

Factsheet: Matarbari Ultra Super Critical Coal-Fired Power Project Phase 1 and Phase 2 (Bangladesh)

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By Japan Center for a Sustainable Environment and Society (JACSES)

1. Project Overview

- Project Purpose:
 - Phase 1: To construct a 1,200MW (600 MW x 2 units) capacity coal-fired power generation using ultra-supercritical (USC) technology and its relating infrastructure (e.g. coal importing port; electric lines) for the supply of electricity
 - Phase 2: To construct a 1,200MW (600 MW x 2 units) capacity coal-fired power generation using USC technology

- Location:

Matarbari, Cox's Bazar District, Chittagong Division, Bangladesh



- Total project cost: approx. 700.4 billion JPY (Phase 1)
To be determined (Phase 2)
- Project owners:
 - Coal Power Generation Company Bangladesh Limited (CPGCBL)
 - Power Grid Company of Bangladesh (PGCB)
 - Roads and Highways Department, Ministry of Road Transport and Bridges (RHD)

- EPC Contract (Phase 1): Sumitomo Corporation, Toshiba, IHI
(Phase 2): To be determined
- Loaning Institutions (Phase 1):
 - Japan International Corporation Agency (JICA) is currently funding based on the following contracts (an expected record-high total amount of 500 billion yen).
 - Term 1 (L/A signed June 2014): 41.498 billion JPY
 - Term 2 (L/A signed June 2016): 37.821 billion JPY
 - Term 3 (L/A signed June 2017): 10.745 billion JPY
 - Term 4 (L/A signed June 2018): 67.311 billion JPY
 - Term 5 (L/A signed July 2019): 143.127 billion JPY
 - In October 2017, Nippon Export and Investment Insurance (NEXI) completed underwriting a general trade insurance for Sumitomo Corporation’s and IHI’s orders.¹
- Planned run date: January 2024 (Phase 1)
December 2028 (Phase 2)²

2. Project Timelines

Phase 1

November 2, 2012	JICA’s Environmental and Social Considerations Advisory Committee finalizes advice regarding the environmental and social considerations (ESCs) of the scoping proposal of the preparatory surveys ³
May 10, 2013	JICA’s Environmental and Social Considerations Advisory Committee finalizes advice regarding the ESCs of the DFR of the preparatory surveys ⁴
June 2013	CPGCBL completes the Environmental Impact Assessment (EIA) ⁵
July 22, 2013	CPGCBL submits the EIA to the Department of Environment (DoE) ⁶
October 10, 2013	DoE approves the EIA concerning the construction and maintenance of power plant and port

¹ Nippon Export and Investment Insurance, “People’s Republic of Bangladesh / Support for Construction of Matarbari Ultra-super Critical Coal-fired Thermal Power Plant and Port”.
<https://www.nexi.go.jp/topics/newsrelease/2017100602.html>

² https://powerdivision.portal.gov.bd/sites/default/files/files/powerdivision.portal.gov.bd/page/4f81bf4d_1180_4c53_b27c_8fa0eb11e2c1/Revisiting%20PSMP2016%20%28full%20report%29_signed.pdf

³ https://www.jica.go.jp/environment/advice/ku57pq0000newlq-att/ban03_sco_jogen.pdf

⁴ https://www.jica.go.jp/environment/advice/ku57pq0000newlq-att/ban03_DFR_jogen.pdf

⁵ <https://libportal.jica.go.jp/library/Data/DocforEnvironment/EIA-EPC/EastAsia-SouthwesternAsian/ChittagongACFPPDP/BCEIA.pdf>

⁶ https://libportal.jica.go.jp/library/Data/DocforEnvironment/EIA-EPC/EastAsia-SouthwesternAsian/ChittagongACFPPDP/BCEIA_Approval.pdf

October 28, 2013	JICA publishes the Land Acquisition and Resettlement Action Plan (LARAP)
November 19, 2013	DoE approves the EIA concerning the construction and maintenance of power lines and access roads
June 16, 2014	JICA and the Government of Bangladesh sign the term 1 L/A ⁷
March 2015	JICA releases the Business Preparatory Survey Report
June 29, 2016	JICA and the Government of Bangladesh sign the term 2 L/A ⁸
June 29, 2017	JICA and the Government of Bangladesh sign the term 3 L/A ⁹
August 23, 2017	Sumitomo Corporation, Toshiba and IHI announces their joint business ownership
October 18, 2017	NEXI decides to insure orders by Sumitomo Corporation and IHI ¹⁰
January 28, 2018	Start of construction
March 8, 2018	JICA releases the Land Acquisition and Resettlement Action Plan (LARAP) for an access road
April 13, 2018	JICA's Environmental and Social Consideration Advisory Committee finalizes advice on environmental and social considerations regarding environmental review ¹¹
June 14, 2018	JICA and the Government of Bangladesh sign the term 4 L/A ¹²
September 11, 2018	JICA Bangladesh Office Meets Local NGOs at Dhaka Office
April 15, 2019	CPGCBL and JICA held a consultation for affected residents and local NGOs
July 1, 2019	JICA and the Government of Bangladesh sign the term 5 L/A ¹³

Phase 2

April 28, 2020	The Ministry of Foreign Affairs of Japan (MoFA) releases the project brief ¹⁴
June 24, 2020	JICA starts a consultant bidding process for Phase 2 feasibility study ¹⁵
August 20, 2020	JICA decides a consultant for Phase 2 feasibility study
September 10, 2020	The study period for the Phase 2 feasibility study led by JICA (the intended completion date is September 30, 2021)

⁷ https://www.jica.go.jp/press/2014/20140616_01.html

⁸ https://www.jica.go.jp/press/2016/20160629_01.html

⁹ https://www.jica.go.jp/press/2017/20170629_02.html

¹⁰ <https://www.nexi.go.jp/topics/newsrelease/2017100602.html>

¹¹ https://www.jica.go.jp/environment/advice/ku57pq00000newlq-att/ban07_KAN_jogen.pdf

¹² https://www.jica.go.jp/environment/advice/ku57pq00000newlq-att/ban07_KAN_jogen.pdf

¹³ https://www.jica.go.jp/press/2019/20190701_31.html

¹⁴ <https://www.mofa.go.jp/mofaj/gaiko/oda/files/100056631.pdf>

¹⁵ <https://www.jica.go.jp/chotatsu/program/ku57pq00002m9whp-att/20200610g.pdf>

January 8, 2021	JICA's Environmental and Social Considerations Advisory Committee finalizes advice regarding the environmental and social considerations (ESCs) of the scoping proposal of the preparatory surveys ¹⁶
February 27, 2021	CPGCBL holds a stakeholder consultation meeting in Dhaka
March 6, 2021	CPGCBL holds a stakeholder consultation meeting in Matarbari

3. Main Problems



Figure 1. Conditions by the northwest gate. The project site is on the right-hand side.



Figure 2. Alternative housing for relocated residents during construction.

- 1) **Matarbari coal-fired power project (Phase 1) has not been meeting JICA's Guidelines for Environmental and Social Considerations:** in JICA's Guidelines for Environmental and Social Considerations, it states "[p]rior compensation, at full replacement cost, must be provided as much as possible. Host countries must make efforts to enable people affected by projects and to improve their standard of living, income opportunities, and production levels, or at least to restore these to pre-project levels." However, the Matarbari Phase 1 has not been meeting the requirement. Also, the project is causing a lot of problems including worsening of floods because of the destruction of water channels for agriculture and water gates, damage of community roads, increase in traffic accidents, inflow and accumulation of sediment in surrounding rivers, and the filling up of a river due to the dumping of dredged soil, which has significant adverse impacts on the livelihoods of local communities. The local community has been demanding project owners and JICA of solving problems over and over again, however, it is taking quite a long time to improve the situations mentioned above.
 - a. **Worsening of floods:** Prior to construction, the local area used to have several water gates installed to mitigate flooding. However, three of these water gates were closed off at the start of the project construction. Local residents and NGOs have

¹⁶ https://www.jica.go.jp/environment/advice/ku57pq00000newlq-att/ban11_SCO_jogen.pdf

pointed out the flooding of houses, fields, rice paddies, schools, and other areas, the inability to secure food and drinking water, and a case where a child has drowned. The area had never experienced such serious floods in the past and has only worsened since the start of the project. In response, JICA insists that there is no direct relationship between the project and floods. However, not only is it difficult to prove the cause of natural disasters in the first place, but data on water levels and damages were not recorded prior to the implementation of the project. Even if the relationship between the disasters and the project cannot be proven, there is still the possibility that the JICA project is affecting the area. Therefore, preventative measures should be taken, and a disaster relief system should be prepared in case further damages occur.

- b. **Insufficient recovery of livelihoods:** The Matarbari district thrives with salt farming in the dry season and shrimp farming during the rainy season. The project site was also used as a salt and shrimp farm, which many residents relied on to make a living. However, these residents are now unemployed due to the construction of the power plant. According to JICA's LARAP, 343 households (2,031 people) are likely to have been directly affected by the project, 70% of which are either salt or shrimp farmers. In addition to the landowners and land users of these farms, 1057 people were hired by the farmers to earn a living. According to a local NGO, the majority of affected people have struggled to find new jobs and suffered from unemployment. Residents have repeatedly protested demanding for work. JICA states that around 1200 people (as of December 2020) have been employed at the construction site. However, according to a local NGO, only 500 local people (as of December 2020) were employed due to the coronavirus pandemic and as a result, there is a serious unemployment issue in the area. JICA stated that the number of vocational training participants was 307 (as of October 2020), however they are facing difficulties tracking the number of employed persons after course completion (vocational training is provided for affected residents). Therefore, loss and reimbursement of livelihoods as specified in JICA's Environmental and Social Considerations Guidelines have not been properly implemented, making it hard to believe that the social agreements have been properly achieved.
- c. **Delay in providing alternative housing and insufficient compensation amounts:** Resettlements of over 40 households were carried out. While alternative housing is currently provided, in the past, a local NGO pointed out that relocated residents were living in surrounding housing and were required to pay high rent, and that the construction of alternative houses was significantly delayed. Regarding

compensations, residents pointed out that several relocated households were missing from the list of compensation recipients.

- d. **Damage of community roads and traffic accidents:** Project related vehicles (including heavy vehicles) frequently travel through the Matarbari's narrow community roads, resulting in complaints regarding road damage and the safety of residents. JICA plans on constructing a new access road in the future, but access roads should have been built before starting project constructions if they considered the safety of the local residents.
- e. **Inflow and accumulation of sediment in surrounding rivers:** Water containing large amounts of sediment is being released from the drainage gate located on the east side of the project area, resulting in large amounts of sediment accumulating in the Kohelia river and affecting the operations of ships. Although the executing agency and JICA do not recognize the relationship between the project and sediment accumulation, they measured the water level near the drainage gate and carried out dredging work. However, it is said that this implementation was carried out only partly, thus it is still insufficient for ship operations.
- f. **Filling up of the Kohelia river due to the impacts of access road construction:** As an additional component of the Phase 1 project, an access road (total length approx. 7.3 km, width approx. 5.5 m) is being constructed along the Kohelia river from the Matarbari bridge. However, due to the dredged soil associated with this construction, the Kohelia river has been filled up for over 20 meters. The access road's environmental review policy states that "most of the existing road and embankments will be used, and most of the project site will be flat, thus no significant impact is expected." Moreover, there is no mention about filling up the river in the EIA. In January 2021, a local DoE official told *The Daily Star* (an English-language newspaper in Bangladesh) that the DoE did not issue any clearance on encroaching the river.¹⁷ If this is true, it would be a clear violation of JICA's "Guidelines for Environmental and Social Considerations." According to a local NGO, the Environment Bureau is currently confirming this fact with the Road Bureau.

¹⁷ Yousuf, Mostafa. "The killing of Kohelia", *The Daily Star*. (January 25, 2021). <https://www.thedailystar.net/frontpage/news/the-killing-kohelia-2033253>

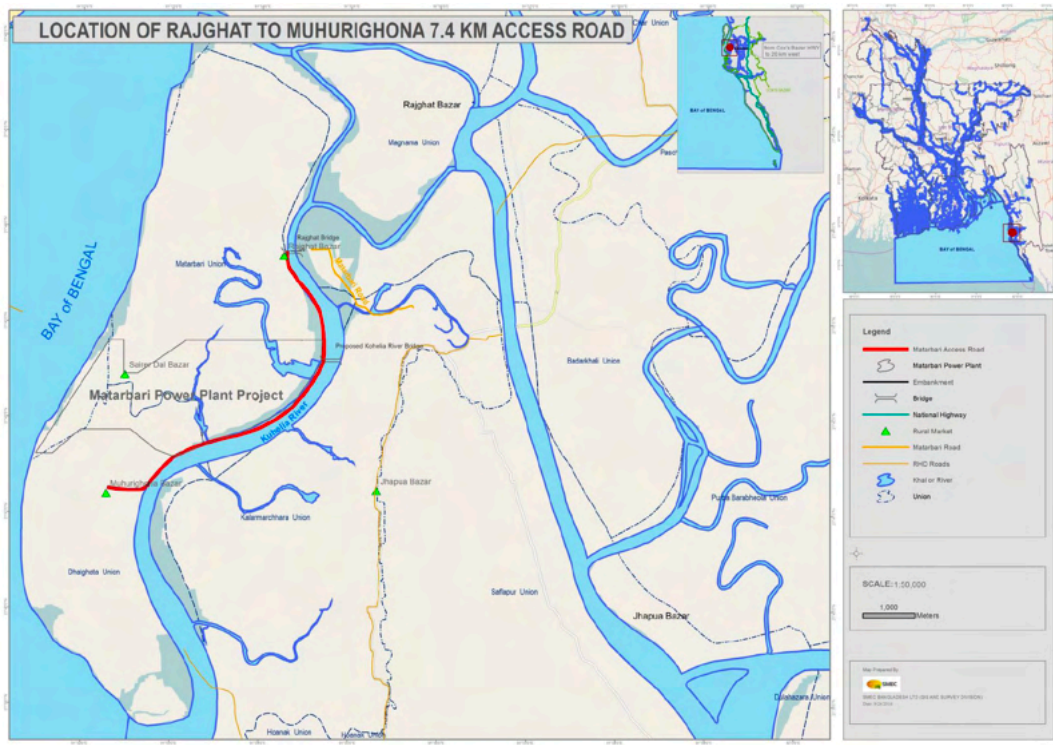


Figure 3. Map of the access road (red line)¹⁸



Figure 4. Access road construction along the Kohelia river.

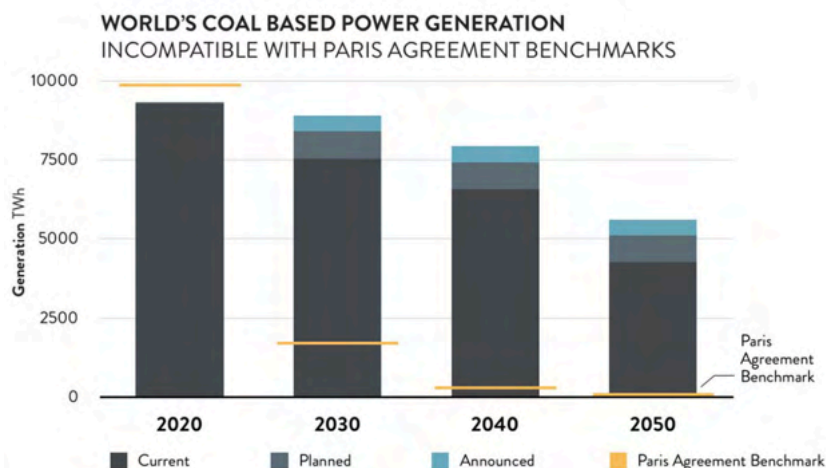


Figure 5. Filling up of the Kohelia river due to the access road construction.

- 2) **Supporting the Matarbari Phase 2 is not consistent with Japan’s Long-term Strategy under the Paris Agreement (approved by the Cabinet in June 2019):** In Japan’s Long-term Strategy under the Paris Agreement (approved by the Cabinet in June 2019), it states that “the Government will promote the development and investment of energy infrastructure

¹⁸ Government of the People’s Republic of Bangladesh, Ministry of Road Transport and Bridges, Roads and Highways Department. “EIA: Detailed design and supervision of access road construction component of Matarbari ultra super critical coal fired power project (RHD part) JICA Loan: BD-P76 & BD-P88.” https://www.jica.go.jp/english/our_work/social_environmental/id/asia/south/bangladesh/c8h0vm000090ry4d-att/c8h0vm0000f8vye6.pdf

abroad in order to contribute to the global reduction of CO2 emissions consistent with the long-term goals stipulated in the Paris Agreement”. To achieve the Paris goals, it is necessary even for developing countries like Bangladesh to completely stop the operation of coal-fired power plants by 2040. It is obvious that the building of new coal-fired power plants, even with the high efficiency next-generation technology, is inconsistent with the Paris goals.

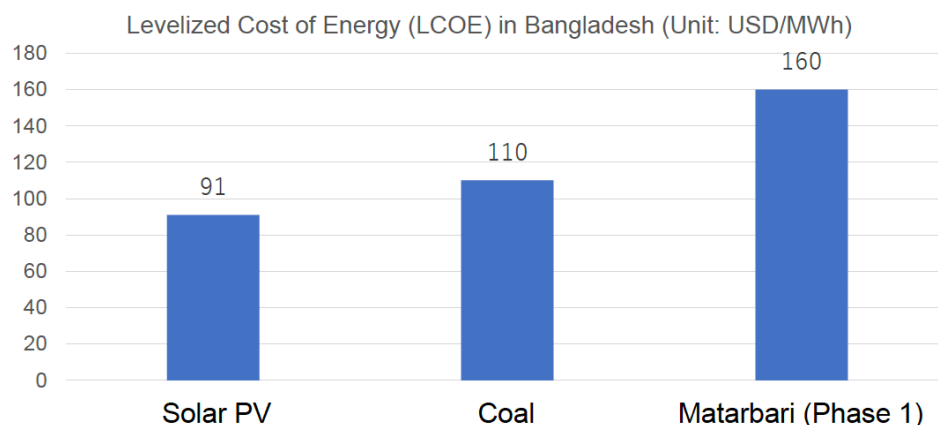


Source: Climate Analytics, Global and regional coal phase-out requirements of the Paris Agreement: Insights from the IPCC Special Report on 1.5°C

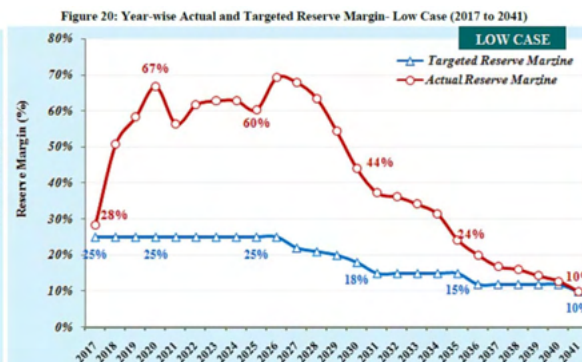
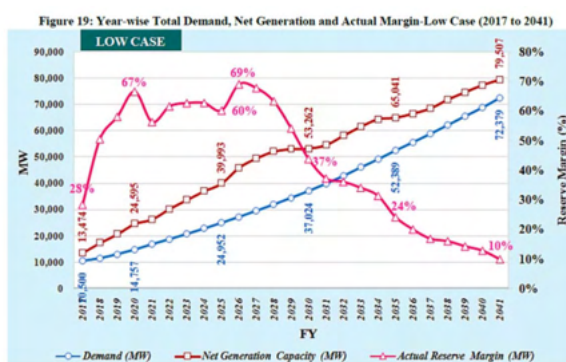
- 3) **Supporting the Matarbari Phase 2 is not consistent with Japan’s Strategic Energy Plan (approved by the Cabinet in July 2018):** In Japan’s Strategic Energy Plan (approved by the Cabinet in July 2018), it states that the government provides assistance to coal-fired power projects “when the nations have no choice but to use coal as their energy source from the standpoint of energy security and economic efficiency.” However, in Bangladesh, the levelized cost of energy (LCOE) for solar PV is expected to be US\$91/MWh while coal-fired power generation costs US\$110/MWh on average¹⁹ – there is no economic rationality in building a new coal-fired power plant in Bangladesh. In addition, Matarbari Phase 1 is an expensive project with an LCOE of US\$160/MWh.²⁰

¹⁹ Kenji Shiraishi, etc. “Identifying High Priority Clean Energy Investment Opportunities for Bangladesh” (February 18, 2018)

²⁰ Institute for Energy Economics & Financial Analysis (IEEFA), “Bangladesh’s coal expansion plans stir criticism” (June 26, 2019)



- 4) **The actual reserve margin in Bangladesh consistently exceeds the targeted reserve margin until 2041, therefore there is low demand for building a new coal-fired power plant:** According to the Revisiting Power System Master Plan (PSMP) 2016 (published in November 2018) by the Ministry of Power, Energy and Mineral Resources, the actual reserve margin is anticipated to reach up to 69%, and the actual reserve margin in Bangladesh consistently exceeds the targeted reserve margin until 2041²¹; therefore, there is low demand for building a new large-scale coal-fired power plant at the moment.



According to a report released in January 2021 by the U.S.-based think tank, Institute for Energy Economics and Financial Analysis (IEEFA), Bangladesh's overall power capacity utilisation in the fiscal year 2019-2020 fell from 43% in the previous year to 40%,²² revealing the country's worsening overcapacity. IEEFA estimated that the capacity utilisation will fall below 40% over the next five years unless power generation growth is maintained at or above 10% per annum, and said that the construction of a new power plant will have

²¹ Ministry of Power, Energy & Mineral Resources, Revisiting PSMP 2016, November 2018. https://powerdivision.portal.gov.bd/sites/default/files/files/powerdivision.portal.gov.bd/page/4f81bf4d_1180_4c53_b27c_8fa0eb11e2c1/Revisiting%20PSMP2016%20%28full%20report%29_signed.pdf

²² Institute for Energy Economics & Financial Analysis (IEEFA), "Power Overcapacity Worsening in Bangladesh", (January 2021). https://ieefa.org/wp-content/uploads/2021/01/Power-Overcapacity-Worsening-in-Bangladesh_January-2021.pdf

significant impacts on the financial burden and cost of power generation of the Bangladesh Power Development Board.

- 5) **Building a new coal-fired power plant is not consistent with the Nationally Determined Contribution (NDC) of Bangladesh:** The government of Bangladesh established the Renewable Energy Policy in 2008, aiming to increase the ratio of renewable energy generation to 10% by 2020. This target was also set in NDC, which was submitted to the United Nations Secretariat in 2015. Although the Renewable Energy Policy requires to build capacity to generate about 2500MW of renewable energy, in reality, the current generation capacity is less than 330MW²³. Hence, building a new coal-fired power plant is not consistent with the climate change policy of Bangladesh.

Table 29: Achievements of Renewable Energy Projects

Technology	Off-grid (MW)	On-grid (MW)	Total (MW)
Solar	286.72	39.1	325.82
Wind	2	0.90	2.90
Biogas to Electricity	0.68	0	0.68
Biomass to Electricity	0.40	0	0.40
Total	289.80	40	329.80

Source: SREDA, November 2018.

- 6) **China ends support for coal-fired power generation in Bangladesh:** In February 2021, China’s embassy to Bangladesh informed the local Ministry of Finance in a letter that “the Chinese side shall no longer consider projects with high pollution and high energy consumption, such as coal mining [and] coal-fired power stations.”²⁴ At a press conference held by Japan’s Ministry of Environment last year, Environment Minister Shinjiro Koizumi stated in regards to the government’s 4 conditions for supporting exports of coal-fired power that if Japan won’t do it, then China will.²⁵ However, for Matarbari 2, the logic that “China will take over if Japan does not” is invalid.

²³ Ministry of Power, Energy & Mineral Resources, Revisiting PSMP 2016, November 2018. https://powerdivision.portal.gov.bd/sites/default/files/files/powerdivision.portal.gov.bd/page/4f81bf4d_1180_4c53_b27c_8fa0eb11e2c1/Revisiting%20PSMP2016%20%28full%20report%29_signed.pdf

²⁴ Shepherd, Christian. “China turns its back on Bangladesh BRI coal projects.” *Financial Times*. (March 11, 2021). <https://www.ft.com/content/30840645-58d2-4da5-be05-f476623677d2>

²⁵ <https://www.env.go.jp/annai/kaiken/r2/0121.html>