

COUNCIL ON ETHICS

THE GOVERNMENT PENSION FUND GLOBAL

To Norges Bank

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**Recommendation to exclude Bharat Heavy Electricals Limited from the
Government Pension Fund Global**

Summary

The Council on Ethics recommends the exclusion of Bharat Heavy Electricals Ltd (BHEL) from the Government Pension Fund Global (GPF) due to the unacceptable risk of the company being responsible for severe environmental damage through its operations in Khulna, Bangladesh.

BHEL has been awarded a contract to build a large coal-fired power plant in southern Bangladesh. The power plant is to be built close to the boundary of the Sundarbans national conservation area, the world's largest mangrove forest. The entire area is also a Ramsar area. It is rich in biodiversity and contains several protected species, including Bengal tigers and river dolphins. The conservation area also encompasses two world heritage sites in Bangladesh, as well as a further world heritage site on the Indian side of the border.

Two factors mean that the project carries a substantial risk of environmental damage. Transport to the power plant during the construction phase will mainly be by boat through the Sundarbans. The sailing route to the anchorage site passes very close to the boundary of a world heritage site. Transshipment and transport operations will raise the risk of mishaps and accidents involving emissions/discharges very close to vulnerable areas, and this risk is a direct consequence of the power plant and its location.

Another risk is linked to the fact that huge river-bed and seabed areas will be dredged. When large volumes are removed from the riverbed or dumped, the volume of particles transported by the currents increases substantially. There is a great risk that this activity may place further strain on the already endangered mangrove forest and life in the river and appurtenant marine areas, which are also important to the local population. At the same time, the river-bed conditions will change in protected areas for endangered river dolphins.

The Council on Ethics initially contacted BHEL on 19 May 2016. The company did not reply to the Council's inquiries initially, but has later submitted comments to a draft recommendation. The company states in the comments that there is no need to dredge the waterways.

The Council considers it highly unlikely that a coal-fired power plant can be built at this location without the construction work itself constituting a high risk of severe environmental damage, even if extensive new measures are implemented. In the present case, the company has also failed to sufficiently assess what needs to be done to protect the environment. Further, various transportation factors have not been addressed and handled satisfactorily. Overall, this indicates a significantly increased risk of unwanted incidents in a unique, highly vulnerable area. The Council has also given considerable weight to the strong concern expressed by UNESCO regarding the risks associated with the project and the fact that the IFC recommendations for such situations have not been followed. Unesco has reviewed the project again in 2016 and calls for its cancellation or relocation.

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1 Introduction

The Council on Ethics (Council) of the Government Pension Fund Global (GPF) has assessed whether there is an unacceptable risk of Bharat Heavy Electricals Limited¹ (BHEL) contributing to severe environmental damage by building a coal-fired power plant in Rampal, Bangladesh.

At the end of 2015, the GPF owned shares in the company worth NOK 113 million, corresponding to an ownership interest of 0.2 per cent.

BHEL is a partly state-owned company listed on the New Delhi stock exchange, and has slightly less than 50000 employees. The company is producing heavy electrical equipment, including different types of power plants, and transmission and transportation systems.

In 2014, the Council recommended excluding National Thermal Power Company (NTPC) due to the same project.

1.1 What the Council has considered

The Council has considered whether there is an unacceptable risk of BHEL being responsible for severe environmental damage or of contributing to this contrary to section 3(c) of the Ethical Guidelines.²

In other cases where the Council has considered exclusion under this criterion, it has based its decision on whether:

- the damage is significant,
- the damage has irreversible or long-term effects,
- the damage has a considerable negative impact on human life and health,
- the damage is a result of violations of national laws or international norms,
- the company has failed to act to prevent damage,
- the company has implemented adequate measures to rectify the damage, and
- it is probable that the company's unacceptable practice will continue

The Ethical Guidelines state that material weight shall be given to the risk of future damage. This recommendation concerns future risks associated with the construction phase. Building work has started, while ordinary operations are stated to begin in 2018.

The coal-fired power plant is being built in a unique and vulnerable natural area. Transport to the plant during the construction phase will be by boat through this area. The Council has therefore also examined the impact of transportation and other activities occurring outside the construction site. These activities will be carried out by other companies to some degree. The Council has therefore also considered whether BHEL may be held responsible for these activities.

¹ Issuer ID: 169558

² http://etikkradet.no/files/2017/04/Etikkradet_Guidelines-_eng_2017_web.pdf

1.2 Sources

In addition to open sources, this recommendation is largely based on two analyses conducted for the project:

- *"Final Report on Environmental Impact Assessment of 2x(500-660) MW Coal Based Thermal Power Plant to be Constructed at the Location of Khulna"* prepared by the Center for Environmental and Geographic Information Services (CEGIS) in January 2013.
- *"Final Report On Consulting Services on Coal Sourcing, Transportation and Handling of (2x660) MW Coal Based Thermal Power Plants at Chittagong and Khulna, and 8320 MW LNG and Coal Based at Maheshkhali"* prepared by CEGIS in November 2012. ("The transport analysis")

Both reports were commissioned by the *Bangladesh Power Development Board*. As described below, the Bangladesh Power Development Board is one of the two *joint venture* partners that own the power plant.

The first report is an environmental impact assessment (EIA) which has been approved by the Bangladeshi environmental authorities and forms the basis for the necessary permits.

2 Background

BHEL, an Indian company, has been awarded a turnkey contract to build a 1,320MW coal-fired power plant with two lines in Rampal in the Khulna district of Bangladesh. This contract was awarded by NTPC and the *Bangladesh Power Development Board*, which have a *joint venture* agreement regarding the power plant.

The power plant is to be established close to the Sundarbans conservation area. There are various estimates of the power plant's distance from the conservation area. The project owner says it lies 14km from the forest edge, while other sources say it is 5-9km from where the forest edge was when the Sundarbans national conservation area was established. According to Bangladeshi national legislation, no such plants may be built less than 10km from forests. The corresponding requirement in India, where both NTPC and BHEL are registered, is 25km.

There is a severe power shortage in Bangladesh. The agreement linked to the creation of this project nevertheless states that a lot of the electricity generated is to be delivered to the Indian grid.

2.1 Mangrove forests

Mangrove forests are hydrobiological systems of the intertidal zone which connects land and marine environments. Mangrove forests are declining markedly worldwide and are thought to be shrinking more quickly than rainforests. They are characterised by numerous species of mangrove trees and bushes that have a high salt tolerance and complex interdependencies with many other species. Mangrove forests are ordinarily highly productive.

Mangrove forest vegetation is extremely specialised. Not only does it have to tolerate very high salinity, but its roots also normally grow in mud containing almost no oxygen. As a result, mangrove trees often have special aerial roots that reach up into the air at low tide, or air is absorbed by special pores in the tree's bark.

Mangrove forests bind river-carried mud to vegetation, creating new land. Accordingly, mangrove forests are not as old and stable as, for example, rainforests, but they are dynamic and vulnerable to external influences.

Mangrove forests offer good hiding places and an excellent growth substrate for numerous species, and transport easily accessible nutrients from land to marine environments. A very large number of specialised microorganisms ensure the conversion of nutrient-rich and frequently oxygen-poor mud into a form that is more accessible for organisms higher up the food chain. This makes mangrove forests a vitally important spawning and development environment, with a high density of many marine species. Such forests are also home to many plants and animals with specialised modes of living.

Bangladesh has a population of approximately 160 million people, living on an area one-third the size of Norway. It faces one of the world's highest flood risks, and primarily comprises mud deposits made by three large rivers on their way from the Himalayas to the sea. Bangladesh suffers flooding and cyclones, which at times flood more than half the country. The mangrove belt between land areas and the sea plays a critical role in limiting erosion by the sea, in slowing storm surges, and in bonding mud from rivers to expand the land area.

The EIA refers to research documenting that the temperature of the sea off Bangladesh has increased. The sea temperature is directly linked to the occurrence of tropical hurricanes. At the same time, the number of serious cyclones has increased although the total number of cyclones has not. The height of storm surges is expected to rise materially in the years to come even if the sea level does not.

2.2 The Sundarbans

According to the IUCN³, the Sundarbans is the world's largest mangrove area and largest Bengal tiger habitat, as well as the only mangrove area in which tigers are found.⁴

Bangladesh has two world heritage sites⁵ in the southern part of the Sundarbans. The entire Sundarbans has been designated a Ramsar⁶ and Biosphere⁷ area and is also a national conservation area in Bangladesh. Approximately one-third of the Sundarbans lies in India and contains a third world heritage site. The entire Indian part of the mangrove forest is a Biosphere area.

³ International Union for the Conservation of Nature. IUCN is a membership Union uniquely composed of both government and civil society organisations.

⁴ <http://whc.unesco.org/en/list/798>

⁵ World heritage sites are the most unique and valuable conservation areas of importance to humanity and are recognised and listed by UNESCO.

⁶ A Ramsar area is an area of wetlands protected under the Ramsar Convention due to its unique natural value.

⁷ "Man and the Biosphere" is a UNESCO protection programme for areas of unique natural conservation value. Some human activity is permitted in these areas, provided it is adapted to the area's character and conservation needs.

The area has high biodiversity and is ecologically very special. It also constitutes a habitat for the only two remaining river dolphins in Asia – the Ganges dolphin and Irrawaddy dolphin. Both species are classified as globally endangered. The Bengal authorities have established several conservation areas for these whales, including in the part of the Pashur River along which transportation to the power plant is to occur.

UNESCO evaluated the overall situation in the Sundarbans in its 2014 review of world heritage sites.⁹ The review was highly critical of the power plant, stating that its construction was of direct relevance to the world heritage site. The review identified transportation and dredging as problematic, expressed strong concern about the establishment of new settlements in the area as a consequence of the power plant, and criticised the weaknesses in or lack of impact assessments.

The UNESCO World Heritage Committee described the situation relating to the world heritage site as follows in its review:

"4. Notes with concern that the indirect impacts on the property of the construction of a coal fired power plant at Khulna do not appear to have been assessed, considers that increased navigation on the Pashur River and the required dredging are likely to have a significant adverse impact on the property's Outstanding Universal Value (OUV)..." ¹⁰

«The Committee is recommended to regret that the State Party did not submit a report on the state of conservation of the property as per Decision 35 COM 7B.11 and to express its concern about the construction of the coal-fired power plant in Khulna (Rampal). IUCN considers that the EIA of the power plant, published in January 2013, did not adequately consider potential impacts of the plant on the property's OUV. While the State Party has responded that the Sundarbans as a whole including the property were considered in the EIA, an assessment of the specific impact on the property's OUV should nonetheless have been carried out, in conformity with IUCN's World Heritage Advice Note on Environmental Assessment.

*Furthermore, while the power plant will be located about 65km away from the property and local air and water pollution can potentially be mitigated sufficiently, the dredging of the Pashur River to facilitate the transport of coal to the plant, as well as the coal dust released into the environment during transport and transfer, are likely to adversely impact the property. The EIA for the plant does not consider the impact of dredging in the rivers adjacent to the property. Only limited consideration has been given to the transport and transfer of coal in close distance to the property and no mitigation efforts beyond already existing regulations are known. The dredging necessary to keep the channels of the Pashur River open for navigation is likely to alter the morphology of the river channels, which, in combination with erosion and sedimentation caused by the wakes of large vessels, would be likely to affect priority habitat for freshwater dolphins and other aquatic species, such as the critically endangered Batagur turtle (*Batagur baska*) and vulnerable small clawed otter (*Aonyx cinerea*). Coal dust released into the environment during transport and transfer is likely to have a significant direct adverse impact on mangroves, fish, and probably freshwater dolphins, amongst other endangered species.*

While the State Party notes that an EIA for the dredging activities will be carried out before these will start and that experts from the World Heritage Centre and IUCN will be able to contribute to this process, the impacts of dredging should have been included in the EIA for

⁸ EIA, page 259

⁹ http://whc.unesco.org/archive/2014/whc_14-38com-7B-Add-en.pdf

¹⁰ <http://whc.unesco.org/en/decisions/6050/>

the power plant, given that dredging to keep the rivers open for navigation is directly linked to the feasibility of the power plant. There is concern that indirect and cumulative impacts from the power plant, related activities to facilitate navigation, and other infrastructure and industrial developments do not appear to have been assessed. Therefore, the Committee is recommended to request the State Party to undertake a comprehensive Strategic Environmental Assessment (SEA) of development in the Sundarbans and its immediate vicinity, including a specific assessment of potential impacts on the OUV of the property, in conformity with IUCN's World Heritage Advice Note on Environmental Assessment."

In March 2016 Unesco performed a "reactive Monitoring Mission" One of their main conclusions is "...it is recommended that the Rampal power plant project is cancelled and relocated to a more suitable location..."¹¹

The area is not only associated with substantial conservation values, but is also highly important to the local population, which meets two-thirds of its animal protein needs by fishing in the river system.

The project's EIA shows there is also large biodiversity in the plant's immediate area of influence ("Study area", within a radius of approx. 10km), with a large number of plants and animals – for instance, more than 150 species of birds were registered in the impact assessment. The area of influence defined in the assessment mainly lies outside the forest area in the Sundarbans. The biodiversity in the Sundarbans is considerably higher. However, there are a number of species in the area of influence too that are listed as being endangered or critically endangered, including the tiger, Ganges dolphin, fishing cat and several species of turtles¹².

As a result of human activity, the Sundarbans mangrove area has shrunk by approximately two-thirds in the past 150–200 years. This has particularly impacted animal species that require large habitats, such as tigers and river dolphins, and reduced the area's flood protection.

It is estimated that around 200,000 people regularly harvest different resources in the Sundarbans, and around 70 per cent of these harvest food resources from the rivers.

Inland and coastal fish stocks are declining and the World Bank has stated that the primary threat to stocks is human activity which disrupts and destroys fish habitats¹³.

3 Environmental risk resulting from the company's activities

There are two factors which create a considerable risk of environmental damage during the construction phase; the dredging itself and the river transportation of input factors and parts for building the power plant. During the operations phase, there will also be risks linked to emissions/discharges and the handling of ash, refer to the recommendation to exclude NTPC.

The construction work and transportation of coal to the finished power plant have been examined in two impact assessments that provide a lot of factual information. The project and reports have also been widely criticised on various websites. The Council has primarily taken its figures from these two impact assessments, and also based its risk specifications on them to some degree. In addition, the Council has used information from UNESCO on the status of

¹¹ <http://whc.unesco.org/en/documents/148097>

¹² EIA, app. sXI

¹³ World Bank: Bangladesh Environmental Analysis, 2006

the conservation areas, as well as information from the International Finance Corporation (IFC) concerning expectations for the company with regard to biodiversity.

The Council believes that CEGIS is now in the process of preparing an environmental-risk analysis for the freight part, but this has not been confirmed. The Council assumes that the need for dredging, and therefore the risk linked to this, will be the same during the construction phase and operations phase. It is correspondingly assumed that the risks described for the transport of coal are the same for the transport of other goods by boat to the construction site.

3.1 Location

The plant is situated around 70km from the coast, on the eastern bank of the River Pashur, north of the city of Mongla.

The transport route passes through the Sundarbans, between the world heritage sites, and touches the boundary of the western world heritage site. The entire transport route up to just south of Mongla is within the Ramsar area.

The power plant site lies in what is called the "wind risk zone of Bangladesh"¹⁴, and is subject to cyclones and storm surges. General figures for high-water incidents during cyclones show that the water level along the coast has risen by more than eight metres on at least three occasions since 1960¹⁵. Not least due to the reducing effect of the mangrove forest, the flood level is lower in inland areas.

The entire river course up to the plant site is affected by tidewater and has high salinity.



¹⁴ EIA chapter 6.10, map 6.15.

¹⁵ EIA tab. 6.13.

The river courses in a mangrove forest change and are vulnerable to erosion. A large increase in shipping traffic and extensive dredging will necessarily alter the erosion pattern.

On 29 January 2012, parts of the Pashur River along which transportation is to occur were officially declared a “*dolphin sanctuary*”. The environmental impact assessment (EIA) specified four “*Important Dolphin areas along the coal transportation route*”, one of which is the transshipment area at Akram Point, while the other three are located higher up the river system.¹⁶

The EIA also stated that globally endangered freshwater dolphins and other endangered species live in the Pashur River system, “...and hence it is important that utmost care and stringent conditions be laid down for the safety and sustenance of this unique ecosystem...”¹⁷

3.2 Transport and dredging

Most of the cargo will be transported by boat and, in those cases where large ships are used, it must be transferred to smaller vessels along the way. Some of this transportation has to occur along the border of the world heritage site, and the planned anchorage area for transshipment lies just a few kilometres upstream of the world heritage site.

For the coal transport during the operations phase, it is planned to establish an anchorage area at Akram Point where coal is to be transferred to smaller boats. This will probably also apply to anything else that is to be transported during the construction phase.

These transport operations will necessitate extensive dredging of the river and in the anchorage area, and will mean substantial traffic involving large vessels. The development of an anchorage area at Akram Point entails the planned dredging of 30 million cubic metres of fill. This corresponds approximately to a volume measuring 200 football fields, 30 metres deep. In addition, the EIA points out the need to dredge parts of the river course leading up to the power plant¹⁸, i.e. the dredging of approximately 2.1 million cubic metres in the upper part (approximately 16km) of the river.

When a river is dredged, the volume of mud it carries increases greatly due to the agitation of light riverbed sediments. It is known that dredging can cause acidification and altered water chemistry due to the almost oxygen-free content of these sediments.¹⁹ The riverbed conditions already impose such a strain on plants that most mangrove species compensate by absorbing oxygen directly through pores in the bark and aerial roots. These trees are adapted to the normal level of mud transportation, and are vulnerable to mud build-up in the intertidal zone in the event of increased mud transportation.

Dredging also changes the depth, riverbed conditions, current, lighting and access to hiding places for the organisms that live in the water. These are very important factors for dolphins' wellbeing and survival. The Council understands that there will be annual dredging activity in the stretch of river, including in the dolphin conservation area.

¹⁶ EIA, map 6.18, p 208

¹⁷ EIA, p 207

¹⁸ EIA, p. ix

¹⁹ Refer, for example, to <http://www.ajol.info/index.php/ijonas/article/view/49863>

3.3 Acute pollution contingency plans

Accidents occur in all shipping operations, particularly in coastal waters subject to rapid changes in weather conditions and narrow waterways with challenging navigational conditions. The shipping lane leading to the power plant is narrow and features shifting sandbanks and currents which vary in accordance with the rate of flow and tides. Even minor navigational errors, poor communication with other vessels or brief technical problems may cause an accident.

Commercial shipping currently docks at the port of Mongla near the power plant. This is the only port of notable size in the area. Based on information on the local port authority's website, less than one ship per day passed through the area on randomly selected days in the spring of 2014. The EIA pointed out that 153 vessels docked in the port in the period 2010–2011, and that currently 1.6 million tonnes pass through the port every year. The risk and consequences of an accident will increase during the construction period in that the vessels that are to transport equipment to the plant will be much bigger than those which normally traffic the river.

The EIA contains a brief chapter on measures to control the impact at ecosystem level in the “Environmental Management Plan”, but does not mention unexpected incidents such as shipwrecks. Accordingly, no measures are proposed beyond the enforcement of existing rules. The assessment splits responsibility for following up these points between various official bodies and companies, but does not refer to the company’s responsibility specifically, or state whether any party is responsible for coordinating this work.²⁰

Based on the information available to the Council, it appears there are no resources available for dealing with mishaps and accidents during transportation in the mangrove belt and, as far as the Council can see, there are no plans for port facilities to deal with normal waste from the ship traffic, but the company's reports state that this will be regulated by the relevant authorities and that the transport will be carried out by other companies. The EIA and coal transport analysis do not describe any existing or planned resources for preventing the spread of pollution in the event of an accident.

Bangladesh has ratified the relevant International Maritime Organisation (IMO) conventions and the International Convention for the Prevention of Pollution from Ships (MARPOL). Under these, shipping companies are legally liable for the consequences of accidents at sea. This is most relevant in terms of compensation. Shipping companies also have a responsibility to prevent situations that entail the risk of an accident.

Ships that sink are not expected to take effective steps to prevent environmental damage. It is therefore normal for coastal states to establish a contingency function to deal with acute pollution at sea. This normally comprises a warning system, equipment, crews and other resources that are tested, maintained and given regular, focused training. For example, the IMO imposes clear requirements on coastal states that have ratified the relevant agreements:

“States which are party to the OPRC Convention and OPRC-HNS Protocol are required to establish a national system for responding to oil and HNS pollution incidents, including a designated national authority, a national operational contact point and a national contingency plan. This needs to be backstopped by a minimum level of response equipment, communications plans, regular training and exercises.”²¹

²⁰ EIA, s 326 tab 10.1

²¹ IMO OPRC

The entire system is normally based on a thorough risk analysis in which incidents with an impact on the design are identified. The system is then designed accordingly. The most important factor is the required response time, i.e. the design must enable crews and resources to be on site in time to prevent the most serious consequences of an accident. In unpopulated coastal and upriver areas, it is unrealistic to have such resources in place on time under all conditions. Moreover, it is difficult to establish contingency systems featuring depots, crews, vessels and drills without negatively impacting surrounding areas.

The power plant and transportation to it will alter the risk profile materially, all the way from the open sea to the port. Any risk analysis and contingency system based on the current risk profile will have to be reviewed if the risk profile changes. Nothing has been said about either state or in-house contingency plans or related risk assessments in the documents describing environmental risk and transport solutions. However, a letter from NTPC did mention that a consultant with logistics expertise had been hired to examine the contingency planning situation.

After the Council recommended the exclusion of NTPC due to the risk of harm to the Sundarbans based, among other things, on the river transport and defective contingency plans, there have been at least three serious shipping accidents in the area.

In December 2014, the oil tanker *Southern Star VII* collided with another vessel near to Mongla and discharged 350,000 litres of heavy oil which spread up- and down-river, into tributaries and in canals and streams in the Sundarbans. The collision took place in a conservation area that is home to river dolphins. After eight days, at least 350km² had been affected and a limited amount of oil had been collected. The authorities did not have the available resources to prevent the oil from reaching land or to carry out an effective clean-up operation afterwards. A lot of the cleaning-up work afterwards was carried out by the local population, who were working without effective protective equipment and were paid for each litre of oil they collected.

In May 2015, a ship loaded with 300 tonnes of fertiliser sank in the Sundarbans. The ship and its cargo were not removed and the chemicals leaked over a long period so that the river course was coloured red and had large volumes of nutrient salts discharged into it.

In October 2015, a ship loaded with 1,200 tonnes of coal sank a bit further south in the same area. Pollution from this shipwreck spread along the river course.

3.4 The impact assessments

The true status of the reports is unclear in certain respects. In most countries, companies intending to establish operations are responsible for commissioning environmental impact reports that provide thorough descriptions of measures to reduce risks. Such environmental impact reports are generally not prepared by the companies themselves, but by consultants. However, the companies are responsible for ensuring that those who draft the reports are experts and that the reports cover all relevant environmental risks. Further, the companies own the reports and are responsible for implementing proposed measures. The authorities may thus impose requirements on the companies based on, among other things, such reports, and may subsequently take steps vis-à-vis the company if a report is inadequate.

CEGIS, the institution which drafted the reports, is stated to be “a public trust under the Ministry of Water Resources”, and thus also represents the authorities. It is unclear whether NTPC or the *joint venture* company can in fact be responsible for a report prepared by the

authorities, or whether a party representing the authorities has prepared and is in practice responsible for an environmental impact assessment that in turn forms the basis for the authorities' own requirements for the operations.

In this case, the Ministry of Energy's subordinate agency has commissioned a report prepared by a subordinate agency of the Ministry of Water Resources that constitutes the expert basis for the Ministry of Environment and Forest's requirements for a *joint venture* company in which the governments of both India and Bangladesh are involved as owners.

The Ministry of Environment has also been responsible for approving the report.

This makes it difficult to understand who is, and who is regarded as being, responsible for the EIA's content, assessments and potential deficiencies. This undermines confidence that the EIA provides an objective, comprehensive analysis.

The structure and content of the EIA is not entirely consistent with, for example, the World Bank's customary EIA design, as regards both the balanced presentation of pros and cons and the specification of technical measures.

Repeated use is made of expressions like "...*little amount of leacheate might be leaching to the ground*" and "*Dredging activities may have impacts on the river water quality*", and there are few descriptions of the evidence in support of these statements and what is needed to limit such effects.

There is insufficient information available on environmental monitoring plans and on what baseline is to be adopted in these plans, and the cost-benefit analysis appears to be very brief. Both the "Environmental Monitoring Plan" and "Cost and Benefit Assessment" are listed in the table of contents, but there is no text in the document.

In its *Performance Standard 6* on biodiversity²², the World Bank/IFC (International Finance Corporation) stipulates very strict requirements for a company's assessment of the possible consequences of actions and for the biodiversity monitoring and evaluation programmes in areas classified as critical habitats, i.e. world heritage areas, most Ramsar and *Biosphere* areas and areas containing endangered or critically endangered species. The area affected by the power plant is covered by all these criteria, even though the power plant is located outside and upstream. In the same way, UNESCO also places emphasis on activities outside the world heritage site that may affect the conservation values.

IFC "*Performance Standard 6*" states:

"17. In areas of critical habitat, the client will not implement any project activities unless all of the following are demonstrated:

- *No other viable alternatives within the region exist for development of the project on modified or natural habitats that are not critical;*
- *The project does not lead to measurable adverse impacts on those biodiversity values for which the critical habitat was designated, and on the ecological processes supporting those biodiversity values;*

²² IFC Performance Standard 6 Biodiversity Conservation and Sustainable Management of Living Natural Resources, Jan.1. 2012.

- *The project does not lead to a net reduction in the global and/or national/regional population of any Critically Endangered or Endangered species over a reasonable period of time;*
- *A robust, appropriately designed, and long-term biodiversity monitoring and evaluation program is integrated into the client's management program;"²³*

4 Information from the company

The company replied October 13. on the draft recommendation, and commented on both the river transport and the dredging. Regarding the river transportation the company states that transport and logistics will be done by qualified and experienced agencies, and will be followed up by local port authorities. The company states that *«As such, with proper selection of the logistic agencies and strict observance of stipulated rules & regulations as well as adherence to prudent safety measures, the transportation activity is unlikely to have any adverse impact on the ecologically sensitive areas in the projects vicinity.»*

Concerning dredging the company comments *«The movement of goods for the project construction will be through an already existing and under use maritime route for movement of ships and barges. Hence, for the transportation of construction equipment and project equipment for this power plant, no additional dredging is envisaged apart from the regular dredging being currently carried out.»*

The company also briefly comments on the handling of waste *«Construction waste from the project site will be transported for disposal by land route to a designated place to be identified by the local authorities at a safe distance from the ecologically sensitive areas.»*

The company has published its *Corporate Social Responsibility (CSR) policy* and latest *Sustainability Report (2014-15)* on its website. In the latter report, it writes the following in the chapter headed *"Our Environmental Performance"*: *"For BHEL, Sustainability is about preserving our natural environment which is the source of our survival & wellbeing while creating value for the stakeholders in a socially acceptable manner. In other words, as a responsible corporate citizen, we are committed for putting our all-out effort for preservation of environment while achieving higher growth in the organisation and sharing this created value with the society in more inclusive manner. At BHEL, we believe in doing business in a sustainable manner that extends across the spheres of our Business strategy, environmental action, social support and governance."*

Regarding biodiversity the company states the following in the 2014-2015 report: *"However, as far as the significant impact of our operations/activities on biodiversity is concerned, there is no significant impact of our activities on biodiversity and as such there is no habitat which is being protected or restored by the company."* The Council does not know whether the company considers its possible effect on the environment to be different after it was awarded the contract in the Sundarbans.

²³

http://www.ifc.org/wps/wcm/connect/bff0a28049a790d6b835faa8c6a8312a/PS6_English_2012.pdf?MOD=AJPERES

5 The Council on Ethics' assessment

Based on the information available, the Council on Ethics has considered whether there is an unacceptable risk of BHEL contributing to, or itself being responsible for, severe environmental damage in the Sundarbans by building a coal-fired power plant.

As stated, the Council has previously recommended excluding NTPC, which has a licence for the power plant as part of a *joint venture*. BHEL is to build the power plant on behalf of the *joint venture* company. The assessments of the risks linked to dredging and transport which led to the recommendation to exclude NTPC in 2014 also apply to BHEL as long as it has relevant activities linked to the power plant.

The Council finds there is no doubt that the entire Sundarbans has unique environmental qualities, and that there is a special need to protect the mangrove forest in the Sundarbans in general and the world heritage sites, Ramsar area and globally endangered animal species in particular. The Council concludes that it is correct to regard the national conservation area as a necessary buffer zone around the world heritage site, and that the large numbers of animals such as river dolphins and tigers in the buffer zone document the special conservation values in the entire area. The Council considers there to be an unacceptable risk of severe environmental damage to both the world heritage sites and the conservation areas surrounding them as a result of the building of, and transportation to, the power plant. The Sundarbans is a dynamic mangrove area that is under severe pressure, and the effects of intervention in and damage to such systems are often irreversible.

In its recommendation, the Council has mainly placed emphasis on the risk linked to dredging and river transport, including the risk of unforeseen situations and negative incidents. Considerable weight is also given to UNESCO's strong concerns about these factors.

The Council considers it unlikely that the disruptions and risk of accidents due to transportation will be reduced without extensive analyses and measures. Moreover, even if further measures were to be implemented, the Council finds it unlikely that the risk can be reduced to an acceptable level.

Given the large volumes of mud transported by the river, there will be a recurring need for dredging. The risk of unforeseen events due to the ship transport will be a result of many factors, including the cargo volume, manoeuvrability, weather conditions, communication with other vessels, training and local contingency planning. Each of the factors linked to transportation and dredging is a considerable environmental risk factor.

The EIA clearly states that very many considerations have to be taken into account to prevent environmental damage, that there are substantial conservation values and that many authorities are involved. The EIA describes measures that, in principle, appear relevant. However, it contains no, or few, descriptions of what is required to avoid damaging the environment, and does not assess whether the proposed measures will be adequate. Nor does it draw on international experience relating to measures to prevent sludge loss, the biological effects of dredging, contingency systems based on comparable challenges or the risk of shipwreck. It is therefore impossible to assess whether the environment will be sufficiently protected if the EIA proposals are adopted. The Council has concluded that this constitutes a clear additional risk which the company has not taken adequate steps to investigate.

Further, the EIA does not deal with the consequences of failing to comply with the regulations. This makes it difficult to identify relevant, adequate measures. If adequate environmental protection requires full compliance with all regulations, it will be necessary to analyse whether this is achievable, or whether additional systems have to be introduced to

discover or reduce the effects of deviating situations. For example, although it is in principle illegal for a shipwreck to pollute, realistically this will occasionally happen in difficult waters and under difficult weather conditions.

The EIA has been prepared by an official body. Although the Bangladesh authorities are accordingly more involved in analysing the risk and specifying suitable measures to lessen the risk, it is nonetheless a generally accepted principle that the company itself is responsible for identifying risk elements and implementing adequate measures.

The standard applied to the company by the Council in this case thus largely corresponds to the expectations the IFC has of companies whose operations affect critical habitats.

Sea and river transportation

The company will probably purchase transportation services. The transportation of materials and suchlike for the construction work must be regarded as part of the project and a matter which the company must take into consideration in its overall plan for dealing with the environmental challenges. The Council finds there is therefore no doubt that the company shares responsibility for, and is a participant in the creation of, all risks arising in connection with transportation.

The Council finds that the activities associated with sailing into and through this area comprise a material risk to the protected areas and the values they contain.

In a country with limited national shipping legislation, a vessel's legal responsibility will be defined by the IMO. The IMO requires those responsible on a vessel to liaise with any national contingency organisation.

No such national contingency response resource is mentioned in the EIA. We therefore have to assume that no adequate resource of this kind exists. The company must be aware of this deficiency, and has an independent responsibility to ensure that its activities and those of its suppliers do not constitute an unacceptable risk.

The proximity to the Sundarbans in general and the world heritage site in particular mean that accidents involving vessels may have unacceptable consequences.

During the construction period, boats will make many trips up and down the river in an area which is vulnerable to monsoons, storm surges and flooding and is highly challenging in navigational terms. A single accident that is not handled quickly and correctly may be enough to cause great damage to the Sundarbans and the world heritage sites. Statistically, there is a greater risk of such accidents occurring in poor weather and difficult sailing conditions, and this underlines that contingency plans and measures to deal with accidents cannot be based on what is possible under normal circumstances.

The transport operations constitute a significant risk to the mangrove forest and its ecosystem and mean extensive disruption to animal life, changes to mud transportation that affect plant life and animals in the river, and erosional changes affecting both vegetation and animal life. The overall result may be lasting changes to the ecosystem.

The EIA summarises this as follows: "*If navigational, spillages, noise, speed, lighting, waste disposal rules regulations are not properly maintained, it may impact the Sundarbans ecosystem especially Royal Bengal Tiger, deer, crocodile, dolphins, mangroves, etc.*"²⁴.

²⁴ EIA, p 268

However, it does not state the reasons for concluding that these rules are adequate, or how compliance with the rules is to be ensured.

Even if a simple contingency system were to be established, for example based on alarm notification systems between the boats and some equipment installed on the boats, such a short time would elapse between an accident occurring and pollution reaching land or other marine areas that it is unrealistic to expect such a system to alleviate the situation significantly. At the same time, the three serious ship accidents in the area in the space of one year have clearly shown that any contingency resources do not have the capacity to prevent large-scale damage or implement effective measures for removing or limiting pollution or removing shipwrecks afterwards. Accordingly, the Council concludes that the scope of the transportation and circumstances under which the transportation is to occur indicate that the risk of severe environmental damage is unacceptably high.

Dredging

The Council is not aware of any thorough evaluation of whether increased mud transportation and changes to river-bed conditions will affect the protected areas. The rivers naturally carry large numbers of particles and local species are therefore adapted to this, but there is great uncertainty about what a potentially large increase would mean. BHEL states in its comment to the draft recommendation that it will not be necessary to perform any additional dredging activities during the construction period. The project description, which also includes the construction period, states that dredging will be done to a large extent to facilitate the transport. The Council believes that the extensive changes to depths and currents that dredging entails may have a major impact on vulnerable species in affected areas. This may especially affect river dolphins, which are dependent on the river bed being conducive to the production and existence of prey.

The lack of an analysis of the problems relating to changes in river-bed conditions and increased mud transportation in connection with dredging, and particularly the lack of a plan for the environmentally sound execution of the extensive dredging work, create great uncertainty about the company's plans for necessary environmental measures and their effect. Paradoxically, the dredging will to some degree reduce the risk of accidents, while at the same time the dredging itself creates a high risk for direct harmful effects on the environment.

Conclusion

It seems unlikely that a coal-fired power plant can be built at this location without the construction work itself constituting a high risk of severe environmental damage, even if extensive new measures are implemented. In the present case, the company has also apparently failed to sufficiently consider what needs to be done to protect the environment. Further, various factors relating to transportation have not been addressed and handled satisfactorily. Several accidents illustrate that the risk is a real one. Overall, this suggests a significantly increased risk of unwanted incidents in a unique, highly vulnerable area. The Council on Ethics has also given considerable weight to the strong concern expressed by UNESCO regarding the risks associated with the project and that Unesco recently has called for a cancellation and relocalization of the project, as well as the fact that the IFC recommendations for such situations have not been followed.

The Council on Ethics recommends the exclusion of the company Bharat Heavy Electricals Ltd. from the Government Pension Fund Global due to an unacceptable risk of the company contributing to or being responsible for severe environmental damage.

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Leder				
(sign.)	(sign.)	(sign.)	(sign.)	(sign.)