Sustainable Energy Transition in Bangladesh

Opportunities and Challenges

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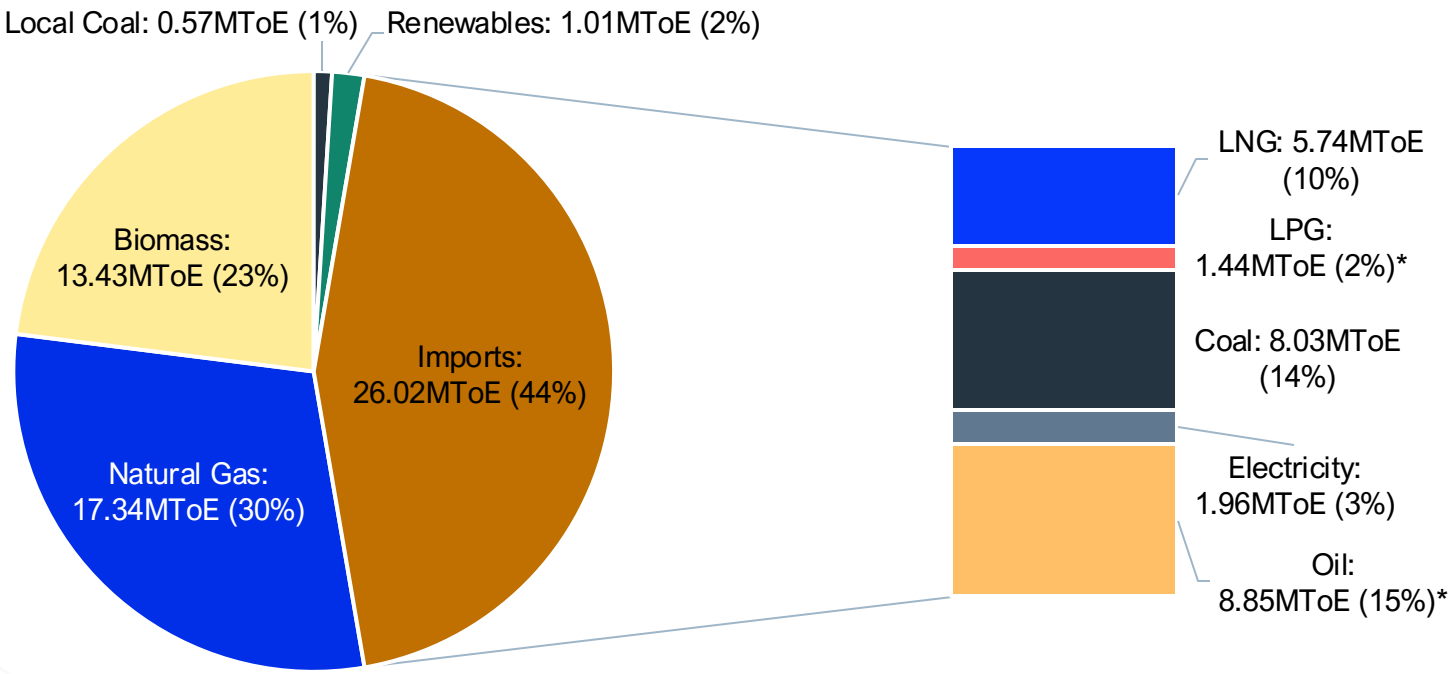
Bangladesh's Primary Energy Sources, FY 2023-24

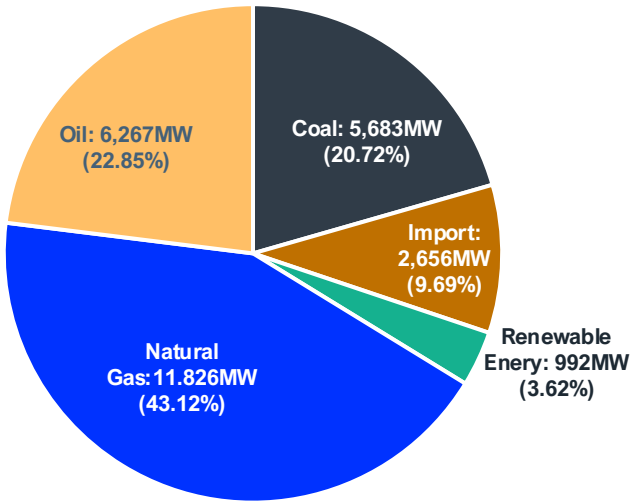


*Source: HCU; * Most of the LPG and oil are imported*

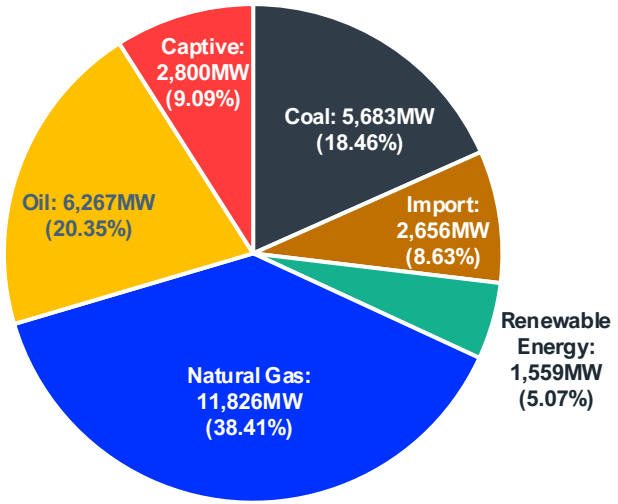
While the high dependence on imported fossil fuels is a big challenge, it is an opportunity for Bangladesh to make a transition to sustainable energy!!

Energy Mix in Bangladesh's Power Generation

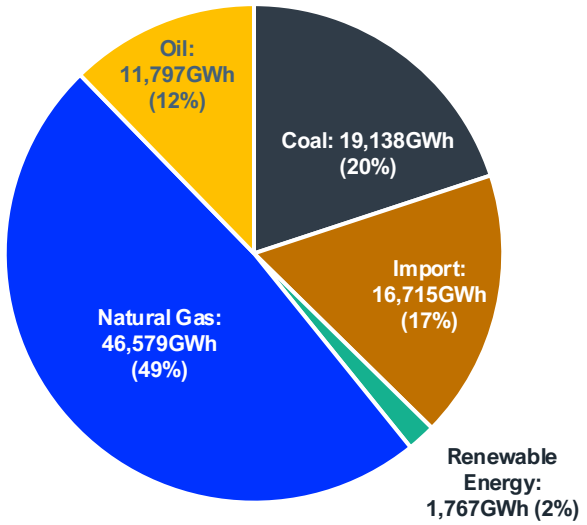
Fuel mix in Installed Capacity (excluding off-grid systems), April 2025



Fuel mix in Installed Capacity (including off-grid systems), April 2025



Fuel mix in Generation, FY 2023-24

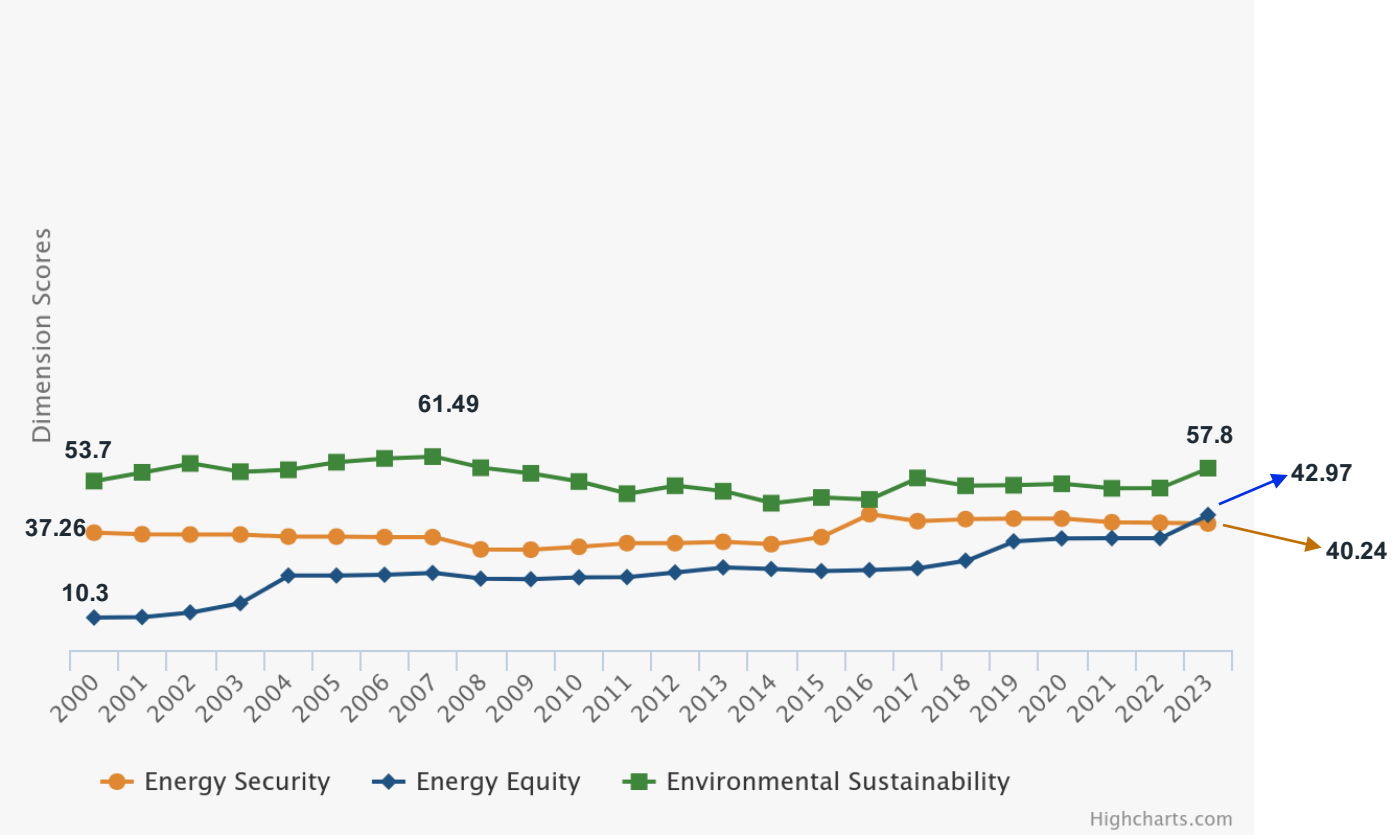


Source: BPDB; SREDA; IEEFA's Analysis;

Bangladesh relies on imports for more than 60% of its electricity

Bangladesh's Energy Trilemma

Energy Trilemma Score



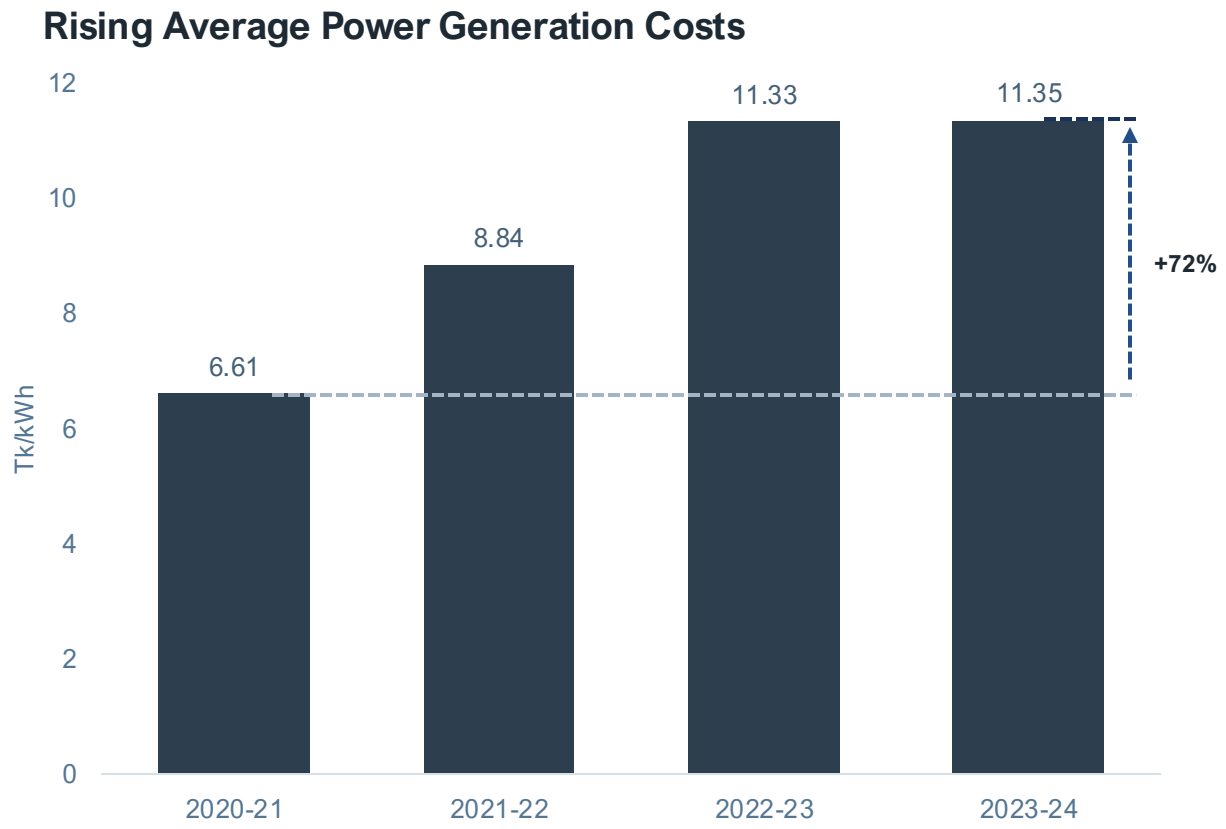
Source: WEC 2024;

The World Energy Council's **Energy Trilemma Index** measures a country's energy situation based on energy security, equity and environmental sustainability;

The 2023 energy trilemma index placed Bangladesh at **83rd place** among 99 countries considered for evaluation.

Source: World Energy Council

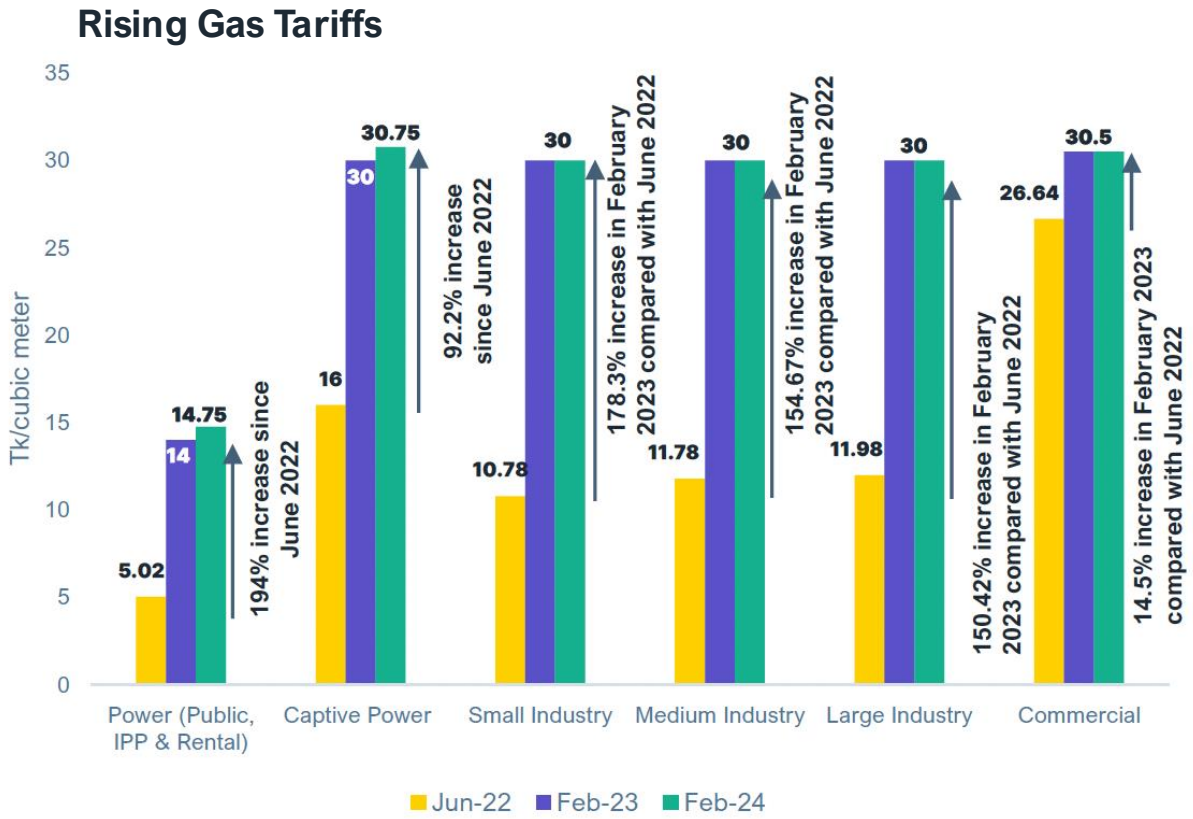
Bangladesh's Energy Trilemma – Rising Power Generation Cost



Source: BPDB; IEEFA's Analysis;

Average power generation cost might have crossed Tk12/kWh by the end of FY2024-25

Bangladesh's Energy Trilemma – Rising Energy Tariffs

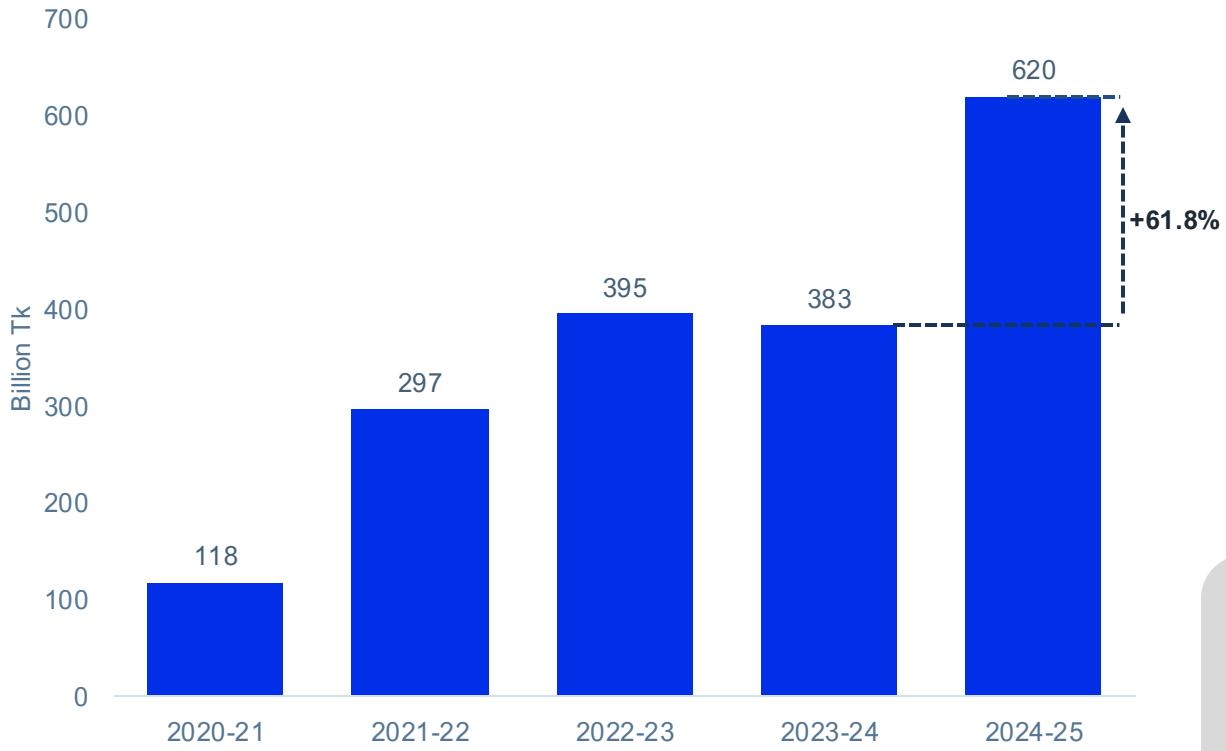


Source: MPEMR; IEEFA's Analysis; **** New industries will pay Tk40/cubic meter for their industrial processes; likewise, they will pay Tk 42/cubic meter for captive power generation***

Bangladesh also increased power tariffs thrice in 2023 and twice in 2024;

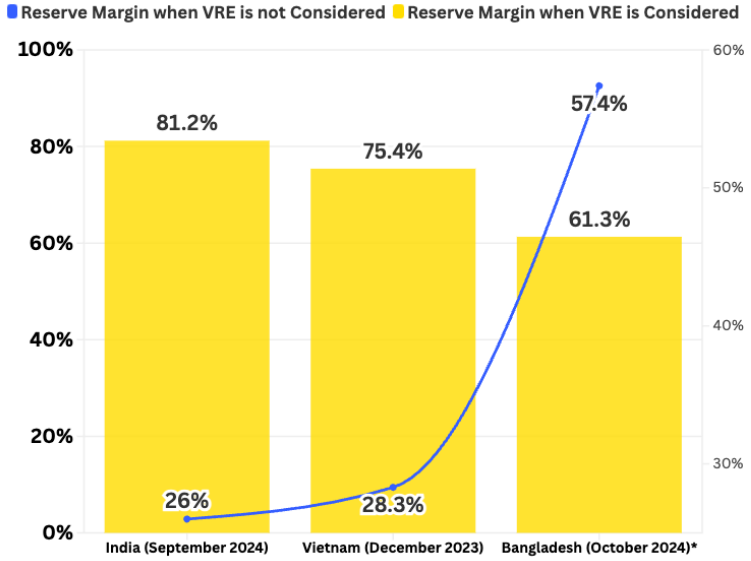
Bangladesh's Energy Trilemma – Subsidy Burden

Hefty Subsidy Allocation to the Power Sector



Source: BPDB; IEEFA's Analysis;

Bangladesh's Power Sector Has a High Reserve Margin

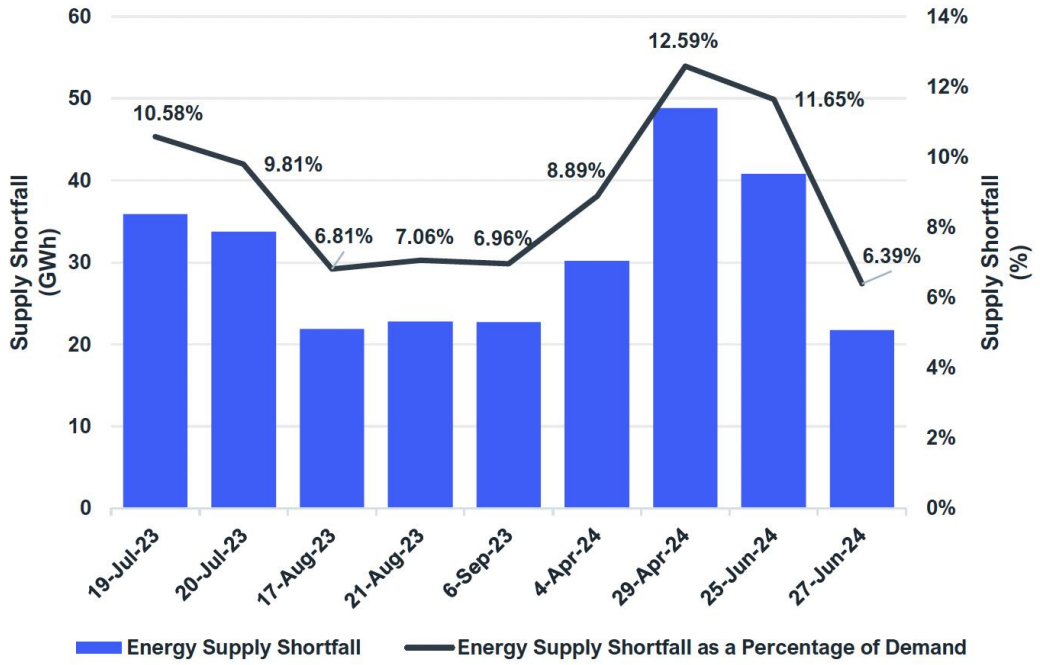


Subsidy allocation for FY2025-26:
Power sector - Tk370 billion (the government may need to revise it later); LNG – Tk90 billion

Source: Bangladesh' Budget for FY2025-26

Bangladesh's Difficulty in Addressing Energy Trilemma – Loadshedding Persists

Unserved Demand of Selected Days, FY2023-24



Load Shedding Frequency, FY2023-24

Source: IEEFA's study 'Fixing Bangladesh's Power Sector', December 2024; ***While the government has reduced loadshedding in FY2024-25, there is suppressed power demand;***

Opportunities for Sustainable Energy Transition – Renewable Energy

- Even without storage, renewable energy can replace oil-fired peaking plants during the day; As battery storage is becoming increasingly competitive, renewable energy with storage can reduce costly oil-fired power at night too;
- Rooftop solar is low-hanging fruit for industries; Industries with GHG mitigation goals may consider rooftop solar with batteries;
- Given that the Bangladesh Government recently reduced the customs duty for inverters from 10% to 1%, rooftop solar will be more profitable;
- Solar energy provides a huge opportunity to transform the diesel-run irrigation sector;

Opportunities for Sustainable Energy Transition – Renewable Energy

- 2,000MW rooftop solar capacity may save BPDB up to US$1 billion per annum;
- Renewable energy can significantly reduce average power generation costs and thus help minimise the power sector's subsidy burden;
- Transformation of the irrigation sector may save more than half a billion US$ in diesel imports;

Opportunities for Sustainable Energy Transition – Energy Efficiency

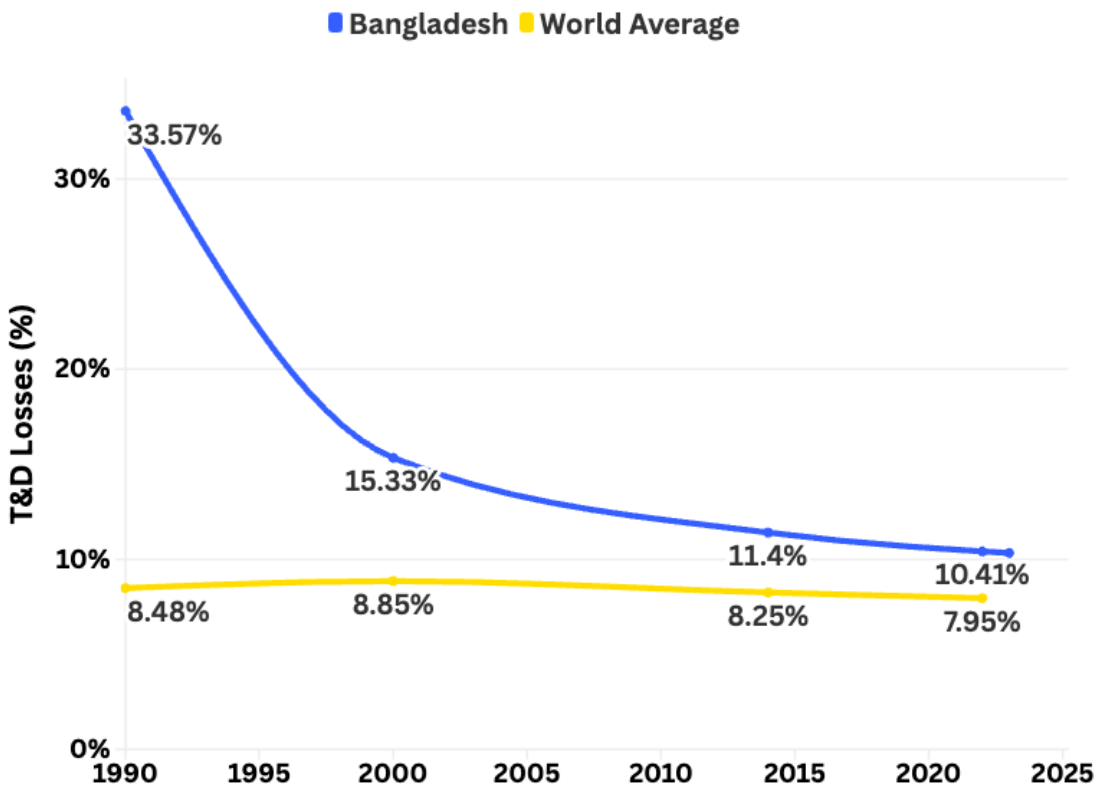
- Energy efficiency opportunities in industrial production processes;
- Untapped energy efficiency potential in industrial captive power generation;
- Reduction in the power and gas sectors' transmission and distribution losses;
- Unexplored energy efficiency in residential and commercial buildings;

Greater energy efficiency in gas-fired captive power generation and productive use of waste heat can reduce LNG imports by 50.18Bcf and save Bangladesh US$460 million a year.

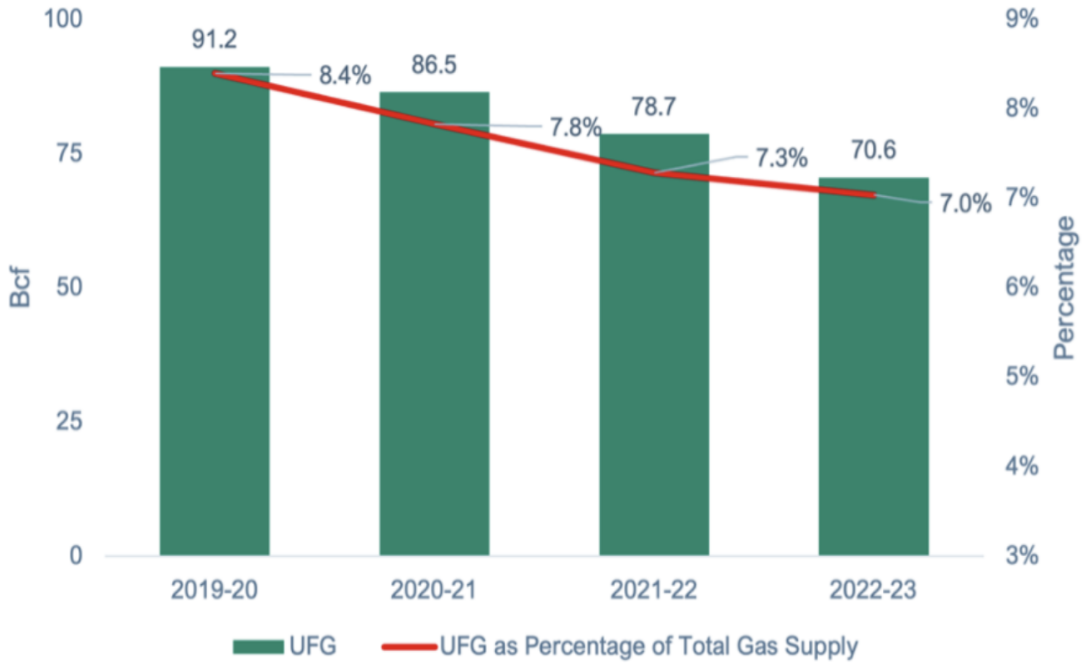
Source: IEEFA's Study 'Industrial Energy Efficiency to Curb Bangladesh's Short-term LNG Demand Growth';

Opportunities for Sustainable Energy Transition – Energy Efficiency

Comparison of Power Sector's T&D losses



Gas Sector's T&D losses



Sources: IEEFA's study 'Fixing Bangladesh's Power Sector'; IEEFA's insight 'Bangladesh's Interim Government should Prioritise Energy Sector Issues';

Opportunities for Sustainable Energy Transition – Energy Efficiency

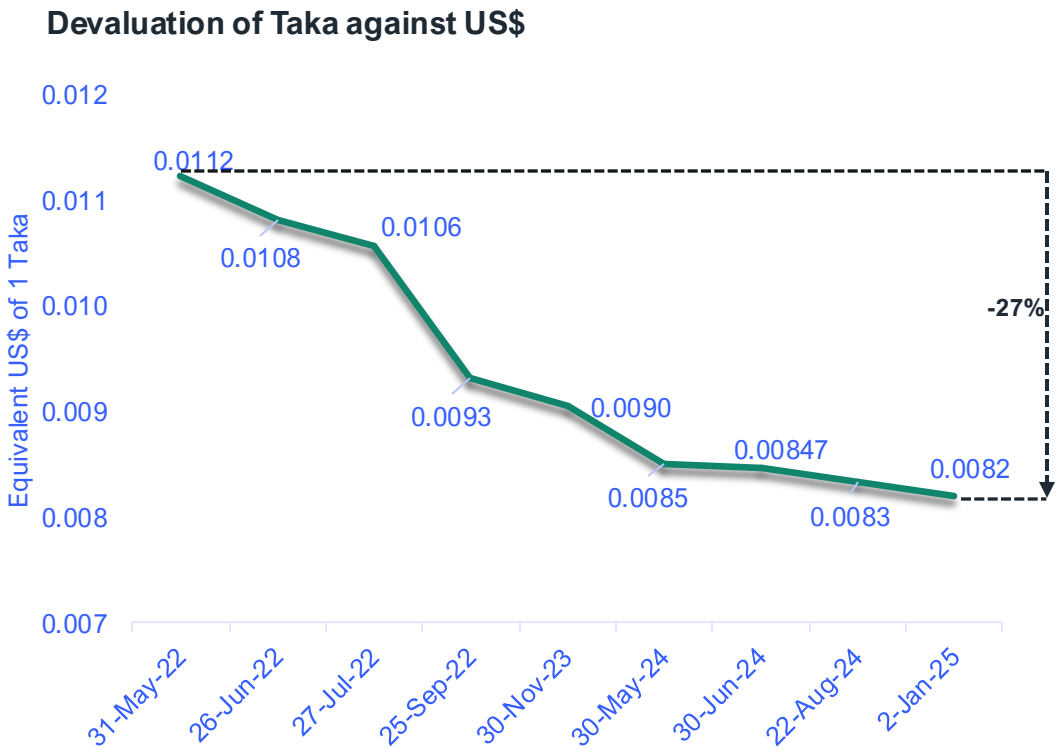
- **Policy Risks**: Abrupt policy changes in the renewable energy project contracting process from unsolicited to competitive bidding affected the investors' confidence in the utility-scale renewable energy projects; Foreign investors have not shown any interest in recent tenders;
- **Land Constraints**: A lack of land resource mapping affects the utility-scale renewable energy expansion;
- **Limited Motivation of Industries**: This affects both rooftop solar and energy efficiency project implementation in industries;
- **Downgraded Credit Ratings**: The country's credit ratings downgraded from B1 to B2 may raise the borrowing cost in foreign currency;

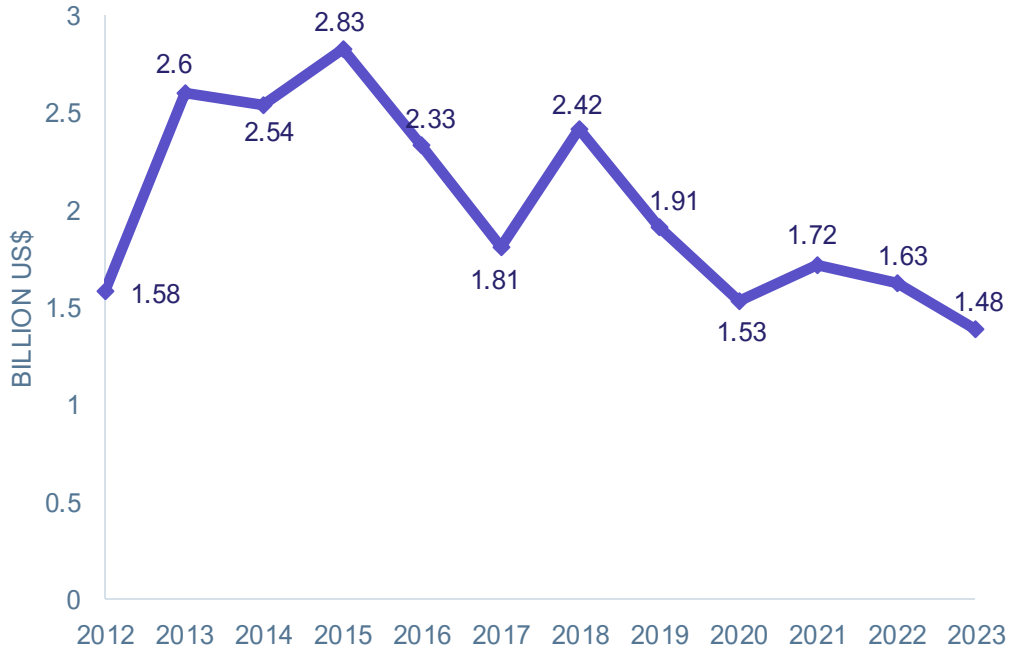
- IEEFA's estimates show that Bangladesh may require up to **US$980 million** per annum between July 2025 and December 2030 to achieve the renewable energy goal (20%) as per the new Renewable Energy Policy.

- Post-2030, Bangladesh may need up to **US$1.46 billion** per annum to attain the 2040 renewable energy target (30%).

- Additional finance will be needed for energy efficiency;

Challenges in the Energy Transition

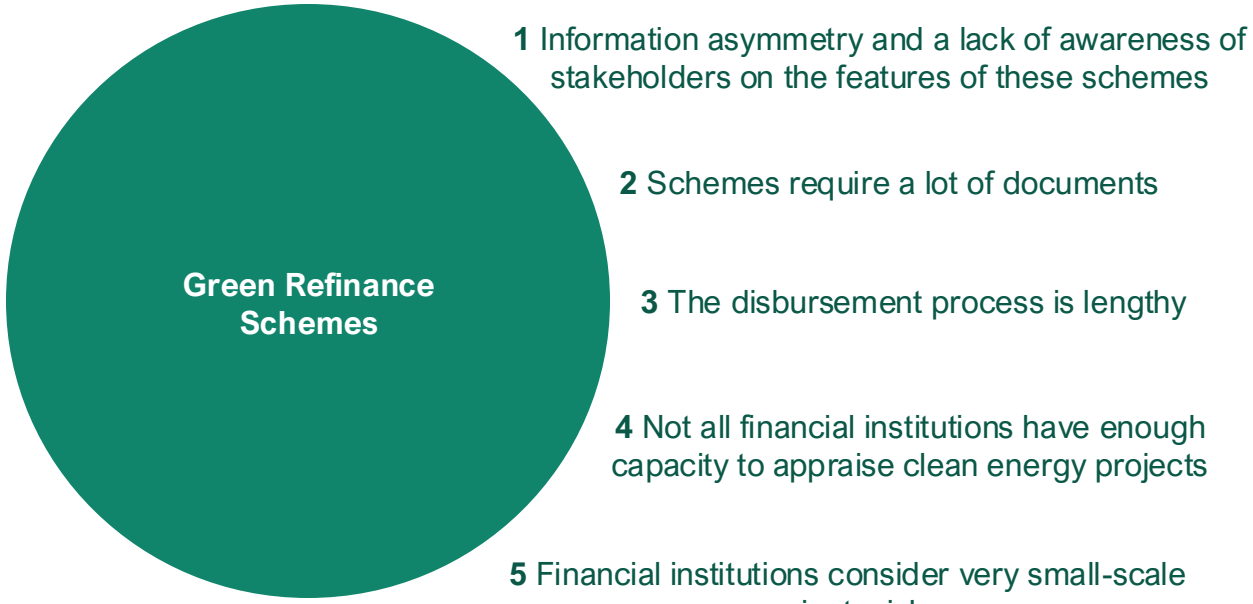




Source: IEEFA's Study 'Ctalalysing Renewable Energy Finance in Bangladesh';

Challenges in the Energy Transition

Difficulty in Accessing Green Refinancing Schemes



Source: IEEFA's Analysis;

Concluding Remarks

- ✓ Bangladesh is at a fundamental disadvantage as it heavily relies on imported fossil fuels. Therefore, renewable energy and energy efficiency could provide the country a significant relief;
- ✓ A coordinated approach is necessary with proper monitoring to expedite both renewable energy and energy efficiency in the country;
- ✓ Policy certainty will be key to attracting large-scale investment from local private sector and foreign companies in the clean energy sector;
- ✓ Bangladesh should explore long-term and low-cost financing facilities;
- ✓ The country should take measures to address the risks associated with currency depreciation;
- ✓ Capacity development of key stakeholders, including financial institutions and project implementers, is essential;
- ✓ Bangladesh must prepare for the long-term sustainable energy transition, which would necessitate the engagement of today's youth in policy formulation, project implementation and monitoring.

Thank you!

Contact

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