

# Bangladesh Power Development Board Financial Results FY2020-21

## *Growing Independent Power Plant Costs Threaten to Overwhelm Power System*

### Executive Summary

The burden of capacity over-expansion based on imported fossil fuels threatens to overwhelm the financial status of the Bangladesh Power Development Board (BPDB). Significant and economically damaging power tariff growth looks increasingly likely.

In January 2022, the BPDB proposed a bulk power tariff increase of up to 64% to the Bangladesh Energy Regulatory Commission (BERC) due to the increasing cost of power generation and purchase based on imported coal, liquefied natural gas (LNG) and oil. The BPDB is reportedly maintaining that it will have a Tk325 billion (US\$3.8 billion) shortfall if tariffs are not raised as proposed.

Whatever the outcome of these proposals, this won't be the last time tariffs come under pressure to rise significantly. The BPDB's financial status is being eroded by overcapacity, rising capacity payments – which reportedly increased again to Tk132 billion (US\$1.5 billion) in FY2020-21 – and growing reliance on price-volatile imported fossil fuels. On the current trajectory, it can be expected that the BPDB's operating losses will continue to grow, necessitating further government subsidies and tariff increases.

**The BPDB's financial  
status is being eroded.**

BPDB's operating loss doubled in FY2020-21, driven by a very significant rise in the cost of electricity purchases from independent power plants (IPPs), which rose 58% over the prior year. The result of BPDB's very large operating loss was that the necessary government subsidy to bail out BPDB's losses reached a record Tk117.8 billion (US\$1.4 billion), up from Tk74.4 billion in the prior year.

For the first time, the cost of electricity purchased from IPPs now represents more than 50% of BPDB's total operating expenses. The single largest contributor to the IPP burden was the new Payra coal-fired power plant. The cost of each unit of power purchased from the plant increased in FY2020-21, reaching Tk8.6/kWh – a 36.5% increase from the prior year figure of Tk6.3/kWh. This was driven by capacity payments made to the plant as one of its units stands idle due to a delay in

construction of power transmission infrastructure. The BPDB is paying Tk1.3 billion (US\$15 million) a month in capacity charges to the Payra power station.

With more large coal IPPs under construction and large capacities of LNG-fired IPPs planned, the BPDB's IPP cost likely will continue to increase significantly.

According to the BPDB's FY2020-21 annual report, 12,967 megawatts (MW) of new power capacity is under construction and 19,651MW is planned to be added by the end of FY2024-25. Over the same period, only 3,990MW of old capacity is planned to be retired, according to the BPDB.

Approaching power additions include 600MW of further oil-fired power plants, the 2,400MW Rooppur nuclear plant, the much-delayed Rampal coal plant and the significantly over-budget and over-schedule Matarbari 1 coal plant. In addition, Adani Power's Godda coal power project in Jharkhand, India, which will export power to Bangladesh, is due for commissioning in 2022 according to the BPDB.

There is also significant capacity of LNG-fired power due to come online by 2025 and much more planned to follow, increasing Bangladesh's exposure to the volatile LNG market. LNG prices soared to record highs in 2021, surging past US\$50/MMBtu. Bangladesh was subsequently forced to pay record spot LNG prices, highlighting the risk in the country becoming increasingly reliant on the imported fuel. This has resulted in gas distributors proposing a more-than-doubling of tariffs to BERC.

### **LNG prices soared to record highs in 2021.**

The result of these large capacity additions in excess of likely power generation growth will be that overall power plant utilisation will drop further by FY2024-25. Even if power generation grows at a very high 12% per annum out to FY2024-25, overall power capacity utilisation may drop to just 38%.

The implication of such low utilisation of new power plants including IPPs is that there will be further growth in capacity payments to these plants while they stand idle much of the time, increasing the BPDB's expenses and losses.

The record high government subsidy to the BPDB in FY2020-21 cannot be regarded as a peak. With more capacity due to come online – leading to worsening overcapacity and increasing capacity payments – larger and larger government subsidies will likely be required in the future to cover BPDB's growing losses. The BPDB has predicted that the government subsidy required for FY2021-22 may be Tk200 billion – a 71% increase on the record subsidy in FY2020-21.

## *New Power Master Plan Is an Opportunity for a Reset*

A new Integrated Energy and Power Master Plan (IEPMP) is currently being prepared for Bangladesh, funded by the Japan International Cooperation Agency (JICA) – this represents an opportunity to reset plans for the power sector to provide a financially sustainable power system for the long term.

The transformation to a low carbon energy system JICA has envisaged cannot be achieved if the IEPMP focuses on fossil fuelled LNG plants and coal power stations like Matarbari 2. JICA, if it calls for a continued expansion of power capacity fuelled by imported fossil fuels, would be contributing to worsening overcapacity, rising capacity payments, deteriorating BPDB operating losses and the resultant increases in government subsidies and power tariffs.

Instead, the steps needed to be taken for Bangladesh’s power system to ensure long-term financial sustainability while meeting growing power demand include:

- With 2021 clearly highlighting the significant risk of becoming too reliant on LNG, the new IEPMP must not lock in a shift from over-reliance on imported coal to an over-reliance on imported LNG.
- Given the overcapacity, new power capacity growth should be limited as far as possible for the first half of this decade. Power plants that have not begun construction need to be halted – this applies to expensive LNG- and oil-fired plants as well as coal-fired power proposals such as Matarbari 2.
- Instead, given the power system’s very low overall utilisation of just 42%, the new IEPMP should prioritize grid investments so that better use can be made of existing capacity and reliability of power supply can be improved.
- Energy efficiency can help limit the amount of expensive new power capacity needed to meet long term demand growth. Japan, as an energy efficiency world leader, is well placed to help Bangladesh plan for increased efficiency via the new IEPMP.
- More ambitious renewable energy targets need to be committed to. The government’s Mujib Climate Prosperity Plan has targets of 30% renewable energy by 2030 and 40% by 2041 which should be reflected in the IEPMP. The Climate Prosperity Plan calls for a significant scaling up of renewable energy investment, including offshore wind.
- In addition, the Sustainable and Renewable Energy Development Authority (SREDA) has proposed incorporating a new target of 10,000MW of renewables by 2030 – representing about 25% of capacity by that date –

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into the new IEPMP. Wind and solar plants – like the new Orion Group solar project in Mongla, Bangladesh’s largest – don’t receive capacity payments like fossil fuelled power plants. Instead, they are paid only for power produced.

- This SREDA target – along with the Mujib Climate Prosperity Plan – represent a significant increase in renewable energy ambition. If Bangladesh wishes to start enjoying the benefits of low-cost renewable energy as much of the rest of the world is doing, such ambitious wind and solar targets need to be locked into the new IEPMP.

## Introduction

In early 2020, following the release of the Bangladesh Power Development Board's (BPDB) 2019-20 Annual Report, IEEFA published a briefing note warning that overcapacity, allied with increasing reliance on coal and LNG imports, was likely to have significant implications for the financial sustainability of Bangladesh's power system.<sup>1</sup>

Following the release of its 2020-21 Annual Report, we revisit the financial status of the BPDB, consider how this status is likely to change and suggest an alternative path forward that is more likely to lead to a financially sustainable power system of the type required to support Bangladesh's fast-growing economy.

## Overview of the Power System in FY2020-21

According to the BPDB's FY2020-21 Annual Report,<sup>2</sup> overall power capacity increased by 1,648MW or 8% over the prior year (Table 1). Most of this came from new installations of coal-fired power, gas-fired power and expensive oil-fired power that, despite its high cost, continues to be built in Bangladesh.

Meanwhile just 91MW of utility-scale solar was added during the year. Total utility-scale solar installations languish at just 129MW as solar installations around the world continue to surge.

**Table 1: Power Capacity, Generation and Capacity Utilisation FY2020-21 and FY2019-20**

Source	FY2020-21			FY2019-20		
	Capacity (MW)	Generation (GWh)	Utilisation %	Capacity (MW)	Generation (GWh)	Utilisation %
Coal	1,768	4,997	32.3%	1,146	2,968	29.6%
Gas	11,450	48,403	48.3%	10,979	51,290	53.3%
Hydro	230	655	32.5%	230	825	40.9%
Utility scale solar	129	158	14.0%	38	62	18.6%
Furnace Oil	6,004	17,497	33.3%	5,540	9,461	19.5%
Diesel	1,290	609	5.4%	1,290	139	1.2%
Imports - India	1,160	8,103	79.7%	1,160	6,674	65.7%
<b>Total</b>	<b>22,031</b>	<b>80,422</b>	<b>41.7%</b>	<b>20,383</b>	<b>71,419</b>	<b>40.0%</b>

Source: Bangladesh Power Development Board, IEEFA calculations.

However, a positive step forward on renewables occurred after fiscal year end. In December 2021, Bangladesh's largest solar plant (134MW) began operations on a site that had previously been earmarked for a coal-fired power plant. With the agreement of BPDB the Orion Group switched focus from coal to solar – the new plant doubles the total utility-scale solar capacity in Bangladesh.<sup>3</sup>

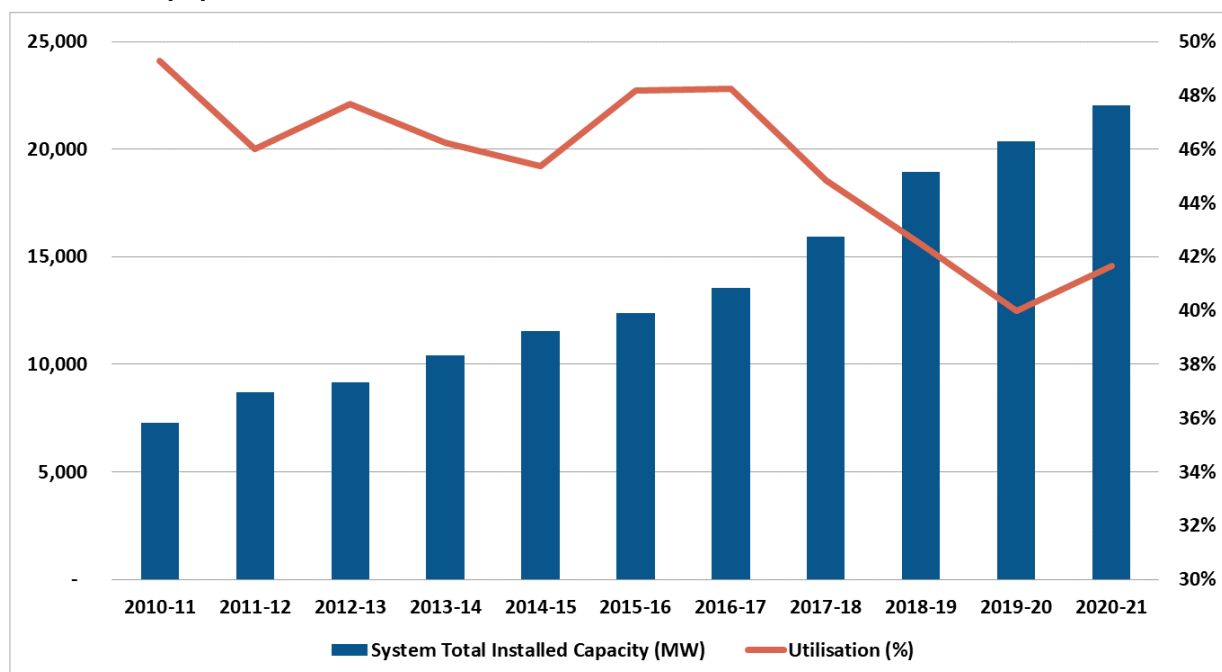
<sup>1</sup> IEEFA. [Bangladesh's power system overcapacity is getting worse](#). 20 January 2021.

<sup>2</sup> BPDB. [Annual Report 2020-21](#).

<sup>3</sup> The Business Standard. [Largest solar project in Mongla set to begin operations 25 December](#). 22 December 2021.

In terms of power generation, FY2020-21 saw a correction back to significant power generation growth of 12.6% following the earlier economic impacts of COVID-19 on FY2019-20. This was driven to a large extent by increased oil-fired power generation – a very expensive source. In addition, there was an increase in coal-fired power generation with the Payra coal-fired power plant available throughout the year. On the other hand, gas-fired power generation dropped compared to FY2019-20 as LNG prices rose to record levels.

**Figure 1: Bangladesh Power Capacity (MW) and Overall Capacity Utilisation (%)**



Source: Bangladesh Power Development Board, IEEFA calculations.

With 2020-21 power generation growth bouncing back from the depressed level in the previous fiscal year, overall utilisation of Bangladesh’s power fleet saw a slight improvement in the year although it remains very low at 42% (Figure 1). In addition, given the amount of new capacity under construction and to be added to the power system over the next five years, it can be expected that the utilisation rate will soon continue its downward trend (See ‘Overcapacity Set to Worsen Going Forward’ below).

The increase in capacity utilisation was led by oil-fired power plants. Utilisation of coal-fired power improved slightly but remained unsustainable at 32% (Table 1) with half of the capacity at the new Payra coal-fired power plant unable to be used because sufficient transmission infrastructure is not yet in place.<sup>4</sup>

<sup>4</sup> The Business Standard. [Half-done Payra transmission line makes PDB pay Tk115cr in monthly penalty](#). 11 June 2021.

## Power Development Board 2020-21 Financial Results

Table 2 breaks down the BPDB's operating revenue and expenses, highlighting that its operating loss doubled in FY2020-21.

The increased loss was caused by operating expenses rising more than revenues, the former's growth clearly driven by a very significant rise in the cost of electricity purchases from independent power plants (IPPs), which rose 58% over the prior year.

**Table 2: BPDB Statement of Income Showing Operational Losses**

	FY2020-21	FY2019-20	Change
	Millions of Taka	Millions of Taka	%
Operating Revenue	417,703	355,354	18%
Generation Expenses	58,545	64,234	-9%
Electricity Purchase from IPP	277,374	175,190	58%
Electricity Purchase from India	47,129	40,171	17%
Electricity Purchase from Rental	33,282	32,164	3%
Electricity Purchase from Public Plant	69,170	66,717	4%
Transmission Expenses for Wheeling Charge	2,439	2,320	5%
Distribution Expenses	11,817	13,541	-13%
General and Admin Expenses	4,594	4,535	1%
Total Operating Expenses	504,350	398,872	26%
Operating Loss	(86,647)	(43,518)	99%

Source: Bangladesh Power Development Board.

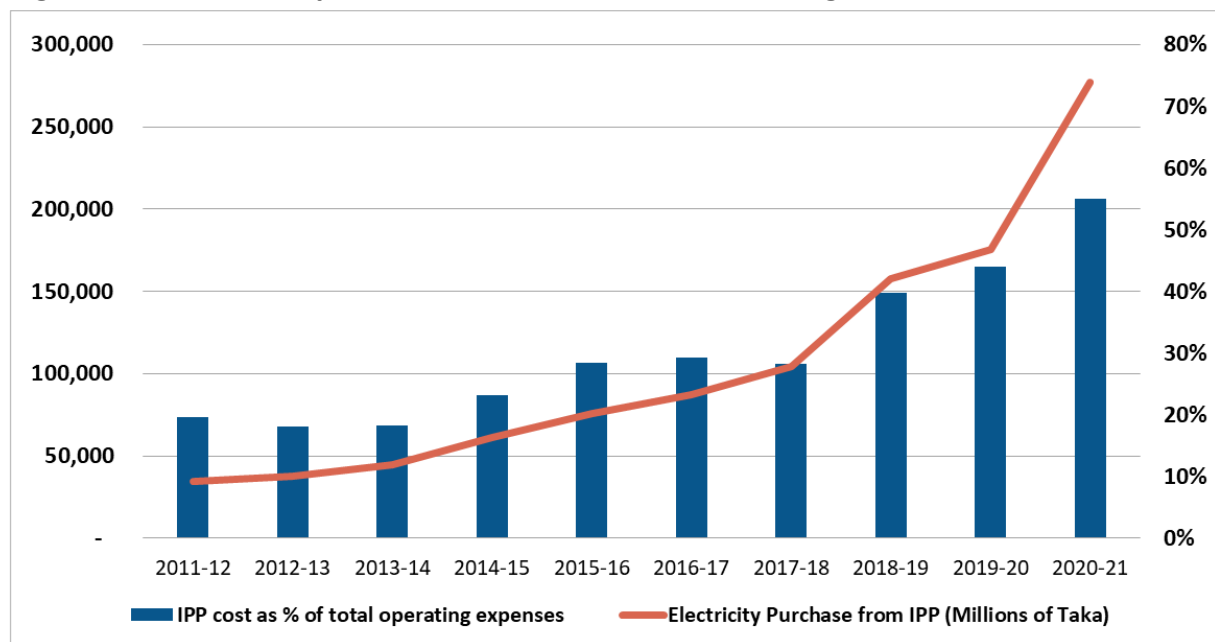
The result of BPDB's very large operating loss was that a similarly large government subsidy was needed to avoid a significant cashflow shortfall and net loss. The Bangladesh government has been required to provide subsidies to the BPDB for a decade to cover losses made by selling power at a price lower than the cost of power generation and electricity purchases from independent generators. In FY2020-21, the subsidy was a record at Tk117.8 billion (US\$1.4 billion), up from Tk74.4 billion in the prior year – an increase of 58%.

### IPP Costs Will Continue To Rise

For the first time, the cost of electricity purchase from IPPs now represents more than 50% of BPDB's total operating expenses (Figure 2). The 58% increase in the IPP cost was partly as a result of increased power units purchased from these plants – 34.6TWh in FY2020-21 up from 25TWh in the prior year, an increase of 38%. However, a further driver was the higher per unit cost of each kWh purchased from the IPPs, rising to more than Tk8/kWh in 2020-21 from Tk7/kWh in the prior year, a 15% increase.

This drove an overall per unit electricity supply cost increase of 11.8% in FY2020-21.

**Figure 2: BPDB's Independent Power Producer Cost Rising**



Source: Bangladesh Power Development Board, IEEFA calculation.

Additional expensive oil-fired power generation has contributed to losses in FY2020-21 but the single largest contributor to the increased cost of IPP power purchases was the new Payra coal-fired power plant. This was to a large extent because the first unit was online all year in FY2020-21 as opposed to just a small part of FY2019-20. Power purchases from the Payra plant reached 3.8TWh in FY2020-21 compared to just 0.8TWh in the prior year.

However, the cost of each unit of power purchased from Payra also increased in FY2020-21, rising to Tk8.6/kWh, a 36.5% increase on the previous year's Tk6.3/kWh. This was driven by capacity payments made to the plant whilst one of its units stands idle due to a delay in construction of power transmission infrastructure. The BPDB is paying Tk1.3 billion (US\$15 million) a month in capacity charges to the Payra power station.<sup>5</sup>

Total capacity payments to private power plants reportedly increased again to Tk132 billion (US\$1.5 billion) in FY2020-21, up 25% from the prior year.<sup>6</sup>

With more large coal IPPs under construction and large capacities of LNG-fired IPPs planned, it can be expected that the BPDB's IPP cost will continue to increase

<sup>5</sup> Dhaka Tribune. [Govt fails to take power from Payra plant, counts huge loss in capacity payment.](#) 30 July 2021.

<sup>6</sup> New Age Bangladesh. [Power overcapacity in Bangladesh grows, economic burden too.](#) 3 December 2021.



significantly. At the same time, these large additional capacities will exacerbate Bangladesh's overcapacity problem – further adding to the IPP cost by necessitating large capacity payments to power plants lying idle much of the time.

## Overcapacity Set to Worsen Going Forward

The expensive capacity payments being made to the Payra coal-fired power plant are a result of a lack of transmission infrastructure meaning half the plant is lying idle. However, the overall utilisation of Bangladesh's power plants is just 42%. Despite a large increase in power generation in FY2020-21, many power plants are standing idle much of the time even where the necessary transmission infrastructure is available.

With much more power capacity on the way, overcapacity can be expected to worsen in Bangladesh. According to the BPDB's FY2020-21 annual report, 12,967MW of new power capacity is under construction and 19,651MW is planned to be added by the end of FY2024-25. Over the same period, only 3,990MW of old capacity is planned to be retired, according to the BPDB.

The FY2020-21 annual report makes clear that more than 600MW of further oil-fired power plants are to be added in the next two fiscal years. In addition, there are large additions of coal-fired power plants to be added by 2025. This includes the much-delayed Rampal coal plant which, like Payra, faces a delay on the needed transmission infrastructure<sup>7</sup> and the significantly over-budget and over-schedule Matarbari 1 coal power plant.<sup>8</sup> In addition, Adani Power's Godda coal power project in Jharkhand, India – which will export power to Bangladesh – is due for commissioning in 2022 according to the BPDB. The need to transport imported coal 700km from port to the power plant and then transmit power across the border means this will prove to be an expensive source of electricity for Bangladesh.

Significant capacity of LNG-fired power is due to come online by 2025 with much more planned (although there is significant doubt over the financial capacity to add all this planned capacity).<sup>9</sup> This will increase Bangladesh's exposure to the volatile LNG market (see '2021 Demonstrated the Risk of Reliance on LNG' below).

The BPDB is expecting that the first, 1,200MW unit of the Rooppur nuclear power plant will be commissioned in October 2024 with another 1,200MW to follow. In the unlikely event that this power plant is completed on budget it will have cost Tk1.13 trillion (US\$13 billion).<sup>10</sup> Nuclear power plants cannot be ramped up and down easily and need to operate at high utilisation rates, only shutting down for maintenance and refuelling. The Rooppur plant can be expected to run at a much

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<sup>7</sup> The Business Standard. [Rampal power plant test run likely in January, operation in June next](#). 15 November 2021.

<sup>8</sup> The Daily Star. [Matarbari Power Plant Project: Cost goes up 44pc with channel expansion](#). 22 November 2021.

<sup>9</sup> IEEFA. [Emerging Asia's unrealistic LNG-to-power project pipeline threatens macroeconomic and financial stability](#). 15 December 2021.

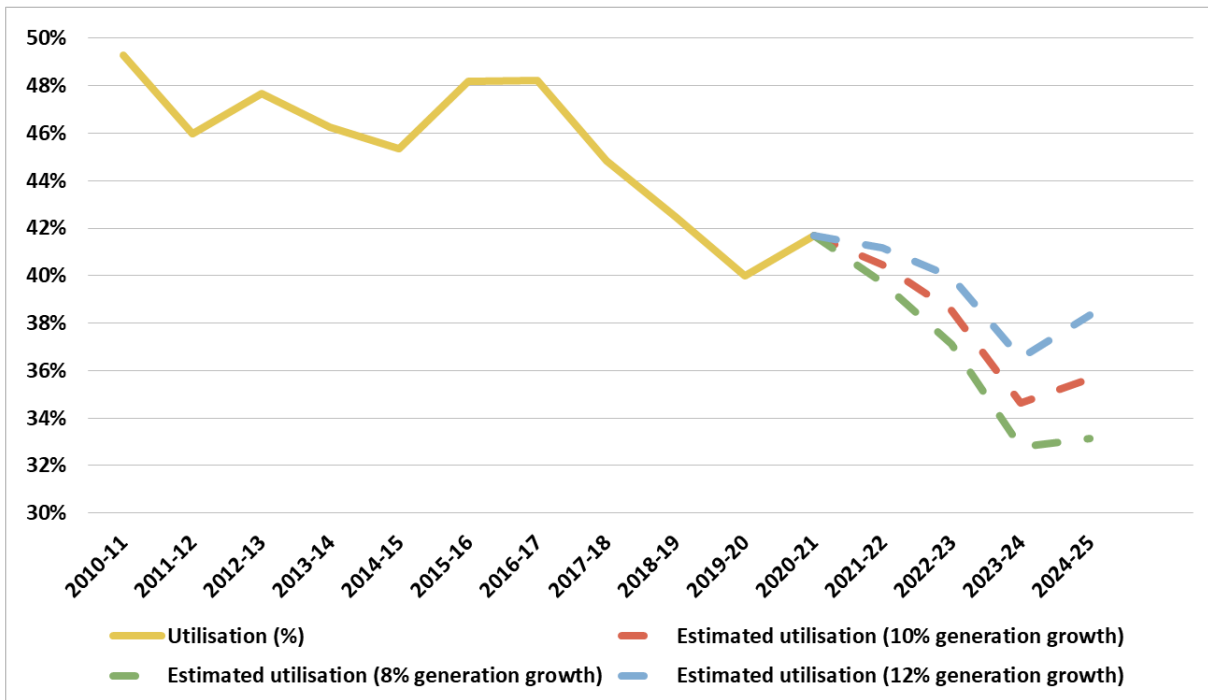
<sup>10</sup> The Business Standard. [Rooppur nuke plant: Reactor pressure vessel installation kicks off](#). 14 September 2021.

higher utilisation rate than other power plants in Bangladesh – about 85%. However, this will have a detrimental impact on the utilisation of the thermal power fleet.

All these capacity additions suggest that it is likely that capacity growth will significantly outpace power generation growth over the coming years. The result of this will be that overall power plant utilisation will drop further by FY2024-25. A simple calculation taking into account planned capacity additions and retirements according to the BPDB FY2020-21 Annual Report suggests that, even if power generation grows at a very high 12% per annum out to FY2024-25, overall power capacity utilisation may drop to just 38% (Figure 3).

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the volatile LNG market.**

**Figure 3: Actual and Estimated Future Total System Capacity Utilisation (%)**



Source: Bangladesh Power Development Board, IEEFA estimates.

The implications of such low utilisation of new power plants including IPPs is further growth in capacity payments to these plants while they stand idle much of

the time, increasing the BPDB's expenses and losses. The average cost of power supply would increase and place unsustainable financial pressure on Bangladesh's power system.

## 2021 Demonstrated the Risk of Reliance on LNG

Amid ongoing global momentum away from coal-fired power – including the continuing shift away from coal by financial institutions – the Bangladesh government accepted the inevitable and cancelled 10 coal-fired power plants in 2021.<sup>11</sup> Some of these cancelled projects are intended to be switched to LNG as Bangladesh plans to become increasingly reliant on LNG imports going forward.

**LNG prices are even more volatile than imported coal.**

However, LNG prices are even more volatile than imported coal, a fact clearly demonstrated by the record LNG price spikes seen in 2021 (Figure 4).

LNG prices soared to record highs at the beginning of 2021, calling into question the sense of any developing nation investing large sums on LNG import terminals, pipelines and LNG-fired power plants.<sup>12</sup> However, this price spike was dwarfed by the one that occurred in September/October 2021 when spot LNG prices surged past US\$50/MMBtu for the first time.<sup>13</sup> There is no guarantee it will be the last time.

<sup>11</sup> The Daily Star. [Govt officially cancels 10 coal power plant projects](#). 28 June 2021.

<sup>12</sup> IEEFA. [Over \\$50 billion in gas projects and LNG import facilities at risk of cancellation in Bangladesh, Pakistan and Vietnam](#). 14 January 2021.

<sup>13</sup> S&P Platts. [JKM LNG prices surge past \\$50/MMBtu mark as European gas crisis intensifies](#). 6 October 2021.

**Figure 4: LNG Prices Spiked Dramatically in 2021**



Source: S&P Global Platts Dimensions Pro.

In the second half of 2021 – after FY2020-21 – Bangladesh was forced to reverse a decision to avoid the increasingly expensive spot LNG market amid significant gas shortages that impacted industry, power plants and households.<sup>14</sup> Bangladesh was subsequently forced to pay record spot LNG prices,<sup>15</sup> highlighting the risk to the country of increasing reliance on the imported fuel.

Furthermore, Bangladesh’s contracted LNG suppliers will reduce deliveries in 2022 according to Petrobangla.<sup>16</sup> Qatargas and Oman Trading International can reduce deliveries to Bangladesh, without violating their contract terms, to take advantage of the volatile spot market. This will likely cause gas shortages unless Bangladesh can itself make up the difference via opportunities in the spot market.

In January 2022, Bangladesh once again resumed spot purchases of LNG after avoiding the spot market for several months due to high prices. For February 2022 delivery, Bangladesh will pay at least US\$30/MMBtu.<sup>17</sup>

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The International Energy Agency’s (IEA) most recent Gas Market Report notes that

<sup>14</sup> S&P Platts. [Bangladesh to tap into costlier Asian spot LNG market amid acute energy shortages](#). 20 September 2021.

<sup>15</sup> Reuters. [Bangladesh pays record prices for two LNG cargoes for Oct – sources](#). 8 October 2021.

<sup>16</sup> S&P Platts. [Qatar, Oman to reduce 2022 LNG deliveries to Bangladesh](#). 2 December 2021.

<sup>17</sup> S&P Platts. [Bangladesh resumes spot LNG imports after hiatus](#). 31 January 2022.

high LNG price volatility is likely to be maintained into 2022 with prices reacting to weather and geopolitical events as well as commercial and physical factors. The IEA also highlights the damage done by high LNG prices to consumers, utilities and wholesalers around the world. Emerging markets have been particularly impacted and are “already experiencing power cuts, industrial demand destruction and potential food supply issues in the absence of affordable gas-based fertilisers”.<sup>18</sup>

## **Government Subsidies to Bail Out BPDB’s Losses Expected to Continue Growing**

The record high government subsidy to the BPDB in FY2020-21 cannot be expected to be a peak. With more capacity due, taking the Bangladesh power system even deeper into overcapacity, capacity payments can be expected to keep rising, and the BPDB’s expenses burden to become even weightier. Ever larger government subsidies will likely be required to cover BPDB’s worsening losses. The BPDB itself has predicted that the government subsidy required for FY2021-22 may need to be Tk200 billion – a 71% increase on the record subsidy in FY2020-21.<sup>19</sup>

Bangladesh’s 8<sup>th</sup> Five-Year Plan for 2020-2025 acknowledges that the issues of overcapacity and the rising capacity payments that accompany it, as well as a rise in reliance on expensive fossil fuel imports, jeopardise the financial sustainability of the power system.<sup>20 21</sup>

Increasing subsidies for BPDB will put pressure on the Bangladesh government’s budget. It may be necessary to further increase power tariffs. The Bangladesh Energy Regulatory Commission (BERC) increased retail power tariffs by 5.3% from March 2020 and more increases are likely to be needed. In addition, the Bangladesh Energy Regulatory Commission (Amendment) Bill, passed in 2020, allows BERC to increase tariffs as often as needed. Previously, tariffs could only be raised once per fiscal year.

More frequent tariff increases can therefore be expected, transferring some of the burden of overcapacity and expensive fossil fuel imports onto consumers.

Gas prices are also subsidised and sold at below-cost to the largest users, of which the power sector is by far the largest. The beginning of LNG imports in 2018 led to a rise in the cost of gas and a significant gas tariff hike (33%) for all sectors in July

**More frequent tariff increases can be expected.**

<sup>18</sup> IEA. [Gas Market Report Q1 2022](#). January 2022.

<sup>19</sup> Financial Express. [Bangladesh’s power subsidy to hit Tk 200b](#). 17 November 2021.

<sup>20</sup> Government of Bangladesh. [8<sup>th</sup> Five Year Plan July 2020 – June 2025](#). December 2020.

<sup>21</sup> IEEFA. [New power and energy master plan must be designed in Bangladesh’s best interests, not Japan’s](#). 24 May 2021.

2019 – the largest gas tariff increase in Bangladesh so far. Growing dependence on LNG imports amid declining domestic gas production will lead to further tariff hikes.

## Growing Pressure to Raise Tariffs

Bangladesh's 8<sup>th</sup> Five-Year Plan notes that a future in which Bangladesh becomes more reliant on imported coal and LNG risks even further increases in the cost of electricity.<sup>22</sup> More pressure for major increases to gas and power prices is already being felt.

In January 2022 gas distributors proposed a more-than-doubling of gas tariffs to BERC following the spike in the cost of LNG imports.<sup>23</sup> The proposal applies to all gas consumers including industry and households. For power generators, the tariff is proposed to increase from Tk4.45 per cubic meter to Tk9.66 – a 117% increase.<sup>24</sup>

Following this, the BPDB has proposed its own major increase to its bulk power tariff to BERC.<sup>25</sup> Citing the increase in the cost of purchasing power as well as the spike in LNG, oil and coal costs, the BPDB is proposing that its electricity supply tariff should rise from Tk5.64 per unit to Tk8.58 – a 52% increase. Power distributors who purchase at the bulk rate will then be under severe pressure to pass on this tariff increase to retail customers.

If gas prices more than double as proposed by distributors, then the BPDB wants a further increase to Tk9.27 per unit – an increase of 64%.

The BPDB is reportedly maintaining that it will have a Tk325 billion (US\$3.8 billion) shortfall if tariffs are not raised as proposed. It foresees its power generation and purchase requirement reaching Tk745 billion (US\$8.6 billion) in calendar year 2022. For fiscal year 2020-21, the BPDB cost of power purchase and generation was Tk485.5 billion (US\$5.6 billion).

Whatever the outcome of these tariff proposals, this won't be the last time tariffs come under pressure to rise significantly.

## New Power Master Plan Is an Opportunity for a Reset

A new Integrated Energy and Power Master Plan (IEPMP) is currently being prepared for Bangladesh – this represents an opportunity to reset plans for the power sector to provide the country with a financially sustainable power system for the long term.

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<sup>22</sup> Government of Bangladesh. 8<sup>th</sup> Five Year Plan July 2020 – June 2025. December 2020.

<sup>23</sup> The Business Standard. [Amid oil shock, 100% gas price hike in the making](#). 18 January 2022.

<sup>24</sup> Financial Express. [Bid for doubling gas price, fear of public suffering expressed](#). 19 January 2022.

<sup>25</sup> Financial Express. [66pc hike in power tariff proposed following move to double gas price](#). 26 January 2022.

In March 2021, the Japan International Cooperation Agency (JICA) signed a Record of Discussions with the Bangladesh government for the development of the new IEPMP. In its announcement of the signing of the Record of Discussions for the IEPMP, JICA talks of a “transformation to a low or zero carbon energy system”, noting that its work will contribute to two of the 17 Sustainable Development Goals established by the United Nations General Assembly in 2015 – Sustainable Development Goal 7 (Affordable and Clean Energy) and 13 (Climate Action).<sup>26</sup>

JICA funded the IEPMP’s predecessor – the 2016 Power System Master Plan (PSMP 2016), which called for a major roll-out of power stations to be fuelled by imported coal and LNG. Unsurprisingly, coal- and LNG-fired power generation were technologies that Japanese companies were keen to sell to developing Asian nations like Bangladesh.

**Coal- and LNG-fired  
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JICA itself financed the Matarbari 1 coal-fired power plant which is currently under construction by Japanese company Sumitomo Corporation. JICA is now also considering financing a second coal power plant in Bangladesh – Matarbari 2 – despite Bangladesh’s worsening overcapacity and Matarbari 1 running significantly over-budget and over-schedule.

Japan also has a considerable interest in seeing Bangladesh commit to further LNG infrastructure investment. In January 2021, Tokyo Gas was hired to conduct the feasibility study for an onshore LNG terminal at Matarbari and prepare the Request for Proposal (RFP) documents to select a qualified bidder.<sup>27</sup>

The transformation to a low carbon energy system that JICA has promised cannot be achieved if the IEPMP focuses on fossil-fuelled LNG plants and coal power stations like Matarbari 2. JICA would be contributing to worsening overcapacity, rising capacity payments, deteriorating BPDB operating losses and the resultant increases in government subsidies and power tariffs if it calls for a continued, major expansion of power capacity fuelled by imported fossil fuels.

Instead, the following steps need to be taken for Bangladesh’s power system to ensure long-term financial sustainability while meeting growing power demand:

- Ten coal-fired power projects were cancelled in Bangladesh in 2021. However, with 2021 clearly highlighting the significant risk of becoming too reliant on LNG, the new IEPMP must not lock in a shift from over-reliance on imported coal to an over-reliance on imported LNG.

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<sup>26</sup> JICA. [Signing of Record of Discussions on Technical Cooperation for Development Planning with Bangladesh](#). 15 March 2021.

<sup>27</sup> Financial Express. [Japan firm to study feasibility of Matarbari LNG terminal](#). 11 January 2021.

- Given the overcapacity – and its growing financial burden – new power capacity growth should be limited as far as possible for the first half of this decade. The new IEPMP must also employ more realistic power demand growth forecasts to prevent the continued over-build of new power capacity. Power plants that have not begun construction should be halted – this applies to expensive LNG- and oil-fired plants as well as any further coal-fired power proposals such as Matarbari 2.
- Instead, given the power system’s very low overall utilisation of just 42%, the new IEPMP should prioritize grid investments to make better use of existing capacity and improve reliability of power supply. In December 2021, the World Bank approved a US\$500 million fund to improve Bangladesh’s power distribution system and help it catch up with the major expansion in the country’s power generation capacity over the past 10 years.<sup>28</sup>
- Bangladesh’s 8<sup>th</sup> Five-Year Plan clearly identified energy efficiency (EE) gains as a key goal. EE can help limit the amount of expensive new power capacity needed to meet demand growth. Japan, an energy efficiency world leader, is well placed to help Bangladesh plan for increased efficiency via the new IEPMP.
- More ambitious renewable energy targets need to be committed to and reflected in the IEPMP. At the Glasgow climate conference in 2021, Bangladesh submitted new Nationally Determined Contributions (NDC) to carbon emissions reductions, including a conditional target of adding more than 4,000MW of renewable energy projects by 2030 (depending on external financial and technical support).<sup>29</sup> However, the government’s Mujib Climate Prosperity Plan has more ambitious targets of 30% renewable energy by 2030<sup>30</sup> and 40% by 2041.<sup>31</sup> The Plan calls for a significant scaling up of renewable energy investment, including offshore wind. Renewable energy costs continue to fall and such installations do not receive burdensome capacity payments.
- More recently, the Sustainable and Renewable Energy Development Authority (SREDA) has proposed that a new target of 10,000MW of renewables by 2030 – representing about 25% of capacity by that date – be incorporated into the new IEPMP.<sup>32</sup> This includes a wind power target of 5,000MW,<sup>33</sup> a major increase in wind power ambition for Bangladesh. This target – along with the Mujib Climate Prosperity Plan – represent a

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<sup>28</sup> World Bank. [World Bank Helps Bangladesh Build Modern, Reliable and Sustainable Electricity Supply System](#). 21 December 2021.

<sup>29</sup> UNFCCC. [Bangladesh updated Nationally Determined Contributions 2021](#). 26 August 2021.

<sup>30</sup> Financial Times. [Bangladesh PM: We need a global ‘climate prosperity plan’ not empty pledges](#). 19 October 2021

<sup>31</sup> [Mujib Climate Prosperity Plan](#)

<sup>32</sup> UNB. [25% electricity from renewables by 2030: SREDA proposes, GOB disposes?](#) 30 December 2021

<sup>33</sup> Dhaka Tribune. [Bangladesh bets big on wind energy to curb climate change](#). 8 January 2022



significant increase in renewable energy ambition. If Bangladesh wishes to start enjoying the benefits of low-cost renewable energy as much of the rest of the world is doing, such ambitious wind and solar targets need to be reflected in the IEPMP.

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