

2x660 MW Maitree Super Thermal Power Project

Frequently Asked Question

Q1: Is the plant location at safe distance from the Sundarbans and the World Heritage site?

A1: Yes, the project is located at a safe distance from the Sundarbans and the World Heritage site.

The proposed project location is approximately 14 km away from the nearest boundary of Sundarbans and about 65 km from the nearest world heritage site.

Q2: Will the Proposed Project result rise of local temperature due to heat radiation from the Chimney?

A2: The proposed project will not result in rise of local temperature due to heat radiation from the Chimney.

The temperature of the flue gas at the stack outlet would be around 60 °C as the wet lime stone based Flue Gas Desulphurization (FGD) system is envisaged in the flue gas path. Further, 275 mtr high Chimney is envisaged. Moreover, there is no topographical barrier of heat dispersion like mountain/hilly area, dense city, tallest building, etc within the 20 km of the plant location that may trap the heat and cause rise of local temperature.

Q3: Will the coal dust to be generated from coal stockyard be dispersed in nearby area and community?

A3: NoCoal dust will be dispersed in nearby area and community.

Following technical measures have been incorporated to achieve this:

- The entire Coal stock yard and coal conveying system will be covered.
- Plain water dust suppression system at stock pile and dry fog dust suppression system at feeding and discharge point of conveyor will also be provided which will further reduce the fugitive dust within covered conveyor gallery and transfer point.

Q4: Will the Coal dust to be generated during coal transportation pollute air quality of Sundarbans?

A4: No, the air quality of Sundarbans will not be polluted.

Coal transportation shall be done through environment friendly modern covered vessels.

Q5: Will the emitted ash from the power plant pollute air quality of Sundarbans and as well as nearby community?

A5: No, the air quality of Sundarbans and the nearby community shall not be polluted due to ash emission from the power plant.

First of all imported high GCV coal with low ash content will be used in the project for power generation. Highly efficient Electro Static Precipitator (ESP) of latest proven technology with 99.9% efficiency shall be used to limit Suspended Particulate Matter (SPM) emission in the flue gas, within the World Bank / IFC specified standard of 50mg/NM³(against local regulation for SPM 150 mg/NM³), at the outlet of the Chimney.

In addition to this, the Bottom ash generated from the project shall be collected and managed by an efficient and modern dry ash collection and management system to avoid effect on environment.

Further, arrangements are being made for 100% utilization of ash generated from the project. Hence, there is hardly any chance of fugitive / emitted ash from the project to get adversely affect environment.

Q6: Will the emission of SO_x and NO_x pollute the air quality of the Sundarbans as well as the nearby locality?

A6: No, the emission of SO_x and NO_x from the power plant shall not pollute the air quality of the Sundarbans as well as the nearby locality.

First of all, High GCV, very low sulphur content coal will be used in the project for power generation which will, ab-initio limit the SO_x production to a low quantum. Also, advanced low NO_x burners are being installed in the plant to reduce the NO_x generation to a lower level.

To further reduce SO_x in the flue gas to be emitted from the chimney, a modern wet-limestone based Flue Gas Desulphurization System (FGD) is being installed.

These measures will collectively reduce the SO_x and NO_x emission from the plant to low level and keep it within the stringent limits prescribed by World Bank / IFC Standard.

Q7: Is there any scope of utilizing ash in Bangladesh?

A7: Yes, there is huge scope of utilizing ash in Bangladesh in an environment friendly way, especially in the cement manufacturing, brick manufacturing and construction industries.

At present the cement companies import ash from nearby countries. Brick fields use soil for brick manufacturing. Supplying ash to these industries will not only ensure large scale utilization of ash in Bangladesh, it will help Bangladesh economy in multiple ways too.

BIFPCL floated an Expression of Interest (EOI) from cement industries in this regard and EOI received for more than 4 times of estimated ash production from 2x660 MW Maitree STPP. Hence, market survey also support the fact that 100% ash generated in the project shall easily be consumed in cement industries itself.

Q8: What would be contribution of the power plant in global warming?

A8: Global warming is a GLOBAL phenomenon and one project like this 2x660 MW Maitree STPP will hardly impact the global warming as a whole.

The increase in per capita carbon emission in Bangladesh on account of operating this 2x660 MW Maitree STPP which is based on modern ultra-super critical power plant is estimated to be miniscule.

Further, a green belt shall be developed within the plant boundary and in the vicinity by planting upto 5 lakh (half a million) trees, to create a carbon sink. BIFPCL has already signed an MOU with Forest Department, Govt. of Bangladesh, for implementation of Afforestation Programme, and implementation of the tree plantation program has long started.

Q9: Will the power plant release heavy metal?

A9: No, the power plant will not release heavy metal to impact the environment adversely.

The possible source of heavy metal could be coal. Concentration of heavy metal in coal being imported will be negligible.

Moreover, heavy metal like Hg will be absorbed in ash as normal phenomena which will be captured by highly efficient (99.9%) ESP and then managed for safe utilisation. And further, the wet limestone technology based FGD downstream will remove remaining reactive Hg from the flue gas before it gets emitted from the chimney.

Similarly modern dry bottom ash technology is being used for collection and management of bottom ash in environment friendly way.

Q10: Will the power plant cause Acid rain?

A10: No, due to very low emission of SO_x and NO_x and use of 275 Mtr tall chimney, there is no likelihood of this power plant causing acid rain.

First of all, low sulphur content coal shall be used for the project. Further, the plant will have FGD (Flue Gas Desulphurization) system which will remove SO_x (efficiency of FGD is more than 95%) from flue gas. 275 meters high chimney to further disperse the treated and cleansed flue gas to a wider range to further dilute and reduce the impact on the environment.

Q11: Is there any plan to fill or encroach the Maidara River and Passur River?

A11: No, there is no plan to fill or encroach the Maidara and Passur River.

Q12: Is there any plan to build coal silo / stockyard in Sundarbans / Akram Points?

A12: No, there is no plan to build coal silo / stockyard in any location of the Sundarbans/ Akram Point.

Coal will be transshipped directly from the mother vessel to the lighters in a closed / covered and environmentally benign way. The coal stockyard constructed at plant site shall be fully covered.

Q13: Will the coal transportation through Passur river cause damage to Sundarbans?

A13: No. EIA study has been conducted in this regard and it has been established that coal transportation through Passur river will not cause damage to Sundarbans.

Due consideration has been taken in designing the coal logistics and transportation methodology and systems pertaining to this project in an environment friendly manner.

Imported coal will be shipped through the existing maritime channel of Mongla Port Authority in Passur river. This is an established channel being used for many decades now for movement of ships / barges.

Daily requirement of coal is estimated to be 12000Ton. BIFPCL plans to use upto 12000Ton size modern sea-worthy vessel ("mini-ship"), tailor made with covered hatches as per IMO classifying norms, designed for zero effluent discharge, low SOx emission, low noise , low speed, night vision and GPS, with recessed lighting and no horn operation. This will obviate the possibility of pollution of Passur channel.

Coal will be transported through these environmental friendly Lighters ("mini ships") upto jetty. Further, these lighters will ply through a designated channel in a very wide river, under the guidance of Pilot boats with experienced Pilots of Mongla Port Authority for the entire stretch within the Passur river to eliminate the possibility of any accident (aground / collision etc.).

Q14: Will there be any discharge of heated water from the plant?

A14: No, heated water from the plant shall not be discharged in the river.

A closed cycle cooling water system with cooling towers is envisaged and only a miniscule quantum of water (less than 0.05% of the leanest flow of the river during lean season) shall be drawn from the river as make-up water. The cooling water, after circulation in the plant shall be cooled in cooling towers and will be reused. After repeated recirculation some part of the recirculating water, after cooling shall be taken out of the closed system and sent back to the river.

Temperature of this water shall never be more than two degree Centigrade (2°C) above the river water temperature at the edge of mixing zone which is as per stringent IFC norms.

Q15: Will the project cause water pollution in the Passur River?

A15: A closed cycle cooling water system with cooling towers is envisaged which means there will be no thermal pollution. Further, effluent water of the project shall be thoroughly treated in Effluent Treatment plant (ETP) within the project, before it goes to the Central Monitoring Basin. The quality of treated effluents will be monitored at this central monitoring basin to ensure that the negligible quantum of water (as compared to the water volume in the Passur river) goes to the river complying all the environment norms.

Hence, there will be no pollution in the river.

Q16: Will there be any Black smog over the atmosphere of locality and the Sundarbans?

A16: No, there will not be any formation of black smog over the atmosphere of locality and the Sundarbans.

- ✓ The project is designed to satisfy emission standards as contained in the stringent IFC/WB standard.
- ✓ The flue gas will be emitted from the stack of 275m height to avoid the atmospheric layer of thermal inversion. Hence the chances of formation of black smog is negligible.
- ✓ There is no topographical barrier like hills, dense city, etc in and around the project location that may trap air pollutants.
- ✓ The project area is prone to high velocity wind which helps in wider dispersion of the flue coming out of the chimney at that height and also helps in scavenging. Cyclone and depression (common in the region) hinder long term trapping of the air pollutants.

Q17: Will the electricity to be produced from the power plant (proposed) be exported to India?

A17: No, the electricity produced from the power plant shall not be exported to India. The entire electricity generated from Maitree STPP will be off-taken by Bangladesh Power Development Board and used in Bangladesh only.

Q18: What would be the share of NTPC, India in the proposed Power Plant?

A18: The proposed power plant (Maitree STPP) is being developed by Bangladesh-India Friendship Power Company (BIFPCL). This is a Bangladeshi company and is incorporated in Dhaka. BIFPCL has been co-promoted by BPDB of Bangladesh and NTPC Ltd. of India with equal (50:50) equity investment.

Q19: Who (Bangladesh or India) will operate the Power Plant?

A19: BIFPCL will operate the power plant.

Q20: Will the top most and important positions of the management be reserved for India / NTPC?

A20: No, it is not correct that the top most and important positions of the management will be reserved for India / NTPC.

BIFPCL is a Bangladeshi company incorporated in Dhaka. The current Chairman of the Company is the Secretary (Power Division), Govt. of Bangladesh. The MD is a professional on deputation from NTPC Ltd. Rest of the Board members have been inducted ensuring equal representation from BPDB of Bangladesh and NTPC of India, in conformity with their equal (50:50) equity ownership of this Joint Venture Company.

Most of the officers / managerial staff will be recruited in Bangladesh and will be selected based on their experience and qualification in the relevant area.

Q21: Who will pay back the loan to be used for the proposed Power Plant?

A21: As the loan is issued to BIFPCL for the construction of the proposed 2x660W Maitree Power Plant Project, BIFPCL will pay back the loan.

Q22: Will there be any employment opportunity of local people and affected people in the project construction and operation?

A22: Yes, there will be employment opportunity of local people and affected people in the project construction and operation period.

As this region is underdeveloped, opportunity of trade and employment is very limited. Besides direct employment in BIFPCL, there will also be a huge opportunity to the local people for business and other indirect employment opportunities.

Moreover, electricity generation being a mother industry, this Power plant will usher in economic growth in that locality in particular and the country in general, creating many downstream / related industries. This will give impetus to growth and generate employment opportunities for the people of Bangladesh.

Q23: Will the produced power be supplied to the locality?

A23: Power generated from the project will be fed to the grid and the further distribution will be done by Govt. of Bangladesh. This power will be used as base load station for Bangladesh and help the Govt. achieve its target of "electricity for all" by 2021. This will automatically ensure electricity supply to the locality.

Q24: Will the company take any social welfare activities program?

A24: Yes, the company will take many social welfare activities/ programs for the local people and community.

Despite the fact that the Company is yet to start generation, BIFPCL has already taken up several CSR related activities like:

- Free Medical facility to local people.
- Recognition and Encouragement to Local meritorious students.
- Vocational training for local women for empowerment.
- Computer training to local youth for employability etc.

Moreover, GoB has already declared to develop a Social welfare fund for the benefit of local people by way of imposing CESS @ 3 Paise per unit of power generation from the Power Plant. This is expected to create a kitty with annual fund injection of the order of approximately BDT 30 Crore (i.e. BDT 300 Million). BIFPCL shall take up different social welfare activities for the local people from this fund, in consultation with GoB.

Q25: Public consultation meeting is being conducted after commencing the construction work?

A25: Public disclosure and consultation was also done in line with DoE stipulations at the time of EIA approval process.

Major construction activity for the project is yet to commence. Presently activities of initial infrastructure are in progress. Public consultation meetings have been/ are being organized at site from time to time after the commencement of initial infrastructure activities at site.

Q26: The project is located in prime land of capture fish. The plant will destroy the capture fish of the area.

A26: No, the plant will not destroy the capture fish of that area.

No fresh water fish pond existed within the project boundary and only few creeks for shrimp farming were occupied.

The project location was finalized after due study of alternative sites and this site was found to be the most suitable. Land for the project was acquired by Govt. of Bangladesh on behalf of BPDB as per the extant rules.

Q27: The project will destroy the Sundarbans that took ages to grow.

A27: No, the project shall not destroy the Sundarbans as perceived.

While carrying out the Initial Environment Examination (IEE) and Environmental Impact Assessment (EIA) study of the project, effect on Sundarbans was especially kept under special consideration. BIFPCL is fully aware of the significance of Sundarbans and its World Heritage Site and committed to provide an environment friendly solution in order to add 1320MW electricity to the grid for the people of Bangladesh without causing any adverse effect on Sundarbans.

To ensure that, the project would have a "State of the Art" Technology that includes, Ultra Super Critical boiler technology, FGD unit for SO_x control, advanced Low NO_x burner, highly efficient ESP for Particulate Matter emission control, closed cycle cooling water system to minimize water consumption and to prevent thermal pollution, ETP to prevent water pollution. The plant has been designed to meet the emission standards prescribed in World Bank/IFC guideline which is most stringent.

More over the predominant wind flow direction acts as a natural shield for Sundarbans.

In addition, there would be plantation of upto 5.0 lac trees, regular environmental monitoring, continuous research and development.

The major cause for shrinkage of Sundarbans has been the human interference due to dependence of poor people on the forest for livelihood. Rampal project would certainly create high growth opportunities and shall reduce dependence on Sundarbans for livelihood.

Rampal project would create high growth opportunities in the region and shall reduce dependence on Sundarbans for livelihood.

Q28: Environmental effect on Sundarbans during operation of the plant has not been mentioned in EIA.

A28: No, all possible impacts have been identified and projected in the EIA for Pre-Construction, Construction and Post-Construction/Operational period. The environmental effects during operation of the plant and EMP measures have been outlined in Chapter 10 (Mitigation of impact) of the EIA report which is already available in the BIFPCL website.

Q29: The Proposed Power Plant would ruin the bio-diversity of Sundarbans.

A29: No, the project will have no adverse effect on the Biodiversity of Sundarbans and its World Heritage Site. Extensive studies, surveys and researches have been performed regarding the bio-diversity of Sundarbans to identify all possible impacts that might occur. Accordingly, there are Mitigation Measures as well as Environmental Management Plan (EMP) suggested in the EIA report to prevent the bio-diversity of Sundarbans from any harm as the outcome of those extensive studies. All mitigation measures and EMP provided in the EIA report shall be implemented properly in all phases of the project.

The project will have no adverse effect on the Biodiversity of Sundarbans. The Environmental Management Plan (EMP) as provided in the EIA report shall be implemented properly in all phases of the project.

Q30: Land of the minority people has been acquired.

A30: No, there has not been any deficit caused to the minority people regarding land acquisition. The entire acquired land is vacant low land, mostly used for shrimp farming.

Moreover, the project location was finalized after due study of alternative sites and this site was found to be most suitable. Land for the project was acquired by Govt. of Bangladesh on behalf of BPDB as per the extant rules.

Q31: Project site has been selected before approval of EIA.

A31: As per the law of Bangladesh, a proponent should get land acquired or owned before getting EIA approval from DoE. EIA approval needed for starting of construction activities of a project. Therefore as per the extant rules of GoB the site was identified and Initial Environment Examination (IEE) Study was carried out. Application for site clearance certificate alongwith IEE was submitted to DoE and Site/Location clearance certificate was issued by DoE on 23.05.2011 upon evaluation of alternative sites reported in IEE.

Q32: Less negative effect of the Power plant on Sundarbans has been shown in EIA study.

A32: The EIA study has been conducted following the ToR approved by DoE. Extensive studies, surveys and researches have been performed regarding to identify all possible impacts that might occur due to this project. The approach and methodology adopted for this study complies with the DoE and World Bank / IFC guidelines of Environmental Impact Assessment. EIA includes

comprehensive study with detail investigation as per the procedure defined in ECR 1997. The international standardized multidisciplinary approaches & tools and techniques of Physical, Water resources, Agriculture, Land and soil, Fisheries, Ecology and Socio-economic surveys and investigation were adopted. Based on the above scientific study, effect of the plant on Sundarbans has been found to be minimal.

Q33: It is planned to construct 2600 MW Power Plant at Rampal. But the EIA study has been carried out for 1320 MW?

A33: GoB has planned to set up a 1320 MW coal based thermal power plant in phase-I at Rampal. Therefore, EIA study has been carried out for 1320 MW STPP. At present there is no proposal to set up any additional thermal power plant at Rampal.

Q34: Sound effects of the Construction equipment, machineries and vehicles have not been considered.

A34: All the potential sources of noise during pre-construction, construction and operation stages have been identified in the EIA report. These have been considered and are presented in the EIA report with impacts and EMP during construction period. The project's planted greenbelt and boundary wall will act as noise barrier as well. All the equipment inside the plant area shall operate within the specified sound level meeting the environmental norms.

Q35: During Cyclonic weather, wind may flow in any direction. At that time and during winter flue gas from the Power Plant will destroy the Sundarbans.

A35: No, Sundarbans will not be harmed by any means due to the emission from the project at any season.

Firstly, BIFPCL will use imported coal having High Gross Caloric Value (GCV), very low sulphur content, in the project for power generation which will limit the SO_x production to a low quantum at source. Also, advanced low NO_x burners are being installed in the plant to reduce the NO_x generation to a substantially lower level.

Keeping the negative impact upon Sundarbans in consideration, for further reduction of SO_x in the flue gas to be emitted from the chimney, a modern wet-limestone based Flue Gas Desulphurization System (FGD) is being installed.

Moreover, during Cyclonic weather the emitted flue gas will be quickly dispersed due to high speed and turbulence of wind. The nearest tip of Sundarbans is at 14 Km Southeast of the plant stack. During winter air flows from North to south. However, due to 275 M high Chimney, flue gas will disseminate before reaching Sundarbans. Therefore, the proposed project should not pose any threats as to destruction of the Sundarbans.

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- Q36: The Passur and the Sibsra Rivers carry the nutrients for the plants and animals of Sundarbans. But due to withdrawal of huge amount of water from the Passur River by the proposed power plant nutrients would be trapped at the upstream of the river and consequently, Sundarbans would be deprived from valuable nutrients. As a result Sundarbans would be destroyed.
- A36: A closed cycle cooling water system has been envisaged for the project which would minimize the water requirement. Approximately 0.05% of the lean period flow of the Pussur River would be withdrawn by the proposed power plant (2.5 m³/sec of available 6000 m³/sec). Keeping in view the small quantity of intake water, trapping of nutrients at upstream of river as apprehended would not be there and Sundarbans would not be deprived of valuable nutrients. Moreover Pussuris a tidal river.
- Q37: Salt free water will be used after removal of salt in the proposed Rampal Project. However, the process of removal of salt is costly. It is questionable whether there will be enough arrangement to remove salt from water.
- A37: Desalination plant is a prerequisite for any thermal power plants. Saline water cannot be used as cooling water as the primary effect of salt water is to increase corrosion rates of metal in the cooling tower and cooling system. It also decreases thermal performance. Therefore, there is provision for Reverse osmosis as well as De-mineralization plant in our specification and it would be implemented to meet project requirements. This is a proven technology and is being used worldwide for ages.
- Q38: Fly ash contains toxic heavy minerals like Arsenic, Lead, Mercury, Vanadium, Selenium, Beryllium, Cadmium, Radium etc. These minerals will contaminate the soil and ground water by leaching.

A38: The BIFPCL will use imported coal with high GCV, low ash, low Sulphur content. The concentration of toxic minerals / metals in coal is minimal and are present as trace elements. High efficiency ESP (for capturing of Fly ash), modern dry bottom ash handling and collection technology is being implemented. The ash (both bottom ash and fly ash) will be collected in dry form. Fly ash will be pneumatically conveyed from ESP hopper through conveying pipeline. Bottom ash will be conveyed through closed pipe conveyer from dry bottom ash system at boiler area. The entire ash will thereafter be collected in closed silo fitted with bag filter and unloaded to closed truck/ closed barges through pneumatic conveying pipe for further transportation to ash utility industry.

In case when 100% ash will not be utilized, provision of discharge of ash to contingency ash pond (developed with properly designed impermeable layers to prevent leaching / seepage) through High concentration slurry disposal system is there. The settled high concentrated slurry shall convert to ash stone thus creating an impervious layer in the ash pond. Hence there will be zero water leakage to surface and ground water system and Hazardous components shall remain embedded.

Therefore there is no scope of contamination of heavy metal into the ground water.

Q39: Due to movement of Vehicle and during operation of the plant, noise will be produced. Moreover, during unloading and transporting of coal noise would also be created. Would the green belt be able to mitigate noise pollution?

A39: Yes, the green belt be able to mitigate noise pollution. All the equipment inside the plant area shall operate within the specified sound level meeting the environmental norms and the Green belt will further assist in preventing the spread of the noise beyond the plant boundary. Additionally the project has been designed to meet/better IFC guidelines with respect to the noise generated from all possible sources. As far as noise pollution due to coal unloading/transportation is concerned, BIFPCL shall be using vessels complying to IMO norms which shall be of low noise type.

Q40: Aerosol dispersed from the Cooling tower is favorable for growth of bacteria causing pneumonia of the local people.

A40: Cooling Tower shall be equipped with mist eliminator which will arrest aerosol from the Cooling Tower. Thus there will be no scope for bacterial infection and hence it will not cause pneumonia to the local people.

Q41: Due to lighterage of coal at Akram point, water and air of Sundarbans will be polluted.

A41: No, Sundarbans will not be harmed due to the transportation of coal.

The trans-shipment of Coal will be done by environment friendly Floating Transfer Station (FTS), which will have anti spillage plate, dust suppression system, covered conveyer belt as inbuilt mitigation measures. So chances of water and air pollution are very remote.

Q42: Wave created by the coal carrying ships will erode the river bank.

A42: No, the effect of few coal carrying ships on the river bank is fairly insignificant.

Coal will be transported through the existing Maritime route of Mongla port, which is being used for decades and the vessels plying through MPA route shall follow all the rules as stipulated by MPA. On an average only one coal carrying vessel shall ply across the River Passur per day.

Keeping into consideration, the number of vessels plying across the Passur channel at present, impact due to Rampal project will be very insignificant.

Q43: Search Light of the Ship will disturb the wild animals of Sundarbans.

A43: As per the daily requirement of coal BIFPCL plans to use on an average one number of modern sea-worthy vessel ("mini-ship"), tailor made as per IMO classifying norms, environmental friendly and designed for zero effluent discharge, low SOx emission, low noise pollution, night vision and GPS. Coal will be transported through the existing Maritime route of Mongla port, which is being used for decades and the vessels plying through MPA route shall follow all the rules as stipulated by MPA. Hence there will be negligible impact on the wild life of Sundarbans.

Q44: People are very concerned on the cost of production of electricity at Rampal. If all suggested EMP is implemented cost would go up which may not be affordable to the people.

A44: BIFPCL is committed to provide reliable, environment friendly and affordable power to the people of Bangladesh.

Modern technology/equipment are being used to make this project safe & Environment friendly and the cost of these measures have been included in the

EPC contract. Approximately, 70-80% of the project cost will be covered through a long term loan with very low spread, from Indian bank.

Financial analysis of the project has been carried out taking the aforementioned aspects as well as the EMP into account. It has been found that the project is not only economically viable, it is going to be one of the cheapest power plant of its kind in Bangladesh and hence will be consistent with the objective of generating affordable power.

Q45: There is no firm commitment that the EMP would be implemented. There must be a strong monitoring team comprising of concerned authorities, civil society and local representatives.

A45: Implementations of EMP would be the key for successful implementation and operation of the Rampal Thermal Power plant. BIFPCL being a responsible organization is committed for implementation of EMP.

There would be an international External Monitoring Agency (supported by government enforcement agencies and reputed international organization) to carry out independent monitoring and auditing of implementation of EMP. The agency will have both national and international environmental experts, representatives from DOE, Forest Department, MPA, two international environmental organization and shall carryout intermittent third party monitoring and auditing of the project. They will also carry out annual third party auditing of EMP and make further modifications, if required.