Energy Wonkiness Weakens Economy

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Bangladesh is facing its worst energy crisis since liberation, affecting industrialization, trade, and daily life, and driving inflation. Despite surplus generation capacity, chronic power load-shedding persists. The energy sector's debt is $5 billion, and nearly half the energy supply depends on imports, paid in US dollars. The Taka's devaluation exacerbates the issue. Experts warn that without exploiting coal resources, accelerating petroleum exploration, and expanding renewable energy, the crisis will worsen, destabilizing the economy further.

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Bangladesh is experiencing the worst-ever energy crisis in 52 years of liberation. The over-encompassing effects have cast the dark shadows over industrialization, trade, commerce, life, and living. It has also pushed up inflation. The energy and power sector debt has cumulated to $5.0 billion. Despite having a substantial surplus generation capacity, the nation suffers from chronic power load-shedding. The demand for gas by power plants, fertilizer factories, industries, and commercial activities cannot be met even after utilizing the full gas supply capacity. According to the latest data, almost half the power and energy supplies depend on imports. The price of electricity from the public and private sector requires computing in US dollars. The entire volume of liquid fuel requires importing while 22% of gas used is now imported as LNG and 60% of the local gas is produced by International Oil Companies operating in Bangladesh. Payments are made in US dollars under the Production Sharing Contracts (PSCs).

Coal is also imported for power generation. Around 2,500MW of electricity is imported from India. The payment for this is also made in dollars. The supply chain is severely stressed by the recent devaluation of the Taka against the US dollar. Experts observed that unless our coal resources exploitation starts, the exploration campaign for petroleum resources is expedited and the contribution of renewable energy is expanded in a planned and well-coordinated manner, the crisis will further intensify and the economy will remain topsy-turvy.

The present installed generation capacity of grid-connected electricity is 27,054MW. The coincident peak demand is 18,000MW. The highest generation during peak hours on 30th April 2024 was recorded at 16,477MW. Even then the deficit on the day was about 2,000MW. During the unprecedented heat waves of the season, up to 3,500MW of power load-shedding has been made. The reason behind this is not a lack of generation capacity, it is a deficit of primary fuel and a crisis created by a substantial amount of outstanding payments to public and private sector power generation companies. Around 5.0 million tonnes of coal must be imported to utilize the generation capacity of coal power plants. However, for running Payra, Rampal, Matarbari, and Bashkhali power plants, each having 1320MW capacity, around 16 million tonnes of coal will be required to import annually. Local production of coal is insignificant. That is not enough even for utilizing the half capacity of the mine-mouth power plant at Barapukuria. Furnace oil is also used for power generation. HFO is imported. The capacity of liquid fuel-based generation is over 5,000MW. The Ministry of Power, Energy and Mineral Resources expected that around 60% of this capacity could be utilized during this summer peak. However, this was not possible due to the inability of the BPDB to pay the outstanding bills.

Production from own gas fields is depleting alarmingly though demand for gas is increasing in geometric progression. The production capacity is now about 2,100 MMCFD. The capacity of two Floating Storage and Regasification Units (FSRUs) anchored off the coast of Moheshkhali is 1,100 MMCFD. When the two are operated in tandem, 1,000-1,050 MMCFD RLNG

Cost Comparison: CBET is Competitive for Base Load

Description	Natural Gas	Nuclear	Coal	LNG (Base)	LNG (Peak)	HFO	Diesel	CBET	Solar
Price	14.75	3000	180	55.74	55.74	80	109	8.77	11.22
Unit	Tk/CM	$/kg	$/Ton	Tk/CM	Tk/CM	Tk/l	Tk/l	Tk/ kWh	Tk/kWh
Calorific Value	1025	3456	6000	1025	1025	37.5	36.13		
Unit	Btu/cft	GJ/kg	kCal/kg	Btu/cft	Btu/cft	MJ/l	MJ/l		
Calorific Value	0.0362	3276	0.0238	0.0362	0.0362	0.036	0.034		
In MMBtu	MMBtu/CM	MMBtu/kg	MMBtu/kg	MMBtu/CM	MMBtu/CM	MMBtu/l	MMBtu/l		
Price (US$/MMBtu)	3.70	0.92	7.56	14.00	14.00	20.46	28.94		
Plant Efficiency (%)	52	33	40	52	36	38	36		
Heat Rate in Btu/kWh	6562	10340	8530	6562	9478	8979	9478		
Fuel Consumption (Per Unit) /	0.18	0.000003	0.36	0.18	0.26	0.25	0.28		
Unit	CM/kWh	kg/kWh	kg/kWh	CM/kWh	CM/kWh	liter/kWh	liter/kWh		
Fuel Cost (Tk) (8*1)	2.67	1.042	7.10	10.11	14.60	20.21	30.17		
Capacity Cost at 80% pf	2.63	7.92	3.9	2.55	5.92	6.66	6.00		
Variable O&M Cost (Tk)	0.17	0.55	0.33	0.17	0.22	0.28	0.28		
Total Cost (11+12) (Tk/kWh)	5.47	9.51	11.33	12.82	20.74	27.15	36.44	8.77	11.22
CO2 Emission (kg/CM-kg-l)	1.908		2.4	1.908	1.908	3.001	2.649		
Unit	kg CO2/CM		kg CO2/ kg	kg CO2/CM	kg CO2/CM	kg CO2/liter	kg CO2/liter		
CO2 Emission (kg CO2/kWh) 0.35			0.86	0.35	0.50	0.76	0.73		

Source: Engr. Mizanur Rahman Presentation can be supplied to the national gas grid. Due to the turbulent state of the sea from cyclone Remal, the supply dropped to 300 MMCFD. For some damage impacted on one of the FSRUs, the supply is now limited to 500 MMCFD.

The proven reserve of natural gas now is less than 10 Tcf. Petrobangla is executing a project for drilling 48 wells. When completed by the end of 2025, it may add 1.0 Tcf of new gas to the reserves. In addition, a plan for drilling 100 new wells, including 69 exploration wells, has been taken up for implementation. This initiative is expected to make a significant contribution when completed by 2030. A fresh PSC bidding round for offshore exploration in the Bay of Bengal has been announced. It will be known in September how many IOCs will be participating in the bidding. Besides, this initiative for updating model PSC for engaging IOCs in the onshore areas has been taken up. Following approval of the updated PSC, the bidding round will be announced.

The deficit of gas supply now is 1,500-2,000 MMCFD. The contribution of imported LNG now is 22%, raising the cost of gas from Tk 10 to Tk 25. The gas price has been significantly increased last year to minimize losses for the gas companies. Yet the government paid Tk 6,500 crore in subsidies for LNG. The requirement of subsidy may further increase next financial year. The energy division informed that gas prices will be further increased to minimize the losses. The import of LNG will gradually increase. The contracts have been concluded with Summit Group and Excelerate for new FSRU and long-tram LNG supply.

Energy for setting up two more FSRUs. The contract for supplying LNG on a long-term basis has also been concluded with them. Negotiation for the import of RLNG through pipelines from India is also advancing with two companies. By 2026 the capacity of LNG import may grow to 2,500 MMMCFD. LNG imports are expected to be doubled by then. The price of gas will also increase significantly. The users will be required to pay higher prices for gas use. If the government does not want to risk the gas price of end users, the subsidy requirement will significantly increase over the next few years.

Failure to take the required political decision for the exploitation of 3.3 billion tonnes of superior quality coal lying at mineable depth remains in suspended animation over the past 20 years. The ruling political party Awami League in its election manifesto in January 2024 pledged to explore coal resources. But it is not clear by now whether that pledge will see the light at the end of the tunnel at long last. Though the coal resource exploitation keeps hanging in the balance five coal power plants have started operation using imported coal. Another plant will start operation this calendar year. The requirement of coal for running all plants at capacity is 20 million tonnes per annum. Overall analysis of the situation evidence that the import of coal, LNG, LPG, and furnace oil will continue increasing progressively. The cost will depend on the price of fuel in the volatile global market and the exchange rate of dollars. In 2015 the contribution of imported fuel in the fuel mix was 24%, now it has grown to 50%. The increase will continue over the next years as well. In 2009 Prof Dr. M Tamim, former special assistant to the chief advisor of the caretaker government, presented an analysis that alerted policymakers that unless the government decides to mine domestic coal and expedite petroleum exploration by 2030 imported fuel contribution to fuel mix may increase to 90%. He also forecasted that it may not be possible for Bangladesh's economy to absorb that stress.

From the data and information EP gathered, the outstanding bills in the power and energy sector now are $5.0 billion. Till February 2024, BPDB owed Tk 33,109 crore to others. The outstanding payments of the public and private sectors are Tk 10,391 crore and Tk 15,000 crore respectively. Bangladesh is importing about 1,400MW of electricity from the Adani Group coal power plant in India. The outstanding payment to them is Tk 5,297 crore. Payra and Rampal power plants have Tk 2,418 crore outstanding payments. BPDB's monthly payment for power from private and public sector suppliers is Tk 6,000 crore on average. For the power supplied in March and April, bills amounting to Tk 12,000 crore have been submitted. Till April, the outstanding payments of BPDB cumulated to Tk 45,019 crore. The earlier part of the outstanding payments of IPPs were met through the issuance of Tk 17,535 crore worth of bonds. The subsidy for the current fiscal year was Tk 35,000 crore. The Ministry of Finance could not pay the full amount of subsidy till now.

The outstanding payment of the energy sector is $1.3 billion. Of them, BPC owes $280 million - $700 million is outstanding for imported coal and $320 million payment is outstanding for imported LNG. MOPEMR has requested the Ministry of Finance to provide 1.0 billion dollars urgently. But their request did not get any response till now.

The government has initiated a three-year implementable plan for making energy and power completely free from subsidy. As part of the plan, the price of oil is being adjusted on the 1st day of every calendar month following an announced formula from March 2024. In the endeavor to make the gas sector free from subsidy, prices are being increased in phases from 2023. But there still exists a deficit. The estimated subsidy for LNG imported for the current fiscal year was Tk 6,500 crores. It is said that it may be increased by another Tk 500 crore in the upcoming national budget. Even then the deficit of gas cannot be mitigated. The total national subsidy in the current year's budget was Tk 1,10,672 crore. A proposal may be given for increasing it to Tk 1,20,585 crore for the financial year 2024-25. The subsidy for the power sector may be increased by Tk 5,000 crore to Tk 40,000 crore for the power sector. However, it may not be possible to clear entire outstanding payments even after increasing the subsidy.

The average cost of generation of power considering all announced tax and VAT now is Tk 12.13 per unit. After the last round of tariff adjustment, the bulk selling price is Tk 7.04 per unit. BPDB loses Tk 5.09 by selling every unit of power. State Minister for Power, Energy and Mineral Resources Nasrul Hamid, MP in a recent statement mentioned that through adjustment of power tariff in small steps three to four times a year, the losses will be narrowed down over the next three years. Of course, BPDB believes that the cost of generation per unit may be reduced by Tk 2 per unit this year. But it does not appear to have come true yet. The reasons for this are adjusting the exchange rate of the Taka to the dollar and increasing tariffs on furnace oil. The energy division informed that the price of gas for power generation will continue to increase. Faisal Karim Khan, President of the Independent Power Producers Association (BIPPA) informed EP that they proposed to reduce import duty and tax applicable for furnace oil from 34% to 22% to NBR. However, it appears that the National Board of Revenue (NBR) perhaps ignored the plea. Rather NBR has taken the initiative to increase the tariff. The tariff of furnace oil now is $265 / tonne. The proposal is there for doubling it. This will increase the cost of furnace oil-based power generation. Some 11-15% of power is now being generated from furnace oil.

Analyzing the available data and information, we find that over the past 22 months, the inflation remains over 9%. The increase in gas price and power tariff contributed 6.25%. Economists and analysts observed that the withdrawal of subsidies from the power and energy sector will hurt inflation. Economists suggested reducing losses through increasing efficiency and governance alongside increasing power tariffs to address the situation.

The power and energy sector has huge outstanding payment obligations now. The crawling peg system which is a way of adjusting the exchange rate of the US dollar on a market basis has been announced. On its basis, the in-a-day taka has been devaluated by 6.36%. Analyzing available data, it appears that between 2021 and 2023, the taka devalued by 28.80%. After the recent adjustment, the devaluation has become 39%. During the post-COVID time, Bangladesh had to absorb a huge price shock triggered by the phenomenal increase in fuel prices. Till now Bangladesh could not get out of the tangle. There is genuine concern that the taka will continue devaluing after the recently announced crawling peg process. Dr. Ahsan H Mansur, Executive Director at the Policy Research Institute, said the exchange rate of the dollar may stabilize at Tk 125 by the end of 2024. He said that with various initiatives taken for expanding the export basket and increasing remittance along with disciplining banking sector operations, the taka may strengthen slowly and steadily.

It has been mentioned above that import now contributes about 50% to the power and energy sector. No efforts are visible to arrest the rising trend. The unplanned increase in power generation capacity has created an all-round crisis for the power sector. Energy security has become vulnerable. Unnecessary capacity charges are now making the cost of generation higher. In consideration of the global context, the subsidy given to the power and energy sector is not that high. Last year the fuel subsidy was US$1.0 trillion. In the budget of the current year, the allocation of subsidy is Tk 41,500 crore. The proposal in the upcoming budget may be increased to Tk 47,000 crore. However, questions are being raised as to how much of the subsidy benefits the end users. There is a popular belief that the majority of the subsidy is being used for the poor planning of the policymakers. Withdrawal of subsidies from the power and energy sector at a time when exchange rate adjustment is in place will intensify inflation. That will make Bangladesh's roadmap to a developed economy through developing economy thorny and slippery. The energy crisis will further intensify if the steady growth of imported fuel dependency is not arrested, and exploration and exploitation of own primary fuel like coal and gas resources are not expedited. EP