://www.dot.gov.in/annualreport/2011/English%20AR%202010-11.pdf

Government of India (2011b, June). *Interim report of the Task Force on Direct Transfer of Subsidies on Kerosene, LPG and Fertiliser, 2011, Task Force on Direct Transfer of Subsidies on Kerosene, LPG and Fertiliser*. New Delhi: Department of Expenditure, Ministry of Finance, Government of India.

Government of India (2011c, October). *Report of the Task Force on an IT strategy for PDS and an implementable solution for direct transfer of subsidy for food and kerosene*. New Delhi: Ministry of Finance, Government of India.

Government of Mexico. (2010). *Requisitos para acceder al programa Oportunidades*. Retrieved from www.oportunidades.gob.mx/Portal/wb/Web/requisitos_para_acceder_al_programa

Government of Punjab (2012). Supply Branch. Department of Food, Civil Supplies and Consumer Affairs, Government of Punjab. Retrieved from http://foodsuppb.nic.in/Branches/Supply.htm.

Guillaume, D., Zytek, R. & Reza Farzini, M. (2011). *Iran: The chronicles of the subsidy reform*, Working Paper WP/11/167. Washington D.C.: International Monetary Fund. Retrieved from www.imf.org/external/pubs/ft/wp/2011/wp11167.pdf

Hastuti N. T., Usman, S., Sulaksono, B., Budiyati, S., Widyanti, W., Rosfadhila, M. et al. (2006). *A rapid appraisal of the implementation of the 2005 Direct Cash Transfer Program in Indonesia: A case study in five Kabupaten/Kota*. Jakarta: SMERU Research Institute. Retrieved from www.smeru.or.id/report/research/blt/slt_eng.pdf

Hodges, A., White, P. & Greenslade, M. (2011). *Guidance for DFID country offices on measuring and maximising value for money in cash transfer programmes*. Retrieved from www.dfid.gov.uk/Documents/publications1/guid-dfid-cnty-offs-meas-max-vfm-csh-trsfr-progs.pdf

International Energy Agency (2011). *Advantage Energy: Emerging economies, developing countries and the private-public sector interface*. Information Paper. Retrieved from www.iea.org/publications/freepublications/publication/advantage_energy.pdf

Indiastat.com (n.d.). *Sales, marketing and production of petroleum products*. Retrieved from www.indiastat.com/petroleum/25/salesmarketingandconsumptionofpetroleumproducts/248/stats.aspx

Kapur, D., Mukhopadhyay, P. & Subramanian, A. (2008a, April 12). The case for Direct Cash Transfers to the poor. *Economic and Political Weekly*. Retrieved from http://www.samprag.org/downloads/research/The%20case%20for%20Direct%20Cash%20Transfers%20EPW%20Devesh%20Kapur%20et%20al.pdf

Kapur, D., Mukhopadhyay, P. & Subramanian, A. (2008b, November 22). More on Direct Cash Transfers. *Economic and Political Weekly*. Retrieved from http://casi.ssc.upenn.edu/system/files/12902.pdf

Kapur, D. (2011, May 21). The shift to cash transfers: Running better but on the wrong road? *Economic and Political Weekly, 46* (21). Retrieved from http://casi.ssc.upenn.edu/system/files/The+Shift+to+Cash+Transfers+-+DK.pdf

Kotwal, A., Murugkar, M. & Ramaswami, B. (2011, May 21). PDS Forever? *Economic and Political Weekly, 46* (21). Retrieved from http://server-t86.e2enetworks.net.in/files/PDS_0.pdf

Livemint.com (2010, February 10). *GAIL to share subsidy burden pending decision by ministry*. Retrieved from www.livemint.com/2010/02/10225225/GAIL-to-share-subsidy-burden-p.html

Lok Sabha. (2009). Adulteration of petrol and diesel. In Annexure C, Lok Sabha Unstarred Question No. 173, answered on 19.11.2009. Retrieved from http://164.100.47.132/Annexture/lsq15/3/au173.htm

Lok Sabha. (2010). *State-wise number of Fair Price Shops in the Country*; Annexure-I referred to in reply to part (a) of the unstarred question no. 1533, answered on 03.08.2010 in the Lok Sabha. Data compiled on June 30, 2010. Retrieved from http://164.100.47.132/Annexture/lsq15/5/au1533.htm

Lok Sabha. (2012a). Lok Sabha unstarred question number 2758, answered on March 29, 2012. Retrieved from http://164.100.47.132/LssNew/psearch/QResult15.aspx?qref=119115

Lok Sabha. (2012b). LokSabha starred question no. 144, answered on December 1, 2011. Retrieved from http://164.100.47.132/LssNew/psearch/QResult15.aspx?qref=112659

Lok Sabha. (2012c). Lok Sabha unstarred Question No. 1070, answered on March 20, 2012. Retrieved from http://164.100.47.132/LssNew/psearch/QResult15.aspx?qref=117099

Mehrotra, S. (2009). *Introducing conditional cash transfers in India: A proposal for five CCTs*. Retrieved from www.ids.ac.uk/go/idspublication/introducing-conditional-cash-transfers-in-india-a-proposal-for-five-ccts

Ministry of Agriculture (2009). Progress of RKVY. Retrieved from http://rkvy.nic.in/

Ministery of Finance. (2012). *Economic survey, 2011–12*. New Delhi: Government of India. http://www.indiabudget.nic.in

Ministry of Petroleum and Natural Gas. (2010). *Annual report, 2009–10*. Ministry of New Delhi: Government of India.

Ministry of Petroleum and Natural Gas. (2011). *Background material for Economic Editors' Conference*, October 19, 2011. New Delhi: Economics and Statistics Division, Ministry of Petroleum and Natural Gas, Government of India.

Ministry of Petroleum and Natural Gas. (2012). *Indian petroleum and natural gas statistics, 2010–11.* New Delhi: Economic Division, Ministry of Petroleum and Natural Gas, Government of India.

Ministry of Rural Development. (2009, August). *Report of the Expert Group to advise the Ministry of Rural Development on the methodology for conducting the Below Poverty Line census for 11th Five Year Plan*. New Delhi: Ministry of Rural Development, Government of India.

Ministry of Rural Development. (2011a). *Letter issued by the Secretary*. New Delhi: Ministry of Rural Development, Government of India. Retrieved from http://rural.nic.in/sites/downloads/circular/bplcensus_040720110001.pdf

Ministry of Rural Development. (2011b, July 25). *Socio economic and caste census 2011 in rural India*. New Delhi: Ministry of Rural Development, Government of India. Retrieved from http://rural.nic.in/sites/downloads/general/Caste_Census_book_indd.pdf

Ministry of Statistics and Programme Implementation. (2011). National Sample Survey Organisation (NSSO), 66th Round data catalog. Retrieved from http://164.100.34.58/index.php/catalog/18/datafiles

Mishra, R. (2011, March 13). Domestic LPG diversion leads to higher imports. Retrieved from http://www.thehindubusinessline.com/industry-and-economy/economy/article1534638.ece?homepage=true

Mukherjee, P. (2012). *Budget speech of the Finance Minister for Union Budget, 2011–12*. Retrieved from http://indiabudget.nic.in/budget2011-2012/ub2011-12/bs/bs.pdf

Narayanan, S. (2011, May 21). A case for reframing the cash transfer debate in India. *Economic and Political Weekly, 46* (21). Retrieved from www.righttofoodindia.org/data/research_writing_articles/general_interest/May_2011_case_reframing_cash_transfer_debate_in_india.pdf

National Council for Applied Economic Research. (2005). *Comprehensive study to assess the genuine demand and requirement of special kerosene oil (SKO)*. New Delhi: NCAER.

National Sample Survey Organisation. (2011). *Level and pattern of consumer expenditure 2009–10*, NSS Report No 538. New Delhi: Ministry of Statistics and Programme Implementation, Government of India.

Niño-Zarazúa, M. (2010). *Mexico's Progresa-Oportunidades and the emergence of social assistance in Latin America.* Working Paper 142. Manchester: Brooks World Poverty Institute.

Office of the Registrar General and Census Commissioner, India (2011). *Census 2011*. Retrieved from www.censusindia.gov.in/2011census

Oil and Natural Gas Company India (2012). *Financial highlights*. Retrieved from http://www.ongcindia.com/Financial_Highlights/ONGC_OVL_MRPL_FY12_Result.pdf

Oil India Limited (n.d.). *Financial results*. Retrieved from: www.oil-india.com/Document/Financial/Financial_Analysis_28052012.pdf

Parliamentary Standing Committee on Petroleum and Natural Gas. (2011a, August 3). *Demand for grants 2011–12*. Standing Committee on Petroleum and Natural Gas (2010-11), Fifteenth Lok Sabha, Ministry of Petroleum and Natural Gas, Eighth Report, Presented in Lok Sabha, laid in Rajya Sabha.

Parliamentary Standing Committee on Petroleum and Natural Gas. (2011b, December 22). *Challenges of under-recoveries of petroleum products*. Standing Committee on petroleum and Natural Gas (2010-11), Fifteenth Lok Sabha, Ministry of Petroleum and Natural Gas, Ninth Report, Presented in Lok Sabha, laid in Rajya Sabha. Retrieved from hwww.indiaenvironmentportal.org.in/files/file/Indtroduction%20report.pdf

Parliamentary Standing Committee on Petroleum and Natural Gas. (2012, April 27). *Demand for grants 2012–13,* Standing Committee on Petroleum and Natural Gas (2010-11), Fifteenth Lok Sabha, Ministry of Petroleum and Natural Gas, Tenth Report, Presented in Lok Sabha, laid in Rajya Sabha.

Patnaik. I., Shah, A. & Veronese, G. (2011, April 16). How should inflation be measured in India? *Economic and Political Weekly, 46* (16). Retrieved from http://macrofinance.nipfp.org.in/PDF/how-to-measure-inflation-in-india.pdf

Press Information Bureau. (2011a, November 24). *1328 Lakh LPG and 15.88 Lakh PNG consumers in the country at present: Reddy*. Press release. New Delhi: Government of India.

Press Information Bureau. (2011b, August 16). *Limiting supply of LPG cylinders for cooking purposes*. Press release. New Delhi: Government of India.

Press Information Bureau. (2011c, June 9). *Lowering the age limit from 65 years to 60 years under Indira Gandhi National Old Age Pension Scheme and increase in rate of pension to persons of 80 years and above*. New Delhi: Government of India.

Press Information Bureau. (2011d, December 20). *No move to restrict supply of LPG cylinders*. New Delhi: Government of India.

Press Information Bureau. (2011e, March 8). *1.69 crore beneficiaries under Indira Gandhi National Old Age Pension Scheme (IGNOAPS)*. New Delhi: Government of India.

Planning Commission. (2005). *Performance evaluation of Targeted Public Distribution System*. New Delhi: Government of India.

Planning Commission. (2009a). *A hundred small steps*. Report of the Committee on Financial Sector Reforms. New Delhi: Government of India.

Planning Commission. (2009b, February). *Evaluation report On National Old Age Pension Scheme (NOAPS): Jammu & Kashmir*. New Delhi: Programme Evaluation Organization, Government of India. Retrieved from http://planningcommission.nic.in/reports/peoreport/peo/peo_NOAPS.pdf

Planning Commission. (2011). *Faster, sustainable and more inclusive growth: An approach to the 12th Five-Year Plan* (2012–17). New Delhi: Government of India.

Petroleum Planning and Analysis Cell. (2011a, May 3). *Fiscal subsidy on PDS kerosene & domestic LPG*, New Delhi: Government of India. Updated versions of this document available. Retrieved from http://ppac.org.in

Petroleum Planning and Analysis Cell. (2011b, July 8). *Current: state RSPs of LPG*. New Delhi: Government of India. Updated versions of this document available. Retrieved from http://ppac.org.in

Petroleum Planning and Analysis Cell. (2012a, July 10). *Under-recoveries to oil companies on sale of sensitive petroleum products*. New Delhi: Government of India. Updated versions of this document available. Retrieved from http://ppac.org.in

Petroleum Planning and Analysis Cell. (2012b). *Petroleum prices and under-recoveries*. New Delhi: Government of India. Updated versions of this document available. Retrieved from http://ppac.org.in

Prabhu, S. K. (2009). *Conditional cash transfer schemes for alleviating human poverty: Relevance for India*. India: United Nations Development Programme.

Rakshit, M. (2011, April 16). Inflation and relative prices in India 2006–10: Some analytics and policy issues. *Economic and Political Weekly, 46*, (16). Retrieved from www.scribd.com/doc/55028162/SA-XLVI-16-160411-Mihir-Rakshit.

Reserve Bank of India (2011). *Macroeconomic and monetary developments in 2010-11*. Retrieved from www.rbi.org.in/scripts/PublicationsView.aspx?id=13333

Sarma, M. (2010). *Index of financial inclusion*. Discussion Paper 10-05. Discussion Papers in Economics. New Delhi: Centre for International Trade and Development, Jawaharlal Nehru University. Retrieved from http://202.41.10.25/Academics/Schools/SchoolOfInternationalStudies/CITD/DiscussionPapers/DP05_2010.pdf

Satriana, S. (n.d.). *Impact assessment of the 2008 Unconditional Cash Transfer Programme (BLT) in Indonesia*. The Netherlands: Maastricht Graduate School of Governance.

SEWA. (2009, October). *Do poor people in Delhi want to change from PDS to Cash Transfers? A study conducted by SEWA Delhi*. Retrieved from www.sewabharat.org/Delhi%20cash%20transfers%20english.pdf

Singh, R. S. (2011, May 24). Old-age pensioners block traffic. Retrieved from www.tribuneindia.com/2011/20110525/haryana.htm#1

Sivarajah. P (2012, May 29). Elderly made to sweat it out for smart cards. Retrieved from http://articles.timesofindia.indiatimes.com/2012-05-29/madurai/31887176_1_smart-cards-pension-beneficiaries

Soni, A. (2011, June 21). Country profile: Petroleum-product subsidies in India. *Subsidy Watch Blog, GSI*. Retrieved from www.iisd.org/gsi/news/country-profile-petroleum-product-subsidies-india

The Hindu. (2012a, June 18). Fitch downgrades India's credit rating outlook to negative. Retrieved from www.thehindu.com/business/Economy/article3543137.ece

The Hindu. (2012b, July 6). Pension delay leaves elders in distress. Retrieved from www.tribuneindia.com/2011/20110525/haryana.htm#1

The Telegraph. (2012, April 1). Sorry, cash only. Retrieved from www.telegraphindia.com/1120401/jsp/7days/story_15319785.jsp#.UC5DBtDOydU

Visa. (n.d.). *Bansefi Visa debit and prepaid cards create "Oportunidades" for Mexico's financially underserved*. Retrieved from http://currencyofprogress.visa.com/wp-content/uploads/2011/12/Empowering_People_Mexico_Case_Study_English_FINAL.pdf

Wadhwa (2009). *Justice Wadhwa Committee on Public Distribution System (PDS) report on computerisation of PDS operations*. Retrieved from http://pdscvc.nic.in/report%20on%20computersisation%20of%20PDS.htm

Widjaj, M. (2009). *An economic and social review on Indonesian direct cash transfer to poor families, year 2005*. Retrieved from http://umdcipe.org/conferences/policy_exchanges/conf_papers/Papers/widjaja.pdf

World Bank. (2008). *Good practice note: Using poverty and social impact analysis to support development policy operations*. Washington, D.C., World Bank. Retrieved from http://siteresources.worldbank.org/INTPSIA/Resources/GPN_August08_final.pdf

World Bank. (2010). *Conditional cash transfers: Reducing present and future poverty*. Washington, D.C.: World Bank.

World Bank. (2011). *Social protection for a changing India, Volume II*. Washington, D.C.: World Bank

Appendix

1.0 Savings from capping of LPG cylinders

The following tables provide a rough estimate of the amount of subsidy that can potentially be saved if the number of subsidized LPG cylinders per year is capped at eight[43] for each household. The deviation of average number of cylinders consumed for each monthly per capita expenditure (MPCE) class from the assumed cap of eight cylinders is calculated. This deviation is rounded off to the nearest integer value. This deviation is multiplied with the population of each MPCE class to arrive at a total number of cylinders for that MPCE class on which the subsidy will no longer apply after capping. This is then multiplied with the sum of fiscal subsidy and under-recovery per cylinder to arrive at a figure on total savings for the government and OMCs.

TABLE 1A: POTENTIAL SUBSIDY SAVINGS IN THE RURAL SECTOR

VARIABLE	MPCE CLASS	TOTAL HOUSEHOLD SAMPLE SIZE	SAMPLE HOUSEHOLDS REPORTING LPG CONSUMPTION	PERCENTAGE OF SAMPLE HOUSEHOLDS REPORTING LPG	ESTIMATED TOTAL NO. OF HOUSEHOLDS	ESTIMATED NO. OF HOUSEHOLDS USING LPG	AVERAGE CONSUMPTION OF LPG (IN KG)	AVERAGE CONSUMPTION OF LPG (IN CYLINDERS)		DEVIATION FROM 8	TOTAL NUMBER OF CYLINDERS ABOVE	AVERAGE SUBSIDY SAVED @ INR420/ CYLINDER		
Unit	Rs.						Kg	Cylinders per month	Cylinders per year	Cylinders per year	Cylinders per year	INR per year	INR crore per year	INR million
	0-450.08	3154	15	0.48%	13355800	63518.38	4.4	0.31	3.72	-4.28				
	450.08-536.67	3439	73	2.12%	13589200	288459.32	8.7	0.61	7.35	-0.65				
	536.67-613	3786	168	4.44%	14480200	642544.53	8.1	0.57	6.85	-1.15				
	613-685.4	4299	218	5.07%	14892300	755180.60	8.8	0.62	7.44	-0.56				
	685.4-765	5036	470	9.33%	15782800	1472977.76	9	0.63	7.61	-0.39				
	765-852.86	5234	759	14.50%	16169000	2344721.24	9.1	0.64	7.69	-0.30				
(Median class)	852.86-973.82	6396	1329	20.78%	16737400	3477799.34	9.3	0.65	7.86	-0.14				
	973.82-1144.33	7122	2072	29.09%	17242400	5016323.05	9.5	0.67	8.03	0.03	141304.87	59348047	5.93	59.35
	1144.33-1477	8669	3598	41.50%	18561400	7703762.51	9.6	0.68	8.11	0.11	868029.58	364572423	36.45	364.575
	1477 or more	11784	7330	62.20%	21683100	13487535.9	9.9	0.69	8.37	0.37	4939097.65	2074421014	207.44	2074.42
	Total	58919	16032	27.21%	162493600	35252822.65					5948432.11	2498341484	249.83	2498.34

Source: Ministry of Statistics and Programme Implementation (2011)

[43] The median income class in the rural sector consumes an average of around eight cylinders per year of LPG. We have taken this to be the cap on subsidized LPG cylinders.

TABLE 2A: POTENTIAL SUBSIDY SAVINGS IN THE URBAN SECTOR

VARIABLE	MPCE CLASS	TOTAL HOUSEHOLD SAMPLE SIZE	SAMPLE HOUSEHOLDS REPORTING LPG CONSUMPTION	PERCENTAGE OF SAMPLE HOUSEHOLDS REPORTING LPG	ESTIMATED TOTAL NO .OF HOUSEHOLDS	ESTIMATED NO. OF HOUSEHOLDS USING LPG	AVERAGE CONSUMPTION OF LPG	AVERAGE CONSUMPTION OF LPG		DEVIATION FROM 8	TOTAL NUMBER OF CYLINDERS ABOVE	AVERAGE SUBSIDY SAVED @ INR420/ CYLINDER		
Unit	Rs.						Kg	Cylinders per month	Cylinders per year	Cylinders per year	Cylinders per year	INR per year	INR Crore per year	INR million
	0-641.5	4540	938	20.66%	4857000	1003494.714	4.3	0.30	3.63					
	641.5-797.38	3519	1350	38.36%	5385100	2065895.141	10.4	0.73	8.79	0.79	1629438.42	684364136.7	68.44	684.36
	797.38-944.8	3380	1752	51.83%	5535800	2869444.26	10.9	0.77	9.21	1.21	3475664.88	1459779249	145.98	1459.78
	944.8-1114.2	3593	2304	64.12%	5976600	3832476.037	11.3	0.79	9.55	1.55	5937638.93	2493808351	249.38	2493.80
	1114.2-1307.17	3622	2603	71.87%	6308700	4533833.821	11.4	0.80	9.63	1.63	7407390.49	3111103997	311.11	3111.10
(Median class)	1307.17-1543	3938	3068	77.91%	6614400	5153118.131	11.7	0.82	9.88	1.88	9725603.23	4084753358	408.48	4084.75
	1543-1843.33	4013	3278	81.68%	7165800	5853349.713	12.1	0.85	10.22	2.22	13025764.15	5470820943	547.08	5470.82
	1843.33-2303	4702	3929	83.56%	7807600	6524045.172	12.1	0.85	10.22	2.22	14518297.71	6097685037	609.77	6097.69
	2303-3166	5190	4433	85.41%	8312400	7099974.798	12.2	0.85	10.31	2.31	16399941.79	6887975550	688.79	6887.97
	3166 or more	5239	4461	85.15%	10182300	8670211.93	12.1	0.85	10.22	2.223	19294274.44	8103595263	810.35	8103.59
	Total	41736	28116	67.37%	68145700	47605843.72						38393885885	3839.38	38393.89

Source: Ministry of Statistics and Programme Implementation (2011)

TABLE 3A: TOTAL POTENTIAL SUBSIDY SAVINGS

Total Subsidy Saved (in INR Crore)	4,089.22
Total Subsidy Saved (in INR million)	40,892.23
Total Subsidy Saved (in US$ million)	897.22
Under-recoveries + Subsidies (in INR Crore)	23,719
Under-recoveries + Subsidies (in INR million)	237,190
Under-recoveries + Subsidies (in US$ million)	5,204.18
%age of (under-recovery + subsidy) saved	17%

Source: author calculations

2.0 Cash transfer programs in India

Two programs have been summarized here: the Janani Suraksha Yojana (JSY) and the Indira Gandhi National Old age Pension Scheme (IGNOAPS). While the first is a conditional cash transfer scheme aimed at improving maternal and post-natal health, the second scheme is an unconditional targeted program to provide support to the elderly.

State level evaluation studies of both programs reflect a high level of awareness about the schemes and a gradual increase in the uptake of benefits offered therein. In case of the JSY program, for instance, the evaluation studies report that institutional deliveries, which is a precondition for availing the transfer, have increased substantially. Similarly, in the case of the IGNOAPS, the beneficiaries reported the payment as a major source of income. The leakages of the IGNOAPS have also been reported to be low (World Bank, 2011).

2.1 Janani Suraksha Yojana

The scheme had 10,696,000 beneficiaries in 2010–2011 up from 9,037,000 reported for 2008–2009. The expenditure in 2010–2011 was INR1,609 crore and the budget earmarked for the 12th Five-Year Plan is INR10,000 crore.

The scheme was introduced with the aim of reducing maternal mortality by promoting institutional deliveries (through both government and accredited private hospitals) and to ensure prenatal and post-natal care. The entitlements are based on the economic status and the state the beneficiaries belong to. The scheme also entails provision of transport and referral services for patients. The provision of benefits under the JSY scheme has been linked to the Accredited Social Health Activist (ASHA) program of the National Rural Health Mission, which provides trained female community health workers in rural areas. The ASHAs are expected to act as an interface between the community and health institutions. In the context of the JSY, the ASHAs are also expected to disseminate information about the JSY, to accompany the pregnant women to the hospitals, to stay with them during the delivery and to advise them on post-natal care and breastfeeding practices.

Evaluation: In 2008, the United Nations Population Fund was appointed to conduct an evaluation of the JSY program in five states: Bihar, Madhya Pradesh, Orissa, Rajasthan and Uttar Pradesh. In the samples from the five states, it was reported that 81 per cent of the women surveyed were aware of the JSY and ASHA and among those who were aware, close to 71 per cent were aware of the 24x7 institutional delivery provided in government facilities. It was found that the share of institutional deliveries had risen considerably after the introduction of the program. Among the JSY beneficiaries, 76 per cent reported having received money after the delivery and more that 90 per cent were registered for prenatal care. An improvement was also observed in awareness regarding the scheme and the benefits provided under it. The study recommended upscaling the provision of medical facilities, better financial planning and instituting better monitoring facilities, optimization of the engagement of ASHAs and better awareness creation.

2.2 Old Age Pension Scheme

The IGNOAPS[44] was launched under the aegis of the National Social Assistance Programme in 1995. Under this scheme, a non-contributory pension of INR200 per month is provided to BPL persons of age 60 years[45] and above and a pension of INR500 per month is provided to those of age more than 80 years. The payment is provided through bank and post office accounts. This scheme is sponsored by the central government, but in addition to this, several state governments also provide matching payments.[46] As of March 2011 the number of beneficiaries stood at 1.69 crore (Press Information Bureau, 2011e).

In 2009 the National Social Security Board also recommended that the scope of various social security schemes be increased to cover building and other construction workers, Mahatma Gandhi National Rural Employment Guarantee Scheme workers, Asha workers, Anganwadi workers and helpers, porters/coolies/gangmen, and casual and daily wagers (Ministry of Finance, 2012).

Although a national-level evaluation of the scheme has not been carried out, literature of state-level reviews can be found. The only report that summarizes national experience was released by World Bank in 2011; it states that awareness of the IGNOAPS was substantial and the leakages of the program were low.

[44] The program was renamed as Indira Gandhi National Old Age pension Scheme (IGNOAPS) in 2007 prior to which it was called the National Old Age Pension Scheme (NOAPS). Further, the criteria of defining the beneficiaries were changed to cover those falling in the BPL category.

[45] The eligible age was revised to 60 years with effect from April 2011. The minimum age was earlier set at 65 years. Further, the government also announced an increase in the pension for those aged more than 80 years (Press Information Bureau, 2011c)

[46] These matching payments vary from a minimum of nil in four states to a maximum of INR800 in Goa.

An evaluation of the scheme was carried out by the Planning Commission (2009b) for the state of Jammu and Kashmir in the year 2009. For the assessment, 194 beneficiaries and 139 non-beneficiaries were interviewed. Of these, 66 per cent of the beneficiaries had an annual income of less than INR10,000 (i.e., a monthly income of a little over INR830) and 20 per cent had an annual income between INR10,000 and 20,000.

As regards the dissemination of information on the scheme, 45 per cent of the beneficiaries reported having gotten the information from friends and family members and 30 per cent from the village leaders/panchayats. No standard form of verification exists for the program and a large number of respondents stated that they received a letter issued from Patwaris and attested by Tehsildars to confirm their economic status. However, cases of irregularity in payments and less-than-mandated payments were also reported during the evaluation. In the assessment, 49 per cent of the beneficiaries reported that the payments were irregular.

An evaluation study of the various pension schemes in existence in the state of Himachal Pradesh was conducted by the Planning Department of the state government (Government of Himachal Pradesh[47]). In the study, 6,140 beneficiaries were surveyed, 10.5 per cent of which were found to be benefiting from the National Old Age Pension scheme (IGNOAPS). While the NOAPS and other state pension schemes were a source of income for a large number of respondents, problems existed, such as time lag between application and sanction of the pension and insufficiency of pension amount to cover basic requirements. Another problem reported with the scheme was inclusion of ineligible beneficiaries. Out of a total of 523 ineligible beneficiaries in the surveyed sample, 35 were receiving pension under the IGNOAPS.

In a World Bank Study of the prevailing social pension schemes in Uttar Pradesh, Ajwad (2007) found that the even though the coverage rate itself was low at 0.76 per cent of all households in Uttar Pradesh, the targeting was relatively good.

2.3 Lessons to be Learned from Existing Schemes in India

After examining the modalities and evaluation of the two cash transfer schemes mentioned above, the following broad points emerge that are relevant for initiating a cash transfer scheme for kerosene and/or LPG:

- **Awareness campaigns** are necessary for any successful cash transfer program. Most of the intended beneficiaries of the JSY were aware of the benefits that were being provided to them, while awareness about the IGNOAPS was low in Jammu and Kashmir, and Himachal Pradesh. Unsurprisingly, the JSY has benefited a higher percentage of its target group.
- **Standardized verification procedures** (for age) have not been put in place while implementing the IGNOAPS and this problem has had to be worked around by involving local authorities. Similarly, before a national database is prepared, verification of the identity of intended beneficiaries of cash transfers for kerosene could be carried out in consultation with local authorities and **Panchayati Raj Institutions**. However, in such cases, there is a danger of corrupt local officers misappropriating or misallocating cash or accepting bribes for ratifying the status of beneficiaries.
- Moreover, payment of benefits under the IGNOAPS has been reported to be irregular in Jammu and Kashmir, and Himachal Pradesh. Such discrepancies are very harmful for the beneficiaries, especially in cases where they have limited sources of income. Care has to be taken that **all transfers are made in a timely manner** and this problem does not get replicated in the fossil fuel cash transfer program.

[47] The date is not mentioned in the document but it is most probably 2005–2006.

- Finally, **evaluation studies** are critical for analyzing the performance of the cash transfer program. Results on the level of awareness, regularity of transfers, delivery of benefits and other factors mentioned in this report should be gathered and examined closely to identify and address any problems in implementation and planning of the program.

3.0 Cash Transfer Schemes: International Experience

DESIGN ELEMENT	INDONESIA	IRAN	MEXICO
Size and frequency of transfer	• The cost of the program was US$2.3 billion (excluding the organizational and administrative cost), around 25 per cent of the amount saved from subsidy reduction. • The rationale for the quantum of payments is not readily apparent from the English language literature on Indonesia's transfer schemes.	• The Reform Act stipulated that at least 50 per cent of the savings from removal of subsidy be used to compensate households for the price increase. • The president chose to pay US$37 per month (this is double the amount approved by the parliament).	• The amount of transfer varies depending on the status of the recipient households. • The transfer is made every two months. • An energy component was added in the scheme in 2007, and the amount was US$4.60, which is 18.4 per cent of the energy expenditure of the beneficiaries of Oportunidades
Delivery mechanisms	• An energy compensation card was issued to the identified beneficiaries. • Payments were made in two instalments (in October 2005 and January 2006). • The disbursement was either directly or through community leaders. • Post offices were used for delivering the transfers.	• Transfers made directly into specially created bank accounts. • The amount was transferred in advance but was kept frozen until the date of price increase. • Banking infrastructure was expanded and upgraded to facilitate the transfer.	• Transfers were initially made in cash through dedicated distribution centres. But this has changed since 2003. as the program is shifting towards debit cards. • Transfers are made to the female heads of the households.
Monitoring and evaluation	• Rapid appraisal of the program in 2005 and 2008. • Cases of illegal diversion of funds towards non-eligible beneficiaries were reported. • Absence of a dedicated complaint registration unit for the program.	• No formal model has been introduced but there seems to be a proactive response from the government in addressing the problems as they arose.	• Presence of an independent impact evaluation protocol in the Oportunidades program. • Rapid assessments have been carried out at key stages.
Communication strategy	The government had a public relations campaign alongside the introduction of the program in 2005.	Regular publication of Q & A by the media.	The government has a communications strategy that includes regular publication of Q&As.
Sources:	ASEAN (n.d.); Bacon & Kojima (2006a ; 2006b); Cameron & Shah (2011); Hastuti, et al. (2006); Satriana (n.d.); Widjaja (2009)	Guillaume, Zytek & Farzin (2011); Bozorgmehr (2012)	Angelucci & Attanasio (2006); Fernald, Gertler & Neufel (2008); Government of Mexico (2010); Niño-Zarazúa (2010); Visa (n.d); World Bank (2010)

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.

For further information contact Ms. Kerryn Lang at: klang@iisd.org or info@globalsubsidies.org or +41.22.917.8920

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.

Darbari Seth Block, IHC Complex, Lodhi Road, New Delhi - 110 003, INDIA

Tel. (+91 11) 2468 2100 and 41504900 | Fax (+91 11) 2468 2144 and 2468 2145 | For general inquires contact: mailbox@teri.res.in