

Power Puzzle

Mollah Amzad Hossain

Bangladesh's power and energy sector has expanded rapidly over the past two decades, achieving nationwide electricity access and significant generation capacity. However, the expansion has been undermined by chronic fuel shortages, rising import dependence, and financial imbalances. Domestic gas production has declined, coal development remains stalled, and renewable energy contributes only a small share. As a result, electricity generation costs have surged while state utilities face mounting debts. The new government must prioritize restoring financial discipline, boosting domestic energy exploration, expanding LNG infrastructure, and accelerating renewable energy development within its 180-day action plan.



Summit Power International is transforming Bangladesh's infrastructure with innovative solutions across sectors. Backed by global partnerships and foreign investments, we set new standards in development. At Summit, we empower communities and build a stronger, more prosperous future.

Empowering Communities **Sustainable Progress** **Innovation**



www.summitpowerinternational.com

Bangladesh now boasts one of the most extensive power and energy infrastructures in its history, with nearly 100 percent of the population connected to the national grid and large-scale load shedding largely avoided. Yet, beneath this impressive expansion lies a deep structural crisis. Chronic fuel shortages, over-reliance on imports, and inefficient generation systems have left the sector vulnerable, driving costs sky-high and leaving industries struggling for reliable power.

The newly elected government faces a formidable challenge: restoring financial discipline, reducing import dependence, and reviving domestic energy production—all within an ambitious 180-day timeframe. Immediate action is essential not only to stabilize the sector but also to lay the groundwork for sustainable growth in the years ahead.

However, despite the massive expansion of infrastructure over the past 17 years, the goal of providing a planned, reliable, and quality electricity supply has not been fully achieved. As a result, demand for grid electricity in the industrial sector has not increased significantly. Compared with other countries, Bangladesh uses the largest share of electricity in the residential sector, about 57 percent.

The industrial sector still relies heavily on its own captive power generation. Around 17 percent of the country's total gas supply is used for captive power plants in industries. Yet captive generation is far less efficient than grid-based electricity generation.

Meanwhile, gas-based power plants connected to the national grid have a capacity of more than 12,000 MW, but due to gas shortages, even 50 percent of that capacity cannot be utilized. Currently, the demand for gas for grid electricity generation is 2,400 MMCFD, while the maximum supply is only about 1,000 MMCFD. This supply is expected to fall further during the upcoming summer.

After gas, Bangladesh has about 7,000 MW of coal-based power generation capacity. Of this, 525 MW at Barapukuria relies on domestic coal, but even

Gas-based power plants connected to the national grid have a capacity of more than 12,000 MW, but due to gas shortages, even 50 percent of that capacity cannot be utilized. Currently, the demand for gas for grid electricity generation is 2,400 MMCFD, while the maximum supply is only about 1,000 MMCFD. This supply is expected to fall further during the upcoming summer.

there, the full coal demand cannot be met. Moreover, due to insufficient financing for coal imports, coal-fired power plants operated at only about 56 percent plant load factor last year, increasing production costs.

Bangladesh also imports about 2,500 MW of electricity from India and Nepal. Among this, 1,600 MW from Adani's coal-based power plant is more expensive than domestic coal electricity production.

Currently, grid-connected renewable energy capacity is around 1,300 MW, with another 800 MW in the pipeline. Last year, just over 2 percent of total electricity generation came from renewable sources.

On the other hand, the share of liquid fuel-based power generation capacity

is one of the highest in the world, at nearly 30 percent. Diesel-based power plants have remained idle for the past three years, but around 6,000 MW of furnace-oil-based plants are still in operation. Because gas and coal shortages continue, furnace-oil plants must operate not only during peak hours but also during daytime.

During the past 16 years, Bangladesh increased its power generation capacity to about 29,000 MW, but the necessary fuel supply was not ensured. In many cases, power plants were built without guaranteeing fuel supply.

During this period, instead of expanding exploration for domestic energy resources, especially gas, the country pushed production from existing proven gas reserves to the maximum level. Production peaked in 2018, after which it began to decline.

Similarly, while no political decision was taken to explore and extract domestic coal, multiple coal-based power plants were constructed.

Although domestic gas production has been declining by an average of 150 MMCFD per year, effective initiatives for new exploration were not taken. At the same time, infrastructure expansion for importing gas was not planned properly.

As a result, Bangladesh's import dependency for energy rose from 14 percent in 2018 to about 56 percent today, and the trend continues to increase.

Due to the failure to increase domestic energy supply, inadequate expansion of import infrastructure, and difficulties in financing imports, the cost of electricity and gas has tripled over the past few years.

For example, in 2009, the cost of generating electricity per unit was Tk 4.60, which has now risen to Tk 12.10. Yet the Bangladesh Power Development Board (BPDB) sells electricity at Tk 7.05 per unit.

As a result, even after providing about Tk 70,000 crore in subsidies last fiscal

year, the power and energy sector could not be freed from financial losses and unpaid dues.

After Russia invaded Ukraine, the outstanding dues in the country's power and energy sector reached their highest level—about \$6.0 billion.

Before these dues could be fully resolved and stability restored, the Awami League government stepped down amid political unrest. When the interim government assumed responsibility, the sector's outstanding dues stood at around \$4.0 billion.

During its 18-month tenure, the interim government initially reduced the dues to \$1.0 billion, but they began rising again. At present, the total outstanding dues are estimated at around \$5.0 billion.

Therefore, the new government has taken office under significant pressure. It must deal with \$5 billion in outstanding payments, ensure around \$2 billion in monthly funding for energy imports, curb the growth of import dependency, and maintain a stable electricity and fuel supply.

Upon taking office, Power, Energy and Mineral Resources Minister Iqbal Hasan Mahmood correctly stated that he had inherited a sick power and energy sector. Restoring its health is his biggest challenge—especially bringing back financial discipline to the sector.

However, before starting treatment, it is essential to determine why this sector became dysfunctional.

Before discussing that issue, it is necessary to review the historical evolution of Bangladesh's energy sector.

Evolution of the Energy Sector

After independence, Bangladesh began its journey toward energy security and economic development by prioritizing the exploration, extraction, and use of domestic energy resources.

This journey started under Bangabandhu Sheikh Mujibur Rahman.

After independence, Bangladesh began its journey toward energy security and economic development by prioritizing the exploration, extraction, and use of domestic energy resources.

During that period, when global energy markets were shaken by the Arab-Israeli war and the oil crisis, Bangladesh took initiatives to explore oil in the Bay of Bengal and to explore and utilize domestic coal resources.

Under the leadership of Ziaur Rahman, founder of the BNP and former president, the emphasis on domestic energy resources for energy security continued until around 1980. Through his special initiatives, oil and gas exploration in the country's onshore areas, particularly in the northern region, gained new momentum.

However, over time, Bangladesh failed to maintain this focus on developing and utilizing its domestic energy resources.

After General Hussain Muhammad Ershad assumed power in 1982, the pace of domestic energy exploration slowed significantly. Although the power and energy sector expanded somewhat during his long rule, corruption and lack of transparency increased sharply.

Toward the end of his rule, there were even incidents where unknown foreign companies were brought in

and awarded oil and gas exploration contracts.

During that period, the system loss in the country's electricity sector rose to nearly 50 percent.

After the fall of the Ershad regime through a mass uprising, the Bangladesh Nationalist Party (BNP) won the national election and formed the government. The party's chairperson, the late Begum Khaleda Zia, assumed office as Prime Minister. A new chapter began in Bangladesh's power and energy sector.

Before 1991, most investments in the country's power and energy sector—particularly in building power plants and exploring gas—came in the form of loans from multilateral donors. However, during Khaleda Zia's government, donors gradually became reluctant to provide loans for the power and energy sector, attaching various conditions to their financing.

As a result, the government was compelled to initiate several reforms in the sector. At the same time, the power and energy sector continued to expand.

To attract foreign investment in oil and gas exploration, Production Sharing Contracts (PSCs) were signed in 1993. Under these agreements, Occidental Petroleum began exploration in three onshore blocks—Blocks 12, 13, and 14. In the Bay of Bengal, Cairn Energy started offshore exploration.

These initiatives eventually led to the discovery of the Sangu gas field in the 1990s. During this period, the Jalalabad gas field was developed, and the Bibiyana and Moulvibazar gas fields were discovered.

At the same time, with Chinese assistance, development work began on the Barapukuria coal mine. As a result of these earlier exploration efforts, the three onshore blocks still supply around 1,000 MMCFD of gas today.

During this period, the government also finalized the draft Independent Power Producer (IPP) Policy to increase electricity generation.

The Awami League Government (1996)

In the 1996 election, the Awami League won power, and Sheikh Hasina became Prime Minister.

At the beginning of her tenure, the government approved the IPP policy that had been drafted during the BNP government and gave the highest priority to establishing private-sector power plants. This was necessary because the country's electricity generation capacity at that time was far below demand.

The government also moved forward with coal development and gas exploration projects that had been

returned to power after winning the national election. Begum Khaleda Zia again assumed office as Prime Minister.

During the previous decade, a coordinated approach to the development of the power and energy sector had begun to emerge. Even after the change of government, the implementation of many ongoing projects continued.

However, from 2001 onward, a different policy direction emerged. Several power generation projects approved during the previous government were cancelled.

Instead, the government began working on the concept of Public-Private

leader Sheikh Hasina also opposed the coal mining project.

Consequently, the five-year tenure of the BNP-Jamaat coalition government ended without any breakthroughs in the power and energy sector.

Caretaker Government (2007)

Amid political unrest and growing demands for a caretaker government, a military-backed caretaker administration assumed power in 2007.

Bangladesh's politics entered a turbulent phase. Former Prime Ministers Khaleda Zia and Sheikh Hasina were both imprisoned. The current Prime Minister, Tarique Rahman, was also jailed and later forced into exile after his release.

Rapid Expansion After 2009

Between 2001 and 2024, Bangladesh's power and energy sector experienced massive expansion. Electricity generation capacity increased significantly and is now much higher than demand in many cases.

However, fuel supply did not keep pace with the expansion of power generation capacity.

After forming the government in 2009, the Awami League introduced a special law to accelerate the implementation of power and energy projects. This law was extended multiple times and later repealed by the interim government.

Using this law, the government implemented numerous power generation projects. However, similar efforts were not made to ensure a sufficient fuel supply. As a result, a structural imbalance emerged between the power and energy sectors.

During the 16 years of Awami League rule, energy experts repeatedly called for the repeal of the special law and the restoration of a competitive procurement environment. They also recommended: Increasing exploration of domestic gas and coal resources and giving priority to renewable energy projects.

At the same time, the government introduced the Small Power Producer (SPP) Policy to encourage domestic private investment in electricity generation. However, these initiatives did not achieve much success.

finalized during the BNP administration.

In 1997, new bidding rounds were launched to bring international oil companies (IOCs) into both onshore and offshore exploration. However, due to various complications, these new PSC agreements did not produce significant results.

During this period, the Phulbari coal deposit was discovered through exploration conducted by the Australian company BHP. When the company decided to leave Bangladesh, the contract was transferred to Asia Energy.

Although electricity generation and gas development progressed during this period, coal extraction did not move forward. However, several projects for both private and public power plants were finalized under the IPP policy.

BNP-Jamaat Coalition Government (2001)

In 2001, the BNP-Jamaat coalition

Partnership (PPP) to increase electricity generation. Although there was an initiative to build a 450 MW power plant under PPP, the project was never realized.

At the same time, the government introduced the Small Power Producer (SPP) Policy to encourage domestic private investment in electricity generation. However, these initiatives did not achieve much success.

Another major issue during this period was the controversy over gas exports. Because of this debate, civil society groups strongly opposed foreign investment in gas exploration. As a result, oil and gas exploration activities slowed significantly.

During the BNP government, Asia Energy submitted a Scheme of Development for the Phulbari coal mine project. However, due to strong protests from civil society groups, the project could not proceed. At that time, opposition

However, these recommendations were largely ignored. Instead, the power and energy sector became increasingly import-dependent.

The absence of competition also created an environment where the lack of transparency, irregularities, and corruption increased.

Although several strategic plans existed for the sector's development, many projects were implemented without proper financial consideration, leading to widespread financial disorder in the sector.

At the same time, many power projects

Power and Energy Nasrul Hamid, the government paid Tk 115,000 crore in capacity charges to power plants over 15 years.

Energy expert Professor M. Tamim, Vice Chancellor of Independent University, Bangladesh, stated that at least Tk 40,000 crore of these capacity payments were unnecessary.

According to the National White Paper Committee report published during the tenure of the interim government, significant irregularities were identified in Bangladesh's power and energy sector.

The report stated that at least 10

contracts and suggested reviewing or cancelling those agreements.

However, many observers have expressed disappointment that the interim government did not take concrete action against corruption that occurred during the Awami League era.

Speaking to Energy & Power, Humayun Rashid, President of the Philippines-Bangladesh Chamber of Commerce and Industries and CEO of Energypac, said that holding those responsible for corruption accountable is essential for building a competitive energy sector.

Policy Failures in the Past 16 Years

One of the biggest failures of the Awami League government's 16-year tenure was that while numerous power plants were constructed, an adequate fuel supply was not ensured.

As a result, import dependence increased sharply, while gas shortages continued to grow despite rising demand.

Although the government initiated some oil and gas exploration activities in 2020, these efforts were not well planned. At the same time, no decision was taken to develop domestic coal resources, which remains a major policy failure of the period.

Toward the end of its tenure, the government finalized 37 renewable energy projects with a combined capacity of 5,000 MW and issued Letters of Intent (LOIs) for them. However, the interim government later cancelled these projects, slowing the momentum of renewable energy development.

Similarly, the cancellation of agreements and negotiations for LNG import infrastructure has prolonged the country's gas supply crisis.

Challenges for the New Government and the 180-Day Priorities

Following its victory in the national election, the Bangladesh Nationalist Party (BNP) has formed the new government, with Tarique Rahman assuming office as Prime Minister.

One of the biggest failures of the Awami League government's 16-year tenure was that while numerous power plants were constructed, an adequate fuel supply was not ensured.

were implemented under the Public-Private Partnership (PPP) framework initiated during the BNP era.

Review of the 16-Year Power and Energy Sector

After the fall of the Awami League government following the student-led mass movement, investigations and evaluations of its 16-year record in the energy sector began.

While capacity payments are an essential condition for attracting private investment in power generation, the excessive number of power plants built without ensuring fuel supply has created a major financial burden on the power sector.

According to information presented in parliament by former State Minister for

percent of financial corruption occurred in the implementation of projects in the sector. It also noted that several power plants were built that never produced more than 5 percent of their installed capacity.

Although the report recommended identifying those responsible for corruption and taking action against them, no effective measures were implemented during the 18-month tenure of the interim government.

Meanwhile, the government formed a separate review committee to examine the sector. In its report submitted in January, the committee stated that power plants were receiving tariffs 30-40 percent higher than necessary and recommended revising them downward. The report also highlighted serious irregularities in import

After taking office, he instructed the government to prepare a 180-day action plan. Accordingly, each ministry has begun drafting its own implementation roadmap.

The Ministry of Power, Energy and Mineral Resources is currently finalizing its action plan based on the BNP's election manifesto.

The Energy Minister has already stated that restoring financial discipline in the sector is the government's top priority. However, achieving this will not be easy.

According to Humayun Rashid, the government must first identify the root causes of the sector's financial disorder before implementing corrective measures.

He suggested that the government should develop a six-month plan to clear outstanding dues, while ensuring that new arrears do not accumulate. This will require controlling unnecessary expenditures and ensuring efficient use of energy resources, which could gradually reduce electricity generation costs and fuel supply expenses.

Institutional Reforms

Sector experts believe that the government must urgently reform the management and leadership of all institutions in the power and energy sector.

Competent professionals should be selected based on merit rather than political considerations, particularly in the management of state-owned companies.

Reducing Import Dependence

Reducing energy imports is another urgent priority for the government. Currently, more than 56 percent of Bangladesh's energy supply depends on imports.

Former BUET Dean Professor Dr. Ijaz Hossain believes that while reforms will take time to produce results, immediate action is essential.

He recommends that the draft Production Sharing Contract (PSC) currently under review by the ministry

should be finalized within the 180-day action plan, followed by international bidding for oil and gas exploration projects.

In addition, the ongoing 50-well and 100-well drilling programs, financed with domestic resources, should be reviewed to ensure completion by 2028.

According to projections by Petrobangla, successful implementation could add 1,200–1,300 MMCFD of new gas to the national grid, potentially maintaining domestic production at around 1,800 MMCFD by 2028.

Increasing Gas Production

Energy expert Professor Dr. M. Tamim believes the government must urgently increase domestic gas production.

He noted that national gas fields hold reserves exceeding 4 TCF, yet currently supply only 700–750 MMCFD of gas. In contrast, fields operated by international oil companies (IOCs) have reserves of just over 1 TCF, yet they supply about 1,000 MMCFD.

Therefore, he recommends that the government appoint international consultants to conduct a comprehensive study. With proper planning, results could be achieved within 12–18 months.

Developing the Chhatak Gas Field

Former BAPEX Managing Director Murtaza Ahmed Faruque suggested that the government should immediately undertake a project to develop the Chhatak gas field.

He recommended conducting a workover within six months, along with a 3D seismic survey to prepare for drilling three to four additional exploration wells.

According to estimates, the field could contain more than 1 TCF of additional reserves, which could begin supplying gas within two years.

New PSC Bidding

Experts also recommend finalizing a new PSC framework within the next

month and launching bidding rounds for exploration in both onshore and offshore areas.

For onshore exploration, priority should be given to the Chittagong Hill Tracts and western Bangladesh.

If the government launches bidding within 180 days, new PSC agreements could be signed within the year. Exploration activities could begin next year, potentially yielding results within three years.

Integrating Bhola Gas into the National Grid

Connecting Bhola's gas reserves to the national grid is considered essential for addressing the gas shortage.

Experts estimate that at least 2 TCF of gas reserves exist in Bhola, and ongoing exploration may increase this figure.

The government should invite tenders within the next three months to connect Bhola to the national gas grid. If the project begins this year, gas from Bhola could be supplied to the grid by 2029.

Expanding LNG Infrastructure

Energy expert Khandakar Abdus Saleque Sufi believes that while domestic gas exploration is important, expanding LNG import infrastructure is also essential to address supply shortages.

He noted that the interim government cancelled the contract for the third FSRU (Floating Storage and Regasification Unit) and terminated negotiations for three additional LNG projects, which have created new supply challenges.

Although the government initiated a fourth FSRU project, no significant progress has been made. Meanwhile, the project for a land-based LNG terminal, structured under PPP, has also been delayed.

He recommends that the new government review the cancelled contracts and negotiations within the 180-day priority plan, which could increase LNG import capacity by 2028.

At the same time, the government should accelerate efforts to select investors for land-based LNG terminals by 2030.

In addition, he emphasized the importance of starting construction of the Maheshkhali–Dhaka gas pipeline to ensure the transport of re-gasified LNG (RLNG).

Decision on Domestic Coal

Finally, experts emphasize that the government must make a clear decision regarding the exploration, extraction, and use of domestic coal resources. Domestic coal could play a significant role in reducing import dependence.

Mining engineer and energy expert Dr. Mushfiqur Rahman told Energy & Power that although attracting investment in coal projects has become more challenging in the current global context, it is not impossible.

However, he stressed that the government must first decide whether Bangladesh intends to develop its coal resources. If not, the government should clearly communicate this decision as soon as possible.

RE Expansion

Experts believe that the rapid expansion of renewable energy should be another major priority for the government in order to reduce import dependence.

They suggest that within the 180-day action plan, the government should adopt short, medium-, and long-term strategies for renewable energy expansion. At the same time, initiatives must be taken to expand both grid-scale solar projects and rooftop solar systems.

Analysts say that by following the examples of India and Pakistan, Bangladesh could add around 1,000 MW of electricity capacity from rooftop solar within one year.

Similarly, if the government prepares land and transmission evacuation facilities for grid-scale solar projects and allocates them through competitive

In particular, there is no alternative to ensuring private sector investment in oil and gas exploration and renewable energy development.

auctions, it would likely attract investment at very low prices. Through such initiatives, Bangladesh could add 3,000–5,000 MW of solar capacity within three years.

When asked about this issue, Shafiqul Alam, Bangladesh Lead Energy Analyst at the Institute for Energy Economics and Financial Analysis (IEEFA), said that significant progress could be achieved quickly if a realistic implementation plan is adopted.

According to him, solar power could gradually replace furnace oil-based electricity generation, which would reduce imports and help lower the cost of electricity production.

However, he also emphasized that alongside renewable energy expansion, urgent steps must be taken to improve energy efficiency and conservation.

Managing Excess Generation Capacity

Experts also believe that excess generation capacity compared to actual demand has become a major challenge for Bangladesh's power sector.

As a result, the government should aim to reduce dependence on liquid fuel-based power plants to zero by 2030.

At the same time, ensuring maximum utilization of coal-based power plants could help reduce electricity production costs.

Restoring Investor Confidence

Perhaps the biggest challenge for the current government is restoring investor confidence.

Due to the lack of competition in the sector over the past 16 years, investor confidence in oil and gas exploration in Bangladesh has weakened. Moreover, the cancellation of contracts with companies that had already shown interest in investing created additional uncertainty during the interim government period.

The fact that offshore bidding rounds received no proposals and that renewable energy projects failed to attract foreign investment under revised policies demonstrates this problem.

However, attracting investment is essential for overcoming the current energy crisis.

Since the newly elected government took office, a more positive sentiment has emerged among investors. But turning this optimism into actual investment will require creating a credible and stable investment environment.

In particular, there is no alternative to ensuring private sector investment in oil and gas exploration and renewable energy development.

Conclusion

The Ministry of Power, Energy, and Mineral Resources is finalizing its 180-day action plan, expected to be announced after Eid. Restoring financial discipline, reducing costs, securing fuel supply, and improving governance are at the forefront.

Experts emphasize that immediate measures to stop gas losses, control expenditures, and consult civil society and business leaders are critical. Broad political consensus will be essential for the plan's success.

If implemented effectively, this 180-day roadmap could transform Bangladesh's power and energy sector into a transparent, sustainable, and people-focused system. **EP**