Quasi-Fiscal Costs Arising from the Administered Prices of Energy Products in Bangladesh

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Abstract

Natural gas, power, and petroleum products are highly under-priced in Bangladesh, necessitating huge government subsidy for these energy products. These subsidies have generated substantial fiscal and quasi-fiscal costs, posing a considerable risk to government's fiscal management as well as affecting the financial condition of energy SOEs and liquidity of the state-owned commercial banks. The paper quantifies the quasi-fiscal costs arising from the under-pricing of the energy products and puts forth arguments for gradually phasing out the energy subsides. While admitting that the withdrawal of subsides would affect the poor households very badly, the paper contends that a better way to extend assistance to the poor would be to use the savings (out of the withdrawal of subsides) for increasing public spending on well-targeted social safety net programmes. The paper also calls upon the energy SOEs to make periodic adjustments of energy prices and take steps to bring down the system losses by improving their operational performance and management efficiency.

1. Introduction

In Bangladesh, the prices of energy products like natural gas, power and petroleum products are set administratively to shield consumers from the full force of international price increases. In recent years, the adjustment of energy product prices has not been adequate to reflect their actual cost of production or procurement. Although a pricing formula was introduced in November 2003 for natural gas and petroleum products, and in January 2004 for power, the formula

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has not yet been applied and prices are adjusted infrequently on an ad hoc basis. This continued underpricing has built up huge losses at state-owned enterprises (SOEs). As a result, they have borrowed heavily from the banking system resulting in a liquidity crisis for banks. Some SOEs depend on borrowing from the government, which will eventually lead to substantial debt service liabilities to the government. The widespread subsidy on energy products has also generated substantial fiscal and quasi-fiscal costs to the government (Ahmed, 2006). Substantial quasi-fiscal costs arise from government guarantees against loans negotiated by SOEs from domestic and international banks. If a contracting SOE fails to pay its loan in time, the guarantees are invoked and the liabilities for payment are vested upon the government; this has future fiscal implication. Therefore, the underpricing of energy products poses considerable risk to fiscal management.

With the above background in mind, this study aims at attaining the following objectives:

- Quantifying quasi-fiscal costs emanating from underpricing of natural gas, power and petroleum products;

- Assessing the likely impact of price adjustment on the poor; and

- Suggesting policy measures for mitigating the impact of price adjustment on the poor.

2.   Conceptual Framework for Quantifying Quasi-Fiscal Costs

According to International Monetary Fund's (IMF) *Manual on Fiscal Transparency* (2001), "Quasi-fiscal activities (QFAs) may be conducted by the central bank and public financial institutions and non-financial public enterprises that are fiscal in character. QFAs are often introduced by simple administrative decisions, are not recorded in budgets or budget reporting, and typically escape legislative and public scrutiny. The term "Quasi-fiscal" indicates that the accounts of parastatal enterprises are included. A wide range of public enterprise operations may be identified as QFAs, such as underpricing, losses due to operating and technical inefficiency, and soft budget constraints. These QFAs are responsible for huge losses of energy SOEs, which lead to their borrowing from the government as well as from the banking system.

The government provides both equity and long-term loans to SOEs. The government also assists SOEs by giving sovereign guarantees for borrowing from domestic and international banks. Such government-guaranteed loans add to the

government's contingent liabilities. Loans to SOEs carry a high risk of default. In particular, lending policies of these banks in support of loss-making SOEs have increased the level of their non-performing loans and this in turn leads to eventual pressure for bank recapitalization. It is a basic requirement of fiscal transparency that a statement on QFAs be included in the budget documentation, which indicates the public policy purpose of each quasi-fiscal activity, its duration, and intended beneficiaries (IMF, 2001).

The quantification of quasi-fiscal costs is difficult and contentious. Some parameters for quantifying quasi-fiscal costs emanating from administered energy prices are given in Box 1.

Box 1: Some Parameters for calculating quasi-fiscal costs

❖ *Underpricing*: Underpricing refers to the pricing of energy products below market price or actual cost of supply. As petroleum products are internationally traded goods, their prices should be determined by the market. On the other hand, if natural gas and power are mainly generated within a country, their prices may be worked out on the basis of their actual supply cost. The underpricing of energy products may be expressed in terms of:

  ◆ Difference between actual supply costs of natural gas and power and their existing tariff rates; and
  ◆ Gap between international and domestic prices in case of petroleum products.

❖ *Operational inefficiency*: Technical losses and unmetered/unbilled consumption (including from theft) arise from poor operating performance of SOEs, which results in low collection rate of revenue. The parameters are:

  ◆ System losses
  ◆ Collection of revenue as percentage of total bills

❖ *Soft budget constraints*: As a result of underpricing of energy products and operational inefficiency of energy SOEs, SOEs face soft budget constraints in the form of accumulated losses. This constitutes quasi-fiscal obligation in the sense that it will eventually need to be dealt with by the government. The outstanding loans of an SOE to banks may be used as an indicator of soft budget constraint.

The following four indicators have been used to show the state of finances of major energy SOEs emanating primarily from underpricing of energy products:

  ◆ Operating profit/loss of an SOE (% of GDP) showing whether wage bill and capital depreciation expenses together exceed value addition.
  ◆ Net profit/loss position of an SOE (% of GDP), which shows the overall financial performance of an SOE.
  ◆ Trends in net worth (% of GDP), which shows whether financial losses and associated debt build-up have eroded an SOE's net worth.
  ◆ Return on assets (RoA) measures the efficiency of resource use by an SOE as to whether the realized RoA is sufficient to meet the cost of capital and generate an adequate return on investment.

3.   Energy Pricing Policy in Bangladesh

The government recognizes the need for setting energy prices on a rational basis. To accomplish this, the government adopted a pricing framework for natural gas is petroleum products in November 2003. In this pricing framework, the price of natural gas is to be determined by considering the production/purchase cost of gas of international oil companies (IOCs) (which is linked to the international price of high sulfur fuel oil [HSFO]), transmission and distribution costs, and supplementary duty and value added tax (VAT). In the pricing framework for petroleum products, the prices are based on import parity prices. The power pricing framework adopted in January 2004 envisages that the average end-user electricity tariff for each of the eleven categories of customers will be based on covering the costs of supplying electricity to a particular customer class (costs of generation, system services, transmission, and distribution). It is expected that the approved pricing framework would (1) allow consumers to recognize the true costs of energy, thus giving them the needed market pricing signals, which should encourage more rational use of energy products; and (2) enable SOEs to cover operating expenses and debt-servicing liabilities and generate a surplus to finance part of the energy sector's investment program, rather than relying totally on government finances.

The institutional framework for administering the prices of natural gas and petroleum products is the Energy and Mineral Resources Division of the Ministry of Power, Energy and Mineral Resources. The Power Division of the same Ministry is responsible for setting power prices. Recently, Bangladesh Energy Regulatory Commission (BERC) was established and entrusted with setting energy prices. BERC will set tariffs after having discussion with the government and taking into consideration published policy guidelines and methodology. The Commission is also empowered to consider various factors in setting tariffs, among which are the interests of consumers. These considerations would enable the Commission to set prices, which could incorporate subsidies to specific groups. The Finance Division, Ministry of Finance, provides equity and long-term loans to SOEs, and gives sovereign guarantees for borrowing from domestic and international banks.

4.   Quantifying Quasi-Fiscal Costs in the Energy Sector

In this paper, quasi-fiscal costs arising from underpricing of natural gas, power, and petroleum products are quantified along the following lines:

●   Describe the institutional framework for price setting;

- Calculate the magnitude of underpricing of natural gas, power and petroleum products; and
- Measure losses arising mainly from underpricing of energy products in three major energy SOEs: Bangladesh Oil, Gas, and Mineral Corporation (BOGMC, also known as Petrobangla), Bangladesh Power Development Board (BPDB) and Bangladesh Petroleum Corporation (BPC).

4.1   Natural Gas

Natural gas accounts for about 70 percent of the commercial energy needs in Bangladesh. The supply chain in the gas sub-sector can be divided into phases from exploration of gas to its distribution to final consumers, with exploration and production constituting upstream activities, and transmission and distribution downstream activities. The gas sub-sector is regulated by the Energy and Mineral Resources Division and is operated by nine state-owned operating companies under BOGMC. The Hydrocarbon Unit (HCU) was established to assist and advise the Energy and Mineral Resources Division on policy and technical issues in selected areas.

Gas is produced by

- Three state-owned gas production companies (BAPEX, BGFCL and SGFL)
- Four international oil companies (IOCs) (Cairn, Niko, Tullow and Chevron) also explore and produce natural gas under Production Sharing Contracts (PSCs)

The IOCs produce about 42 percent of total gas; the remaining 58 percent comes from state-owned companies. Gas transmission is undertaken by

- Gas Transmission Company Limited (GTCL)

State-owned regional gas transmission and distribution companies are

- Titas Gas Transmission and Distribution Company Limited (TGTDCL)
- Bakhrabad Gas Systems Limited (BGSL)
- Jalalabad Gas Transmission and Distribution Systems Limited (JGTDSL)
- Pashchimanchal Gas Company Limited (PGCL)

Rupantarita Prakitik Gas Company Limited (RPGCL) is involved in compressed natural gas (CNG) and liquefied petroleum gas (LPG).

Institutional Framework for Setting Prices of Natural Gas

The organizational structure of the gas sector is given in Figure 1.

Figure 1: Organizational Chart- Bangladesh Gas Sector
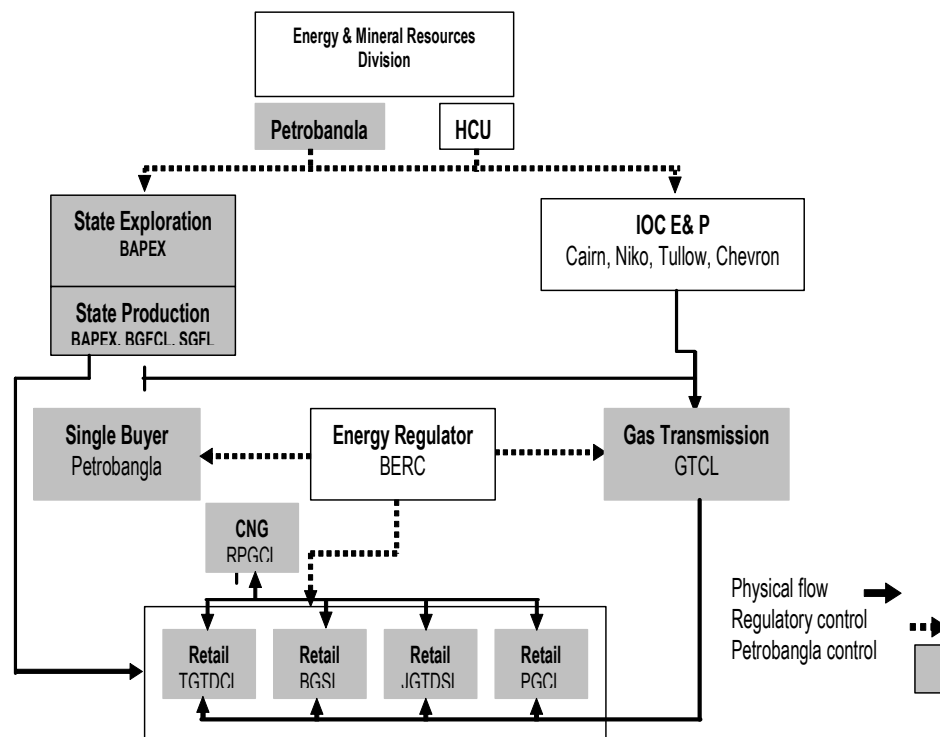
In light of the recommendations of the Energy Monitoring Committee (2003), the government appears to have adopted an interim transparent natural gas pricing framework. Under this framework, gas prices are linked to the cost of gas supply and adjusted periodically, in line with movements in international prices of HSFO, the replacement fuel for natural gas. However, one of the major limitations of the above framework is that it does not take into consideration the opportunity cost of natural gas. If natural gas is valued at its opportunity cost, which is the regional border price of gas, the current pricing formula for natural gas is based on below market price. The approved pricing formula for natural gas is the following: Gas price for the consumer = purchase/production cost + cost of supply + supplementary duty + VAT.

To operationalize the above formula, gas prices are related to the following three sources of gas: IOC gas, national gas and profit gas:

IOC Gas

Current gas pricing terms under production-sharing contracts (PSCs) signed between BOGMC and IOCs provide an equitable split of rent to both parties. Existing PSCs effectively cap the price of IOC gas between US$ 120/MT and US$ 140/MT, which equates to about US$ 23–26/barrel. This is 38% – 43% percent of HSFO price. At present there are no taxes on IOC gas. All taxes are borne by the government/BOGMC.

National Gas

● The cost of national gas in the current formula is fixed at 7 percent of HSFO price as per recommendation of the Energy Monitoring Committee in 2003. The following items are included in the formula to determine the cost of national gas:

● Transmission and distribution cost is fixed at a level to cover the full operating cost and ensure 15 percent rate of return on net fixed assets.

● Supplementary duty is charged on the volume of gas taking Taka 36.00/thousand cubic feet (mcf).

● Value Added Tax is imposed at 15 percent of total cost of national gas plus supplementary duty.

Profit Gas

As part of the PSC, BOGMC receives profit gas at no cost from the IOCs. The amount of profit gas ranges from 50 to 70 percent of the gas that remain after the IOCs deduct 55-60 percent for cost recovery.

Quantifying Quasi-Fiscal Costs arising from the Administered Prices of Natural Gas

Current gas prices are set by the government for different categories of consumers. Although about 70 percent of natural gas is used for the production of power and fertilizer, tariff rates for power and fertilizer are much lower than those of other customers. Using the government's pricing formula for natural gas, the Energy Monitoring Committee calculated gas prices by consumer categories in 2003. These prices were updated using the government's formula-based estimates[1] (Table 1).

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[1]   The formula-based estimates of natural gas prices underestimate the opportunity cost.

Table 1: Natural Gas Tariff by Consumer Category

Category	Administered Prices (Tk/mcf)a	Prices Estimated by the Energy Monitoring Committee (Tk/mcf)b	Updated Prices Based on the Government Formula (Tk/mcf)c
Power	73.91	88.40	96.83
Fertilizer	63.41	84.41	92.46
Industries	148.13	99.24	108.70
Commercial	233.12	177.38	194.25
Tea Estate	148.13	104.37	114.32
Brick Field	233.00	104.37	114.32
Domestic-Single	350.00	169.39	185.54
Domestic-Double	400.00	169.39	185.54
Captive Power	105.59	99.24	108.70

mcf = thousand cubic feet, Tk = taka.

a   Domestic (single/double) prices according to burner, not by mcf.

b   Gas prices calculated by the Energy Monitoring Committee using the government's pricing formula.

c   The Energy Monitoring Committee prices were updated using the formula-based estimates.

Source: Author's estimates based on the data from BOGMC.

Table 2: Implicit Subsidy for the Use of Natural Gas in Power and Fertilizer for FY2007

Item	Price (Tk/mcf)	Quantity (million mcf)	Total (Tk million)
Power			
Formula-Based Price	96.83	259.15	25,093.49
Administered Price	73.91	259.15	19,153.78
Subsidy for Use of Natural Gas in Power			**5,939.71**
Fertilizer			
Formula-Based Price	92.46	94.90	8,774.45
Administered Price	63.41	94.90	6,017.61
Subsidy for Use of Natural Gas in Fertilizer			**2,756.84**
Total Subsidy on Natural Gas for Use in Power and Fertilizer			**8,696.55**

mcf = thousand cubic feet, Tk = taka.

Source: Author's calculation based on the data from BOGMC.

If the updated prices based on the government's formula and the administered prices of gas are compared, the price gap is Tk. 22.92/mcf for power and Tk. 29.05/mcf for fertilizer. The magnitude of implicit subsidy for use of natural gas in power and fertilizer for FY2007 was estimated (Table 2).

Table 2 indicates that even based on the government's approved formula, the implicit subsidy for the use of natural gas in power amounted to Tk. 5939.71 million and in fertilizer to Tk. 2756.84 million, for a total of Tk. 8696.55 million in FY2007. However, the implicit subsidy would be substantially higher if domestic gas prices are fully linked to current international oil price equivalent.

High System Loss in the Gas System

System loss (the difference between the amounts of gas purchased against the amount billed for) has been a constant and damaging drain on the financial strength in the gas sector. Distribution system losses average about 5.5 percent of total production each year (Figure 2). This figure is about six times the level seen in developed gas markets around the world (Wood Mackenzie, 2006). Out of this 5.5 percent figure, 2 percent is viewed as being the limit for technical losses and the remaining 3.5 percent figure is due to non-technical reasons, largely theft.

Figure 2: Total Losses in the Gas System (%)
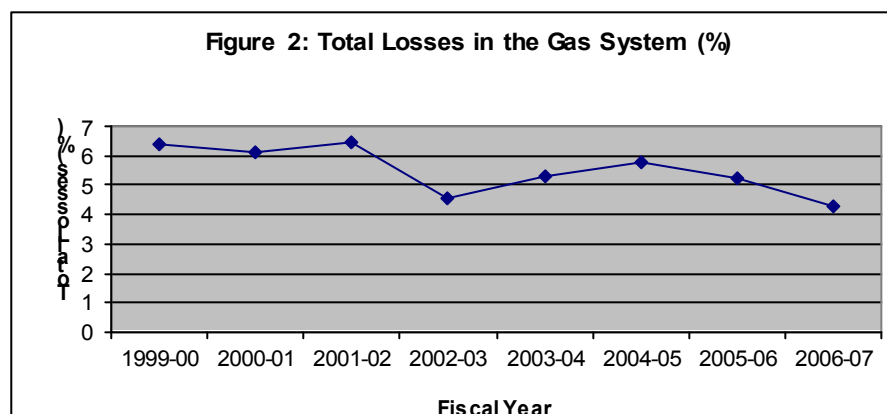
Source: BOGMC

Quasi-fiscal costs arising from underpricing of natural gas have been calculated using the following four measures (Table 3):

1. ***Operating profit/loss***: Operating profit of BOGMC as share of GDP remained constant during FY04 and FY05.

2. ***Net profit/loss position***: Net profit of the organization (as percent of GDP) stagnated.

3. ***Trends in net worth***:[2] Net worth of BOGMC shows an erratic trend during the period under investigation.

4. ***Return on assets***[3] (RoA): The rate of return on assets (RoA) of BOGMC has fallen in the terminal year (FY05). RoA averaged 6.33 percent annually during the period. This is significantly short of the warranted RoA, assumed to be 13 percent in a World Bank study (2003). This implies a significant shortfall in returns, and hence resource transfers.

Table 3: Operating Performance of Bangladesh Oil, Gas, and Mineral Corporation

Indicators	FY2001	FY2002	FY2003	FY2004	FY2005
1. Operating profit/loss (% of GDP)	0.13	0.10	0.16	0.17	0.17
2. Net profit/loss (% of GDP)	0.08	0.07	0.12	0.11	0.11
3. Net worth (% of GDP)	0.74	1.11	1.10	0.56	1.47
4. Return on assets (%)	5.94	3.85	6.21	9.80	5.85

Source: Monitoring Cell, Finance Division

4.2 Power

Currently, only 42 percent of the population has access to electricity; and access in the rural areas is lower (33 percent). Poorer rural areas have even lower access. In addition to the low access and the low availability, another factor inhibiting pro-poor growth is poor quality of service delivery (interrupted power supply, voltage fluctuations). The poor quality is in part due to poor financial performance of the three main utilities—the Bangladesh Power Development Board (BPDB), Dhaka Electric Supply Authority (DESA), and the Rural Electrification Board (REB).

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2   Net Worth is defined as the difference between total assets and total liabilities.

3   Return on Assets (RoA) =Net profit /Total assets.

Electricity is produced by

- State-owned Bangladesh Power Development Board (BPDB)
- Private sector Independent Power Producers (IPPs)

IPPs have been involved through the adoption of a private sector power generation policy in October 1996 (revised in November 2004).

Power transmission is undertaken by

- State-owned Power Grid Company of Bangladesh Limited (PGCB)

State-owned power distribution companies are

- Bangladesh Power Development Board (BPDB)
- Dhaka Electric Supply Authority (DESA)
- Dhaka Electric Supply Company Limited (DESCO)
- West Zone Power Distribution Company Limited (WZPDCL)
- Rural Electrification Board (REB)

The power pricing framework approved by the government in January 2004 sets out that the average end-user electricity tariff for each customer class will be set to fully cover reasonable costs of supplying electricity to that customer class (including cost of generation, system services, transmission, and distribution), and generate a surplus to expand coverage and supply, and improve the quality of service.

Institutional Framework for Power Price Setting

The power pricing in Bangladesh is based on the three levels of power supply: generation, transmission and distribution. Figure 3 shows the structure of power supply industry in Bangladesh.

The government sets power prices. The government approved **Power Pricing Framework** in January 2004 for linking cost recovery to the actual cost of supplying electricity. Some salient features of the framework are given below:

Quantifying Quasi-Fiscal Costs emanating from the Administered Prices of Power

Current power tariffs are inadequate for power utilities to meet their operational expenses and debt service obligations, and to finance a proportion of their investment requirement from internal cash generation. A wide gap exists between tariff rates (bulk and retail) of BPDB power and their supply costs, which makes

Figure 3: Structure of the Electricity Supply Industry in Bangladesh
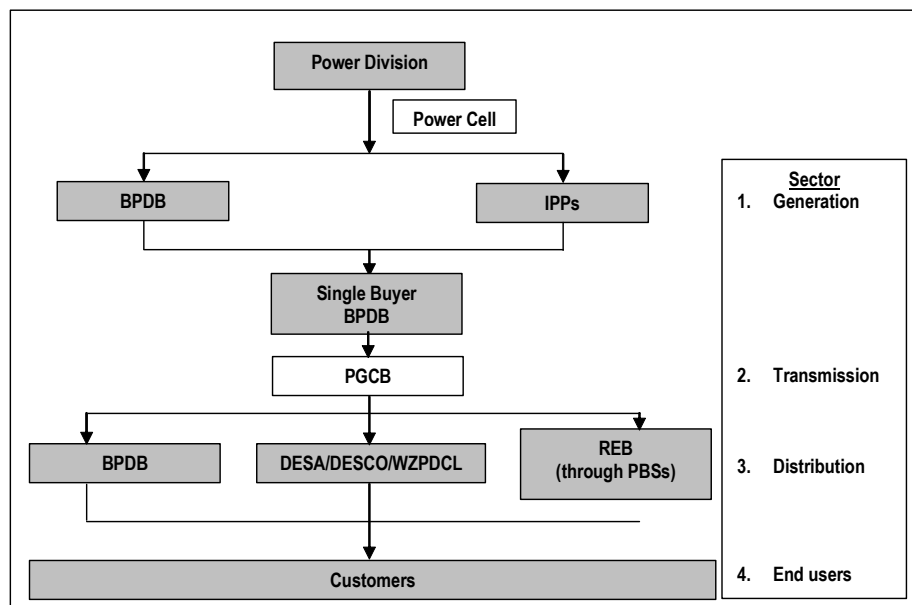
Table 4: Implicit Subsidy in Bulk Selling of Bangladesh
Power Development Board Power for FY2007

Bulk Consumer	Sale Units MkWh)	Average Cost of Generation (Tk/kWh)	Average Selling Price (Tk/kWh)	Implicit Subsidy (Tk/kWh)	Total Implicit Subsidy (Tk million)
DESA (132 kV)	5242.995	2.21	1.97	0.24	1258.32
REB (33 kV)	8039.93	2.21	1.88	0.33	2653.18
DESCO (33 kV)	2182.955	2.21	2.03	0.18	392.93
WZPDCL (33 kV)	1281.945	2.21	2.01	0.2	256.39
Total	**16747.825**				**4560.82**

Source: Author's calculation based on data from Power Cell, Power Division

BPDB a losing concern. Bulk sales to Dhaka Electric Supply Authority (DESA), Rural Electrification Board (REB), Dhaka Electric Supply Company Limited (DESCO), and West Zone Power Distribution Company Limited (WZPDCL) constitute about 80 percent of BPDB's total sales. An implicit subsidy arises due to the difference between generation cost and bulk selling rate (Table 4).

System Loss in the Power Sector

System losses in the power sector are still significant (Table 5).

Quasi-fiscal costs arising from underpricing of BPDB power have been calculated using the following four measures (Table 6):

Table 5: System Loss in Public Power Enterprises, FY06-FY07

Organizations	FY07
BPDB	16.58
DESA	20.53
DESCO	13.44
REB	12.09
WZPDCL	14.53

Source: Power Cell, Power Division

Table 6: Operating Performance of BPDB, FY01 - FY07

Indicators	FY01	FY02	FY03	FY04	FY05	FY06	FY07
1. Operating profit/loss (% of GDP)	(0.07)	(0.02)	0.07	0.02	(0.11)	(0.18)	(0.21)
2. Net profit/loss (% of GDP)	(0.18)	(0.16)	0.06	(0.06)	(0.17)	(0.23)	(0.26)
3. Net worth (% of GDP)	3.16	2.87	2.84	2.62	2.32	1.98	1.66
4. Return on assets (RoA)	(0.02)	(0.02)	0.01	(0.01)	(0.03)	(0.04)	(0.05)

Source: Monitoring Cell, Finance Division

1. ***Operating profit/loss***: Operating profit of BPDB (as share of GDP) was positive during FY03 and FY04 but turned negative in subsequent years.

2. ***Net profit/loss position***: BPDB incurred net loss (as percent of GDP) in all the years under study except in FY03. Net loss of the organization was the highest in FY07.

3. ***Trends in net worth***: Net worth of BPDB (as share of GDP) showed a secular decline during the period under investigation.

4. ***Return on assets*** (RoA): The rate of return on assets (RoA) of BPDB was negative in all the years under study except in FY03. This implies a significant shortfall in returns, and hence resource transfers.

4.3   Petroleum Products

Institutional Framework for Setting Prices of Petroleum Products

Petroleum products constitute about 25 percent of the commercial energy use in Bangladesh. The main petroleum product used is diesel (HSD), which represented about 64 percent of overall consumption of petroleum products in FY07. The institutional framework for administering the prices of petroleum products is Energy and Mineral Resources Division. The decision of administered prices is implemented by the Bangladesh Petroleum Corporation (BPC). Established in 1976, BPC is a holding corporation under the Companies Act and holds the shares of oil marketing companies and a refinery. The entities include Eastern Refinery Limited (ERL), three oil marketing companies – Padma Oil Company Ltd., Meghna Petroleum Ltd. and Jamuna Oil Company Ltd. and four smaller companies.

With a view to fixing the prices of petroleum products by taking into account their procurement costs, a pricing formula was approved by the government in November 2003. According to the approved pricing formula, the prices of petroleum products are fixed and can be reviewed and re-fixed at a specific interval of time. The pricing formula for petroleum products is as follows: Petroleum price at consumer level = **i**mport parity price + infrastructure and storage fees + transportation within the country + oil marketing companies' margin + dealers' commission + customs duty + VAT.

Quantifying Quasi-Fiscal Costs Arising from the Administered Prices of Petroleum Products

The imported petroleum product price structure has the following three levels (Figure 4):

● *Import parity price*: Import parity price (IPP) represents the cost and freight (c & f) charges for the import of petroleum products from Singapore (a measure of the border price).

● *Mark-up over IPP*: It includes import duties and taxes, transport and handling charges, marketing margins and BPC's profit/loss.

● *Ex-BPC selling price*: It is IPP plus mark-up.
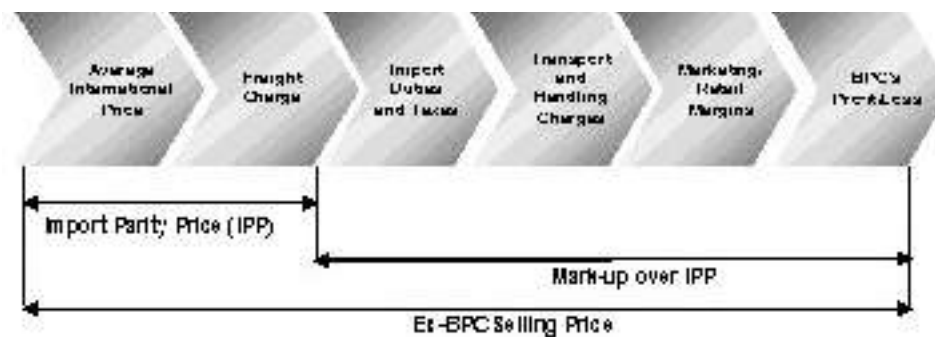
Figure 4: Value Chain of Imported Petroleum Products

Table 7: Breakdown of Ex-Bangladesh Petroleum Corporation (BPC) Selling Price
(Tk per liter: 1 April 2007)

Item	HOBC (Octane)	HSD (Diesel)	SKO (Kerosene)	JP-1 (Jet Fuel)
Import Parity Price	34.05	34.01	32.18	35.46
Taxes	7.10	7.10	7.10	7.10
Transport Costs, Marketing Margins etc.	0.26	0.27	0.25	0.25
Financing Charges	0.86	0.86	0.82	0.89
BPC Service Charges	0.04	0.04	0.04	4.37
Ex-BPC Cost	42.31	42.28	40.39	48.07
Ex-BPC Selling Price	58.00	33.00	33.00	52.49
Ex-BPC Per Liter Profit/(Loss)	**15.69**	**(9.28)**	**(7.39)**	**4.42**

Source: BPC

According to the approved pricing formula, on 1 April 2007 the ex-BPC cost of diesel stood at Tk. 42.28/liter, while the ex-BPC selling price was Tk. 33.00 (Table 7). The price gap between the ex-BPC cost and ex-BPC selling price of diesel amounted to Tk. 9.28/liter. At that time, the ex-BPC cost of kerosene was Tk. 40.39/liter, while the ex-BPC selling price was Tk. 33.00. The price differential of kerosene amounted to Tk. 7.39/liter.

The government raised prices by about 21 percent for diesel and kerosene, and by about 16 percent for petrol and octane effective from 2 April 2007. Even after this price adjustment, the implicit subsidy for diesel and kerosene remains substantial. For example, on 29 October 2007, the implicit subsidy per liter stood at Tk. 17.44 and Tk. 17.95 for diesel and kerosene, respectively. Based on 1 April 2007 prices, the implicit subsidy for diesel was Tk. 25,250.32 million and for kerosene Tk. 4332.54 million in FY2007 (Table 8).

Except for kerosene, domestic prices of petroleum products in Bangladesh are among the lowest in the region. The gap between Bangladesh and Indian prices is quite large. Price adjustment of petroleum products in Bangladesh (with the exception of kerosene) has been less than that in other South Asian countries. Except for kerosene, domestic prices of petroleum products were the highest in India and lowest in Bangladesh. As the gap between Bangladesh and Indian prices is quite large, there is a strong incentive to smuggle diesel to India.

Table 8: Implicit Subsidy to the Consumers of Diesel and Kerosene for FY2007

Item	Price (Tk/liter)	Quantity (million liters)	Total (Tk million)
Ex-BPC Cost/Selling Price of Diesel			
Ex-BPC Cost	42.28	2720.94	115041.34
Ex-BPC Selling Price	33.00	2720.94	89791.02
Implicit Subsidy on Diesel	25,250.32		
Ex-BPC Cost/Selling Price of Kerosene			
Ex-BPC Cost	40.39	586.27	23679.45
Ex-BPC Selling Price	33.00	586.27	19346.91
Implicit Subsidy on Kerosene	4332.54		
Total Implicit Subsidy on Diesel and Kerosene	29582.86		

Source: Author's calculation based on the data from BPC.

Quasi-fiscal costs arising from underpricing of petroleum products have been calculated using the following four measures:

1. ***Operating profit/loss***: During the period from FY01 to FY07, operating loss of BPC as share of GDP increased substantially.

2. ***Net profit/loss position***: BPC incurred colossal losses during the period. Net loss of the organization as percent of GDP increased sharply.

3. ***Trends in net worth***: Net worth of BPC (as % of GDP) eroded enormously by accumulated losses during the period under investigation.

4. ***Return on assets*** (RoA): The rate of return on assets (RoA) of BPC has fallen tremendously. This implies an immense shortfall in returns, and hence resource transfers.

The deterioration of BPC's operating performance is shown in Table 9.

Table 9: Operating Performance of BPC, FY01- FY07

Indicators	FY01	FY02	FY03	FY04	FY05	FY06	FY07
1. Operating profit/loss (% of GDP)	(0.51)	(0.14)	(0.09)	(0.22)	(0.70)	(0.66)	(0.53)
2. Net profit/loss (% of GDP)	(0.61)	(0.24)	(0.05)	(0.30)	(0.78)	(0.78)	(0.65)
3. Net worth (% of GDP)	(0.82)	(0.92)	(1.07)	(1.08)	(1.62)	(2.23)	(2.51)
4. Return on assets (RoA)	(0.43)	(0.16)	(0.05)	(0.18)	(0.68)	(0.04)	(0.58)

Source: Monitoring Cell, Finance Division

BPC's Debt

BPC's accumulated losses constitute a quasi-fiscal obligation, which will eventually need to be dealt with by the government. The government has assisted BPC by giving sovereign guarantees against its borrowing from nationalized commercial banks (NCBs) and from the Islamic Development Bank (IDB) to finance the import of petroleum products. By November 20, 2007, BPC's liabilities to four NCBs rose to Tk. 30,310 million (Table 10).

Table 10: Liabilities of BPC to Four NCBs (as on November 20, 2007)

NCBs	Amount (in million Taka)
Sonali Bank	2460
Janata Bank	10240
Agrani Bank	15810
Rupali Bank	1800
Total	30,310

Source: Bangladesh Petroleum Corporation

The large borrowing from NCBs has created a liquidity crisis in the banking system. As a result, these banks (especially Sonali Bank) are having increasing difficulty in maintaining statutory liquidity ratio (SLR) with the Bangladesh Bank and have to regularly pay a penalty. On the other hand, these banks have to borrow funds from the money market at higher interest rates. Up to November 20, 2007, BPC's total outstanding debt from the IDB stood at US$ 585 million. In FY2006, to meet the liquidity of BPC, a three-year bond of Tk. 10 billion was issued in favor of Sonali Bank. In the budget for FY08, the government has assumed the liability of BPC amounting to the tune of Tk. 75230 million and allocated the same amount in the budget as non-cash bond.

5.   Assessing the Likely Impact of Price Adjustment on the Poor

5.1   Natural Gas

The principal consuming sectors for natural gas include power, fertilizer, domestic, industry and captive power. There is a price gap of Taka 22.92 and Taka 29.05 per mcf in case of consumption of natural gas by power and fertilizer, respectively. Gas subsidies to the power sector, using almost half of the gas produced, hardly benefit the large majority of the poor because of their very limited access to power. The findings of a recent study show that for every Taka 100 of indirect fertilizer subsidies that reach the poorest quintile, the cost to the budget is Taka 1785 (IMF 2006a). This indicates that existing fertilizer subsidies – both direct and indirect subsidies through natural gas – are a very inefficient way to protect the incomes of poor households. Therefore, price adjustment of natural gas for power and fertilizer is needed to cover the supply cost. However, care should be taken regarding the extent of price adjustment so that it does not

hurt the poor. The agro-based economy of Bangladesh is highly dependent on irrigation and fertilizer. The expansion of irrigation and production of fertilizer are dependent on natural gas. However, for natural gas, the implicit subsidies from underpricing are less well-targeted, as the bottom quintile receives only 9 percent of the benefits of natural gas subsidy, while the top quintile captures about 45 percent (IMF, 2006b).

5.2   Power

The major consuming sectors of REB power include domestic (41.38%), industry (37.95%), irrigation (14.51%) and commercial sector (5.96%). Any price adjustment in the bulk sale of power to REB may be detrimental to the cause of the poor. So is the case with small industries (1.69%), irrigation pumps (1.16%), and street lighting and pumps (0.35%).

5.3   Petroleum Products

5.3.1 Diesel

In FY07, about 60 percent of total diesel was consumed by the transport sector (roads, railway and inland water) and about 31 percent was used in irrigation. Increased diesel prices will tend to increase the cost of living of the poor directly through an increase in transport costs and indirectly through raising the prices of consumer goods. A withdrawal of the diesel subsidy will also raise the cost of production in agriculture.

5.3.2 Kerosene

About 98 percent of total consumption of kerosene is done by domestic sector, by and large the poor. So, any price adjustment in kerosene would hurt the poor because kerosene is the most important fuel for poor households, who use it for cooking and lighting purposes. However, the households in the poorest quintile (based on per capita consumption) receive only about 11 percent of the benefits of petroleum product subsidies in contrast with the top quintile receiving 35 percent of the benefit (IMF, 2006b).

There is substantial leakage of energy subsidy to better-off households, as the top two quintiles receive 55 percent of petroleum subsidies and 65 percent of gas subsidies (IMF, 2006a). Price subsidies – whether they are on kerosene alone or also on petrol and diesel – are skewed in favor of higher quintiles (World Bank, 2006). On the other hand, well-targeted safety net programs protect the poor far more efficiently than energy subsidy.

6.   Conclusions and Recommendations

This study confirms a large quasi-fiscal costs in energy SOEs. Estimates suggest that the implicit subsidy for use of natural gas in power and fertilizer amounted to Taka 5,939.71 million and Taka 2,756.84 million, respectively, in FY07. The implicit power subsidy (bulk sale) was to the tune of Taka 4560.82 million in FY07. Moreover, the magnitudes of subsidy in case of diesel and kerosene were Taka 25,250.32 million and Taka 4332.54 million, respectively in FY07. The magnitude of implicit subsidy to these energy products in FY07 amounted to Taka 42,840.23 million (Table 11) or about 1 percent of GDP.

Table 11: Magnitude of Implicit Subsidy to Selected Energy Products in FY07

Nature of Subsidy	Taka (in million)
Use of natural gas for power	5,939.71
Use of natural gas for fertilizer	2,756.84
Subsidy on Natural Gas	**8,696.55**
Subsidy on Power (Bulk sale)	**4560.82**
Subsidy on Diesel	25250.32
Subsidy on Kerosene	4332.54
Subsidy on Petroleum Products	**29582.86**
Total	**42,840.23**

Source: Author's calculation

Energy sector continues to be a source of fiscal risk and stands on the way of promoting economic growth and poverty reduction. The failure of the government to fully adjust energy prices has led to large subsidy for energy products. The government's policy of subsidizing natural gas, power, and petroleum products has exacerbated the financial conditions of BOGMC, BPDB and BPC, as well as NCBs. This is manifested in a number of indicators such as operating profit/loss of SOEs, their net profit/loss, erosion of net worth, return on assets, and outstanding loans to banks. The accumulated losses of energy entities also constitute a quasi-fiscal obligation that will eventually need to be addressed by the government.

Recommendations

In view of the above findings, this study suggests the following policy measures:

- *Phasing out of all energy subsidies*. As energy subsidies are poorly targeted, all forms of energy subsidies may be phased out within a span of five years. The key rationale behind the phasing is to allow the domestic economy and individual consumers time to adapt to higher energy prices. A better way to target government assistance for poorer households would be to use the savings from fuel subsidies for increasing public spending on well-targeted social safety net programs. In this study we consider the following two types of social safety net programs:

- *Introducing card system for kerosene for the poor*. Kerosene is more important in the budgets of poor households than any other energy products. Maintaining these subsidies on kerosene is, therefore, recommended as a way of mitigating the effect of price reforms on the poor. But in kerosene, there is substantial leakage of benefits to the top two quintiles, with approximately 45 percent leaking to the top two quintiles, while only 15.2 percent of the subsidy reaches the bottom quintiles (IMF, 2006a). Another study shows that the highest quintile of households (in consumption per capita terms) receive about 23 percent of the benefit from kerosene subsidy as opposed to only 15 percent for the lowest quintile (IMF, 2006b). So, the implicit subsidy on kerosene may be phased out within a span of five years to give the poor time to adjust. Following Vulnerable Group Feeding (VGF), Vulnerable Group Development (VGD) and similar other programs existing in the country, we may go for introducing card system for kerosene for the poor. Lessons may be taken from the experiences of India and Sri Lanka in this regard.

- *Increasing cash transfers through expanding social safety net programs for the poor from the budget*. To offset the impact of price adjustment on the poor, cash transfers through social safety net programs from the budget may be undertaken for enabling the poor to pay for gas, electricity and diesel. Primary Education Stipend Project or the Food for Works Program benefit the poor, since only 22 to 30 percent of the benefits leak to the top two quintiles (IMF, 2006a). In order to find out the amount to be needed for cash transfers for diesel to poor farmers, we have looked at the consumption pattern of diesel for irrigation in FY05. In irrigation, 877.38 million liters of diesel were used, which accounted for about 33 percent of total diesel

consumption in that year. If we multiply 877.38 million liters by the price differential (Taka 16.88 per liter) and also by the proportion of poor households,[4] the figure stands at Taka 14.75 billion. This is the estimated amount that is needed for cash transfers for diesel to poor farmers for a year. But implementing such a targeted subsidy will require an adequate mechanism to ensure that most of the benefits accrue to the poor.

● The detailed mechanism of price adjustment may be worked out by the Bangladesh Energy Regulatory Commission (BERC) in consultation with the government. BERC may perform the task of making periodic adjustments of energy prices as per the approved formula.

● Vigorous enforcement of the existing anti-theft legislation is needed so that BOGMC, BPDB and DESA *inter alia*,: (i) impose hefty fines and rapidly disconnect those using energy illegally or supplying to third parties; and (ii) take rapid and effective measures against staff involved in improper meter reading in connivance with consumers.

● There should be pre-paid metering system for all forms of energy consumption to reduce system loss.

● For reducing large system losses and leakages in implicit energy subsidies, and improving the operational performance of energy SOEs, management efficiency needs to be improved through institutional capacity building of energy SOEs.

● Dependence on the import of petroleum products (petrol, octane and diesel) may be reduced by switching to CNG.

● A more appropriate energy pricing policy will free up government resources for social and infrastructure development and enhance social safety nets for the poorer segment of the population.

● The government may devise and implement a coherent strategy for creating productive employment programs and income generating activities for the poor with a view to raising their real income to enable them to access and utilize energy products.

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[4] In this study, small farmers are considered as poor households for the purpose of irrigation. According to Ministry of Agriculture 2004, 86.66 percent of total farming households are small farmers. Small farmers are those who have land ranging from 0.01 to 1 hectare.

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