

EXECUTIVE SUMMARY

1.0 INTRODUCTION

M/s. Kohinoor Pulp & Paper Pvt. Ltd. (KPPPL), Assam belongs to the Kohinoor Group which is a joint venture of T.M. Dugar Group of Nepal and Bothra group of India. As Assam is a rich source of raw material (Bamboo) for Pulp & Paper industry, it is natural to think about this industry for any industrial group. With this view the group has decided to diversify their activities to the Pulp & Paper industry.

The proposed Greenfield Project is being considered to manufacture pulp and paper. The Project would be set up in the Industrial Growth Centre (IGC) of Assam Industrial Development Corporation at Matia in Goalpara District of Assam.

The units proposed to be installed with rated capacity per annum are presented in Table - 1.1.

Table 1.1
Proposed Project

| Sl. No. | Facilities | Proposed Capacity |
|---------|--|-------------------|
| 1. | Natural Fiber / Wood based Pulp Plant | 250 TPD |
| 2. | Paper Plant for Writing, Printing and Copier Paper | 250 TPD |
| 3. | Co-generation Power Plant | 10 MW |

M/s Envirotech East Pvt. Ltd. have conducted an Environmental Impact Assessment (EIA) for the proposed plant at Goalpara district in Assam and formulated an appropriate Environmental Management Plan (EMP) for the project.

2.0 SITE LOCATION

The proposed plant site is situated at Industrial Growth Centre (IGC), Plot Block C, Village Mornoi, Matia, District Goalpara, of Assam. The project site is located between latitude 26°05'45.61"N and longitudes 90°43'51.28"E.

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The nearest town Goalpara, district Head Quarters is situated around 16 kms in NW direction from the project site. Guwahati city is around 115 kms in east side from the project site. River Brahmaputra is flowing towards north direction w.r.t the proposed project site.

The nearest airport is Lokpriya Gopinath Bordoloi International Airport, Borjhar, Guwahati which is about 105 kms from the project site in East direction.

3.0 PROJECT HIGHLIGHTS

The principal features or highlights of the proposed Project under study are as follows:

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| Location | Industrial Growth Centre (IGC), Plot Block C, Village Mornoi, Matia, District Goalpara, Assam. |
| Land requirement | The proposed project shall be accommodated within already procured land (200 acres) within the Industrial Growth Centre of Assam Industrial Development Corporation (AIDC). |
| Raw water requirement & source | Make up water requirement for the project is around 18,480 cum/day (14,780 m ³ /day for Pulp Plant, 2,500 m ³ /day for Paper Plant, 720 m ³ /day for Boiler & 480 m ³ /day for domestic purpose). Water will be sourced from river/Bore well. |
| Power requirement | Requirement of power for the proposed project is around 15 MW, which will be sourced mostly from the proposed 10 MW Captive Co-generation Power Plant and the balance from Assam State Electricity Board. |
| Effluent generation, treatment & disposal | 521 m ³ /hr. liquid effluent will be generated, which will undergo treatment in the proposed Effluent Treatment Plant (ETP) with the design capacity of 600 m ³ /hr. Treated effluent meeting relevant effluent discharge standards will be let out into the river. |
| Air pollution control | Adequate control measures like installation of bag filters, electrostatic precipitators, dust suppression system and stacks of adequate height at relevant points. |
| Manpower | 750 persons |
| Project cost | ₹ 585 Crores |

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4.0 BASELINE ENVIRONMENTAL SCENARIO

The area falling within the radius of 10 kms around the proposed Pulp & Paper project at Industrial Growth Centre (IGC), Plot Block C, Village Mornoi, Matia, District Goalpara, Assam has been considered as study area. On-site environmental quality monitoring was carried out from 1st October, 2010 to 31st December, 2010.

4.1 Meteorology

The monthly maximum and minimum temperatures recorded on-site during the aforesaid monitoring period (1st October, 2010 – 31st December, 2010) varied between (32.5 – 35.0)°C and (9.5 – 13.5)°C respectively with overall maximum and minimum temperatures being 35.0°C and 9.5°C respectively.

The monthly minimum and maximum relative humidity recorded on-site during the said monitoring period varied between (53 – 58)% and (77 – 81)% respectively, the overall minimum and maximum being 53% & 81% respectively.

During the said monitoring period, the monthly mean wind speed measured on-site varied between 1.9 km/hr (November, 2010) to 2.6 km/hr (October, 2010). The overall mean wind speed during the period was 2.27 km/hr.

4.2 Ambient Air Quality

Ambient air quality was monitored at eight (8) locations in and around the project site.

The overall mean of 24-hourly average values of PM₁₀, PM_{2.5}, SO₂ and NO_x in the area (mean of all the 8 locations) were 32.98 µg/m³, 15.25 µg/m³, 4.36 µg/m³ and 9.07 µg/m³ respectively.

4.3 Water Quality

Water samples were collected and analyzed at 8 locations to assess the surface water quality in the study area. Water samples were collected from eight (8) locations to assess the baseline status of the ground water quality of the study area.

The pH value of the collected Brahmaputra River sample was found in the range of (7.2-7.4). Dissolved Oxygen was observed in the range of 6.5-6.7 mg/l. The Total Dissolved Solids were found in the range of

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163-167 mg/l, while total Hardness of the collected sample was found in the range of 96-102 mg/l. Calcium & Magnesium were found 27-31 mg/l and 6-7 mg/l respectively. Oil and grease was below detected limit (<1.4 mg/l). The Sulphate, Nitrate and Chloride in the collected sample were observed in the range between 2-3 mg/l, 1.4-1.5 mg/l and 15-18 mg/l respectively. The Iron & Zinc contents were found in the range of 0.9 – 1.1 mg/l & 0.06 - 0.07 mg/l respectively.

The pH value of the collected sample was found in the range of (6.9-7.8). Dissolved Oxygen was observed in the range of 5.8-6.2 mg/l. The Total Dissolved Solids were found in the range of 175-211 mg/l while total Hardness of the collected sample was found in the range of 128-156 mg/l. Calcium & Magnesium were found 34-44 mg/l and 8-13 mg/l respectively. Oil and grease was below detected limit (<1.4 mg/l). The Sulphate, Nitrate and Chloride in the collected sample were observed in the range between 4-8 mg/l, 1.6-3.6 mg/l and 24-36 mg/l respectively. The Iron & Zinc contents were found in the range of 0.62 – 1.5 mg/l & 0.09 - 0.20 mg/l respectively.

Conclusion can be drawn in the light of the overall analysis made so far that the surface water as well as ground water in the study area is free of any kind of industrial and urban pollution and has been found to be generally fit for human consumption.

4.4 Noise

A total of 10 locations around the proposed project were selected for the measurement of ambient noise levels.

During the day time, the equivalent noise levels were found to vary in the range of (55.1-51.4) dB (A) while in the night time, the equivalent noise levels were observed to be varying in the ranges of (46.4 – 42.8) dB (A).

4.5 Ecology

The study area is found to have a good vegetation cover due to helpful climatic conditions and good soil quality in the area.

There are naturally growing plants, vegetation and grasses. There is extensive grazing land in the study area. The overall floral composition in the whole study area is quite rich.

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4.6 Demography and Socio-economy

10 kms radius area around the project site falls in Goalpara district of Assam. There are 50 villages falling under the study area. Majority of the study area is semi-urban in nature and moderately populated with the total population of 77,368 (as per 2001 Census). The sex ratio is about 960 females per 1000 males. Scheduled Caste (SC) and Scheduled Tribe (ST) population is about 6.21% and 8.12% of the total population respectively. The principal language is Assamese. The principal staple food is rice.

5.0 ENVIRONMENTAL IMPACTS OF PROPOSED PROJECTS

5.1 Impacts on Air Quality

There will be total 2 (two) stacks, out of which 1 (one) will be attached to the recovery boiler and the other, attached to the boilers of 10 MW co-generation Captive Power Plant. Major pollutants, emitted are particulate matter, sulphur dioxide (SO₂) & nitrogen oxides (NO_x). Other emissions are negligible.

As recommended by CPCB, GLCs at various receptor locations within 10 km radius have been computed for the three months' period (1st October, 2010 – 31st December, 2010) representing the monitoring period, based on the hourly meteorological data of this period. The computation has been made applying Industrial Source Complex (ISC3) model, developed by United States Environmental Protection Agency (USEPA), which is most widely used and also recommended by CPCB (PROBES/70/1997-98).

The maximum incremental values of SO₂, NO_x & PM are about 5.63, 3.61 & 0.67 µg/m³ respectively, which will occur at a distance of about 0.2-0.8 km. in 'SSE', 'SW' & 'SW' directions respectively w.r.t. the ARP. Moreover, it may be observed that these values have been attained only on one day during the study period.

The predicted maximum GLCs of SO₂, NO_x & PM due to the operation of the entire plant is well within the prescribed limits. Therefore, there will be insignificant impact on the Air Quality of the area due to the operation of the proposed project.

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5.2 Impacts on Water Quality

Wastewater after proper treatment meeting relevant effluent discharge standards will be let out into the river. As the quality of the waste water, to be discharged into the River shall be within relevant effluent discharge standards, no impact on the water quality of the receiving water body is envisaged.

No thermal pollution is expected as closed cycle cooling system will be adopted.

5.3 Impacts on Soil

There will be solid waste generation, but will be managed in the proper manner. This will ensure that there will not be any impact on soil quality due to the disposal or deposition of solid waste.

5.4 Impacts on Land Use

The proposed project shall be accommodated within already procured land within the Industrial Growth Centre of Assam Industrial Development Corporation (AIDC), so there will not be any impact on the land use pattern of the area.

5.5 Impacts on Biological Environment

The surrounding area has substantial vegetation in the form of village orchards, roadside trees and agriculture. If the gaseous emission is controlled properly, there will not be significant impact. There will be sufficient plantation of trees at the plant site. All these measures, if implemented properly will ensure insignificant impact on the local vegetation from the proposed project and may improve the vegetation scenario of the area.

As the quality of the waste water, to be discharged into the River shall be within relevant effluent discharge standards. Hence, there will be no impact on the aquatic ecology of the water bodies.

5.6 Impacts on Socio-Economic Environment

The project will offer substantial employment potential during both the construction and the operation phases, which will have beneficial impact.

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6.0 ENVIRONMENTAL MANAGEMENT PLAN

M/s Kohinoor Pulp & Paper Pvt. Limited will develop various management activities for the Environmental Management Programme which will meet all statutory requirements and help to improve environmental quality.

In order to improve the aesthetic look of the area and enhance the land use as well as to compensate for any loss in ecology during construction, adequate plantation programmes around the project site have been planned and will be adopted. Development of green belt will include plantation of trees along boundary of the factory, roads, raw material yard and other available spaces. Around 33% of total area of factory will be covered under green cover.

A detailed monitoring for different environmental parameters will be carried out as per direction of State Pollution Control Board. An environmental management group will be established to implement the management plan.