Contingency Plans To Confront Crisis

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The global crisis due to natural disasters and geopolitical conflicts has created a multi-dimensional crisis for Bangladesh. Massive inflation has started showing its red eye. Essentials prices have grown into unmanageable propositions, depletion of foreign currency reserves, and fuel supply crisis have adversely affected the operations of industries, especially the export-oriented ones. Business-as-usual actions will continue to impact the operation of industries adversely and consequently deplete export earnings. Some contingency actions like austerity in power and energy, energy efficiency and conservation, and increased contribution of renewable energy providing the initiatives with required incentives must be launched as contingency plans. Bangladesh can neither increase fuel supply from its domestic sources over the short term nor arrange required foreign exchange to buy fuel. Enabling infrastructure for facilitating the import of LNG will also not be ready before the end of 2026. Bangladesh is running into very uncertain energy supply security.

The post-COVID world economy struggled to restore to normalcy. Different governments took different initiatives. Among the main initiatives was absorbing the price shock of primary energy rocketing to sky-high levels. At a time when many countries almost recovered from the economic crises, the outbreak of the Russia - Ukraine war added fuel to the fire. Western embargo on Russian fuel imports impacted most countries. Russia's adopting alternate pathways kept its economy intact. But many countries including Western Europe continued suffering. War, which is a shadow war of superpowers, continues causing damage. In the meantime, Hamas's attack on Israel and consequent avalanche, genocide of Israel in the Gaza peninsula keeps the entire world shocked and awed. Hoti group carrying out surprise attacks on Israel-bound ships and cargoes have made the very imported Red Sea route vulnerable. International trade has started struggling. The crisis of countries relying on imported fuel has compounded. Bangladesh's economy, unaware of the risks and challenges of fuel import from the global market, has started rocking and rolling. Energy generation and supply at affordable cost have become extremely challenging. Achieving sustainable energy security has become highly uncertain.

Bangladesh is now in a multi-dimensional crisis. In the absence of a far-sighted policy and strategy, it preferred going for imported fuel ignoring exploration and utilization of its fuel. Undoubtedly the country achieved admirable GDP growth for smooth supply of its own natural gas and earned the qualification of developing economy from least developed nation. Bangladesh was also among the top MDG achievers. The negligence in exploring and developing domestic fuel resources and, side by side, the exponential growth of demand forced Bangladesh to go for imported primary fuel. In such a scenario global geopolitics making the global fuel market volatile has created unsurmountable challenges for Bangladesh. Achieving SDG, net zero, and the national vision for turning into a developing nation have become extremely challenging.

The 90% dependence on own fuel in 2010 has now grown to almost 50% on imported fuel (coal, LNG, Liquid Fuel, and imported electricity). Bangladesh is

unlike Japan, Korea, China, India, and Pakistan having open seas and coastlines, it requires draft for the anchorage of large ships and LNG carriers.

The sustainable energy efficiency of Bangladesh is now on a critical path. A huge surplus of power generation capacity is rather proving a curse now than a blessing. Despite possessing over 27,000MW of grid-connected power generation capacity including imports from India, the government cannot consistently generate even 15,000MW. On odd days during the peak hours amid the unprecedented heatwaves of April 2024, the generation exceeded 16,000MW. But even on those days about 1000-1500MW supply shortage caused power load-shedding mostly in the Bangladesh Rural Electrification Board's franchise areas. One of the main reasons is the sustainable supply of primary energy, gas, coal, and liquid fuel. The flawed policy of the government has left a huge reserve of discovered superior-quality coal resources remaining buried at mineable depths. Conspicuously, the government did not take the appropriate initiative on time to explore and develop potential petroleum resources onshore frontier and offshore. Knowing the risks, challenges, and constraints of fuel import, the government preferred importing. This is also struggling now for the dollar crisis. The government accounts for huge capacity charges for energy producers. Ironically, despite possessing a huge reserve margin, the power system does not have enough spinning reserves to fall back during the crisis. All State-owned Enterprises BPC, Petrobangla, and BPDB owe huge amounts to their suppliers. A reliable estimate states that the government agencies' cumulative outstanding payments reached US$5.0 billion. These agencies also owe huge outstanding payments to one another. The government has announced that subsidies will be completely withdrawn from the power and energy sector over the next three years. In such a situation, the government still hangs with the controversial Speedy Supply of Power and Energy (Special Provision) (Amendment) Act. The power sector has done admirably well in reducing system loss. But the gas distribution system has huge fugitive emissions of gas or in other words theft and pilferage. Unfortunately, everyone talks about gas theft and pilferage, but the government cannot do enough to limit or eliminate it. It is alleged that the ruling party-supported mafia syndicate obstructs and frustrates the sincere endeavors of the present gas companies and Petrobangla management.

According to a media report, State Minister for Power, Energy and Mineral Resources Nasrul Hamid MP stated that over the past two years, gas companies could reduce system loss from staggering system loss from 22% to 7%. We are aware that in the gas distribution system, there are millions of unauthorized connections. Not only gas is pilfered for domestic use, but also some unscrupulous industrial consumers in connivance with corrupt sector officials and contractors are involved in the unauthorized pilferage of gas. TGDCL in its desperate efforts to eliminate unauthorized disconnected thousands of such users, removed thousands of kilometers of unauthorized pipelines. However, it is alleged that corrupt syndicates having muscles and money restore unauthorized gas use faster than distribution companies' initiatives. Often the officials of gas distribution companies are physically harassed. There are clear provisions in the Gas Act on how to deal with delinquent consumers. However, enforcement of the law often encounters legal complications. The government is sincere and can launch a combing operation to eliminate the unauthorized use of gas. But these are not being done for reasons known to a few and unknown to many. Some observers mention that about 100-150 MMCFD gas can be saved for better alternative use if pilferage could be minimized.

Actions to Curb Gas System Loss

Activities of the Vigilance Teams

The distribution utilities by forming vigilance committees are carrying out regular surprise visits to the industries, commercial organizations, CNG stations, captive power plants, and domestic users. If anomalies are found in any form, the consumers are instantly disconnected. Such operations often require backup by magistrates. There have been many incidents of delinquent consumers attacking vigilance teams and gas company officials. It has become extremely challenging to deal with alleged syndicates involved in the unauthorized use of gas. In many places, 100 km of unauthorized gas distribution lines have been found. Using substandard pipes and fittings, thousands of gas connections have been given. Unsafe use of gas often leads to accidents causing loss of lives and properties. Syndicate never bothers to care and continues their unfair and unsafe gas trade even after repeated disconnections and removal of gas pipelines.

From the TGTDCL annual report 2022-23, it appears that the monitoring of the central vigilance team of the company, mobile courts, and other contingency actions from July 2022 to June 2023 disconnected 44,576 consumers for non-payment of gas bills, 2,82,856 domestic consumers for illegal connections, 168 industries, 232 commercial users, 39 captive power plants and 10 CNG stations. The situation in KGDCL and BGDCL areas is no different. However, the situation in JGTDCL, PGCL, and SGDCL areas is somewhat better as their areas of operations are relatively smaller.

Titas Gas has taken up projects for setting up SCADA, GIS inclusion, and Digital Mapping for leakage identification, repair, and monitoring authorized use of gas in Dhaka Metropolitan City, Narayanganj gas distribution franchise. In many cases, dilapidated old pipelines will also be replaced.

TGTDCL has also initiated a project for the installation of smart prepaid meters for improving gas sector efficiency improvement and carbon abatement.

Carbon Development Mechanism (CDM) Project

A leading Bangladeshi company Prokaushali Sangshad Limited (PSL) in association with five distribution companies TGTDCL, BGDCL, SGDCL, KGDCL, and JGTDCL is carrying out a CDM project (registered with UNFCC) using the technology and financial assistance of the Danish Company NE Climate A/S (NEAS). Under this project following the baseline study of 2017 surveying 5,65,952 domestic and commercial risers, leakages were identified in 35,252. These were repaired and 20.68 MMCFD gas could be saved. The monitoring phase is now identifying whether a new leakage has been developed. If so, these are remedied. Successful execution of the UNFCC project on due verification led to marketing in carbon trade:

Year	Carbon Emission Reduction
2018	33,78,611 CO2 equivalent
2019	34,81722, CO2 equivalent
2020	40,49551, CO2 equivalent
2021	41,37966, CO2 Equivalent

This project will continue till 2027. Titas earned US$ 30,42,231 from NE Climate A/S (NEAS). Titas using the gas saved through this project is earning revenue and at the same time contributing to environment protection through reducing GHG emission.

Like TGTDCL, the other four distribution companies are also benefiting from the project.

Minimizing Losses, Enhancing Efficiency in Gas Supply Chain Management

The proven reserve of natural gas is fast depleting. Following business as usual policy the entire reserves may be depleted by 2031 if not major reserves from onshore frontier areas and offshore is added soon. The present production capacity of domestic gas is 2100 MMCFD, The capacity of two Floating Storage and Regasification Units (FSRU) is 1,100 MMCFD. The FSRUs cannot operate during cyclones and tidal surges. In recent times there have been some operational issues. The total gas supply available in the national gas grid is 3,000-3,100 MMCFD. But the demand is 4,200-4,500 MMCFD. The deficit of about 1,000-1,500 MMCFD has already impacted power generation, operation of industries, and other users. There is no possibility of increasing LNG imports before 2027. Despite the present priority attention in exploration, there is no visible sign of a major increase in gas production before 2030. Though the global LNG market is expected to remain oversupplied, Bangladesh may struggle to find resources to grow exclusive reliance on LNG imports. In such a situation, for the greater national interest, Bangladesh must plan and execute all-out initiatives to minimize losses (theft and pilferages) and enhance efficiency at all segments of the gas- and power-supply chains. In recent times, power distribution utilities have successfully minimized losses. But the gas supply chain from the bottom hole to burner tips causes loss, which is more in gas distribution. Many gas pipelines, constructed in Titas Gas franchise areas in the late 1970s, 1980s, and 1990s, and in erstwhile BGSL (BDGCL and KGDCL), have become dilapidated and badly corroded. Vested mafia syndicates have also caused extensive damage to gas distribution networks. There exist hundreds and thousands of illegal connections, and illegal gas distribution pipelines. Gas distribution companies are huffing and puffing in their endeavor to minimize losses. Experts believe that about 150-200 MMCFD gas can be saved and better used if gas theft can be eliminated.

Distribution companies have initiated actions for digital mapping of buried pipelines, bringing all above-ground gas infrastructure under GIS, setting up SCADA and Telemetry, bringing all consumers under a smart metering system, replacing all aging and dilapidated pipelines, disconnecting all delinquent users (minimizing fugitive emissions of gas). In addition, leakage surveys must also be carried out at surface facilities of all under-operation gas fields and transmission networks. Modern efficient custody transfer meters must be set up at every delivery/receipt point of custody transfer. All such metering facilities must come under SCADA monitoring and control. KGDCL is better designed with HP DRSs and IP DRSs in the network. The meters must be checked, replaced, and brought under the SCADA system. PGCL and SGDCL are new companies. All new distribution pipelines must set up smart sensing facilities for monitoring the operation of buried pipelines. Inside protected premises, MDPE and HDPE pipes and fittings must be used. In the downstream segment, the government must adopt a policy for smart use of gas. Gas supply to domestic consumers and captive generation may be reviewed and, if possible, should be gradually phased out.

Great uncertainty has been created in ensuring sustainable energy for the expected depletion of proven gas resources. The late surge of exploration activities may not bring expected dividends before 2030. Hence austerity in use and enhancing efficiency are the keys. But for these, smart planning and professional execution are essential.

Bangladesh must review energy supply options to reduce stress on depleted gas resources. In addition to reducing and minimizing wastage and pilferage, wherever possible, natural gas must be replaced with alternate fuel. Efficient use of gas has also become essential now. Curbing losses through the elimination of unauthorized gas use has almost become impossible. It must be assessed whether domestic use of gas should be completely phased out. Significant volumes of gas now supplied for captive generation may also be diverted for more value-added use if industries can be subsequently supplied with reliable power from vastly improved power distribution networks. Finally, the contribution of renewable energy – solar, wind, and waste – must be increased through providing essential incentives now provided to other fossil fuels.

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