

F. No. J-11011/274/2015-IA II (I)
Government of India
Ministry of Environment, Forest and Climate Change
(IA Division)

Indira Paryavaran Bhawan
Jor Bagh Road, N Delhi - 3
Dated: 6th November, 2017

To,

M/s Numaligarh Refinery Ltd.
Pankagrnt Numaligarh Refinery Complex,
Golaghat- 785699 (Assam)

Sub: Setting up Bamboo based Ethanol Project at village Owguri Chapori Gaon, Mouza Morong, Tehsil & District Golaghat (Assam) by M/s Numaligarh Refinery Ltd - Environmental Clearance - reg.

Ref: Online proposal no. IA/AS/IND2/31790/2015 dated 14th August, 2017

Sir,

This has reference to your online proposal no IA/AS/IND2/31790/2015 dated 14th August, 2017 along with project documents namely, EIA/EEMP Report along with Public consultation details on the above subject matter.

2. The Ministry of Environment, Forest and Climate Change has examined the proposal for grant of environmental clearance to the 'Bamboo based Bio-Ethanol Plant of capacity 187 KLPD/49 KTPA' by M/s Numaligarh Refinery Limited in an area of 10.5 ha located at Village Owguri Chapori Gaon, Mouza Morong, Tehsil & District Golaghat (Assam).

3. The details of proposed products are reported to be as under:-

S. No	Products	Quantity (TPA)
1.	Ethanol	49,000
2.	Acetic acid	11,000
3.	Furfural	19,000
4.	Bio-coal (20 MJ/kg)	1,60,000
5.	Stillages (dry basis)	30,000

4. The land area will be 10.5 ha. Greenbelt will be developed in an area of 33% i.e. 34,700 sqm out of total area of the project. The estimated project cost is Rs. 950.45 Crores. Total capital cost earmarked towards environmental pollution control measures is Rs.11.7 crores and the recurring cost (O & M) will be about Rs.7.15 crores per annum. Total employment will be 150 persons as direct & 10,000 persons indirect.

5. There are no National Parks, Wildlife Sanctuaries, Biosphere Reserves, Tiger/ Elephant Reserves, Wildlife Corridors etc, within 10 km distance of the project. River Dhansiri is flowing at a distance of 1.6 km in North West direction.

6. Total water requirement is estimated to be 2764 cum/day, of which fresh water requirement of 2224 cum/day will be met from River Dhansiri using existing water intake facility.



Total effluent generation will be 540 cum/day. Effluent of 540 cum/day will be diverted to existing effluent treatment plant of NRL and after treatment and confirming norms reused in Colling tower makeup, green belt development and dust suppression after treatment. Plant will be based on Zero Liquid discharge system.

Power requirement will be 8.6 MW and will be met from proposed captive power plant. The proposed CPP will produce total 20 MW power out of which 11.4 MW will be diverted to grid. During power failure, the grid power will be utilized, which is a standby power source.

135 TPH Biocoal fired boiler will be installed. Electro Static Precipitator (ESP) and Modern combustion technology with a stack of height of 60 m will be installed for controlling the Particulate emissions for Proposed 135 TPH fired boiler.

Generated carbon dioxide from fermentation process will be vented from fermenters. Fly ash generated from boiler will be utilized as fertilizer or in cement production.

7. The project/activity is covered under category A of item 5(g)(ii) 'Distillery' of the Schedule to EIA Notification, 2006, and requires appraisal at central level by the sectoral EAC in the Ministry.

8. The ToR for the project was granted on 5th May, 2016, and the public hearing was conducted by the SPCB on 15th July, 2017.

9. The proposal was considered by the Expert Appraisal Committee (Industry-2) in its 28th meeting held during 18-20 September, 2017. The project proponent and their accredited consultant M/s Envision Enviro Technologies Pvt Ltd presented EIA / EMP report as per the ToR. The EAC found the EIA/ EMP Report to be satisfactory and in consonance with the presented ToR. The Committee has recommended the proposal for grant of environmental clearance.

10. Based on the proposal submitted by the project proponent and recommendations of the EAC, the Ministry of Environment, Forest and Climate Change hereby accords environmental clearance to project for '*Bamboo based Bio-Ethanol Plant*' of capacity 49 KTPA by M/s Numaligarh Refinery Limited in an area of 10.5 ha located at Village Owguri Chapori Gaon, Mouza Morong, Tehsil & District Golaghat (Assam) under the provisions of the EIA Notification, 2006, and the amendments therein, subject to the compliance of the terms and conditions as under:

- (a) The final product shall be used only as a bio-fuel and not at all for human consumption.
- (b) Consent to Establish/Operate for the project shall be obtained from the State Pollution Control Board as required under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974.
- (c) As already committed by the project proponent, Zero Liquid Discharge shall be ensured and no waste/treated water shall be discharged.
- (d) Necessary authorization required under the Hazardous and Other Wastes (Management and Trans-Boundary Movement) Rules, 2016, Solid Waste



Management Rules, 2016 shall be obtained and the provisions contained in the Rules shall be strictly adhered to.

- (e) National Emission Standards for Organic Chemicals Manufacturing Industry issued by the Ministry vide G.S.R. 608(E) dated 21st July, 2010 and amended from time to time shall be followed.
- (f) To control source and the fugitive emissions, suitable pollution control devices shall be installed to meet the prescribed norms and/or the NAAQS. The gaseous emissions shall be dispersed through stack of adequate height as per CPCB/SPCB guidelines.
- (g) Solvent management shall be carried out as follows :
 - (i) Reactor shall be connected to chilled brine condenser system.
 - (ii) Reactor and solvent handling pump shall have mechanical seals to prevent leakages.
 - (iii) The condensers shall be provided with sufficient HTA and residence time so as to achieve more than 95% recovery.
 - (iv) Solvents shall be stored in a separate space specified with all safety measures.
 - (v) Proper earthing shall be provided in all the electrical equipment wherever solvent handling is done.
 - (vi) Entire plant shall be flame proof. The solvent storage tanks shall be provided with breather valve to prevent losses.
 - (vii) All the solvent storage tanks shall be connected with vent condensers with chilled brine circulation.
- (h) Total fresh water requirement shall not exceed 2224 cum/day. Prior permission shall be obtained in this regard from the concerned regulatory authority.
- (i) Process effluent/any wastewater shall not be allowed to mix with storm water. Storm water drain shall be passed through guard pond.
- (j) Hazardous chemicals shall be stored in tanks, tank farms, drums, carboys etc. Flame arresters shall be provided on tank farm and the solvent transfer through pumps.
- (k) Process organic residue and spent carbon, if any, shall be sent to cement industries. ETP sludge, process inorganic & evaporation salt shall be disposed off to the TSDF.
- (l) The Company shall strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rules, 1989 as amended time to time. All transportation of Hazardous Chemicals shall be as per the Motor Vehicle Act (MVA), 1989.
- (m) Fly ash should be stored separately as per CPCB guidelines so that it should not adversely affect the air quality, becoming air borne by wind or water regime during rainy season by flowing along with the storm water. Direct exposure of workers to fly ash & dust should be avoided.
- (n) The company shall undertake waste minimization measures as below:-
 - (i) Metering and control of quantities of active ingredients to minimize waste.

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- (ii) Reuse of by-products from the process as raw materials or as raw material substitutes in other processes.
 - (iii) Use of automated filling to minimize spillage.
 - (iv) Use of Close Feed system into batch reactors.
 - (v) Venting equipment through vapour recovery system.
 - (vi) Use of high pressure hoses for equipment clearing to reduce wastewater generation.
- (o) The green belt of at least 10 m width shall be developed in more than 33% of the total project area, mainly along the plant periphery, in downward wind direction, and along road sides etc. As many as 25000 trees to be planted per year during first five years. Selection of plant species shall be as per the CPCB guidelines in consultation with the State Forest Department.
- (p) All the commitment made regarding issues raised during the Public Hearing/consultation meeting held on 15th July, 2017 shall be satisfactorily implemented.
- (q) At least 2.5% of the total project cost shall be allocated for Enterprise Social Commitment based on Public Hearing issues and item-wise details along with time bound action plan shall be prepared and submitted to the Ministry's Regional Office.
- (r) For the DG sets, emission limits and the stack height shall be in conformity with the extant regulations and the CPCB guidelines. Acoustic enclosure shall be provided to DG set for controlling the noise pollution.
- (s) The unit shall make the arrangement for protection of possible fire hazards during manufacturing process in material handling. Fire fighting system shall be as per the norms.
- (t) Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.
- (u) Continuous online (24x7) monitoring system for stack emissions shall be installed for measurement of flue gas discharge and the pollutants concentration, and the data to be transmitted to the CPCB and SPCB server. For online continuous monitoring of effluent, the unit shall install web camera with night vision capability and flow meters in the channel/drain carrying effluent within the premises. In case of the treated effluent to be utilized for irrigation/gardening, real time monitoring system shall be installed at the ETP outlet.

10.1 The grant of Environmental Clearance is further subject to compliance of other generic conditions as under:-

- (i) The project authorities must strictly adhere to the stipulations made by the state Pollution Control Board (SPCB), State Government and/ or any other statutory authority.
- (ii) No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry. In case of deviations or alterations in the project proposal from that submitted to this Ministry, a fresh reference shall be made to the Ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.



- (iii) The locations of ambient air quality monitoring stations shall be decided in consultation with the SPCB and it shall be ensured that at least one stations is installed in the upwind and downwind direction as well as where maximum ground level concentrations are anticipated.
- (iv) The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16th November, 2009 shall be complied with.
- (v) The overall noise levels in and around the plant area shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels shall conform to the standards prescribed under Environment (Protection) Act, 1986 Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).
- (vi) The Company shall harvest rainwater from the roof tops of the buildings and storm water drains to recharge the ground water and utilize the same for different industrial operations within the plant.
- (vii) Training shall be imparted to all employees on safety and health aspects of chemicals handling. Pre-employment and routine periodical medical examinations for all employees shall be undertaken on regular basis. Training to all employees on handling of chemicals shall be imparted.
- (viii) The company shall comply with all the environmental protection measures and safeguards proposed in the documents submitted to the Ministry. All the recommendations made in the EIA/EMP in respect of environmental management, risk mitigation measures and public hearing shall be implemented.
- (ix) The company shall undertake all measures for improving socio-economic conditions of the surrounding area. CSR activities shall be undertaken by involving local villagers, administration and other stake holders. Also eco-developmental measures shall be undertaken for overall improvement of the environment.
- (x) A separate Environmental Management Cell equipped with full fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions.
- (xi) The company shall earmark sufficient funds towards capital cost and recurring cost per annum to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so earmarked for environment management/ pollution control measures shall not be diverted for any other purpose.
- (xii) A copy of the clearance letter shall be sent by the project proponent to concerned Panchayat, Zila Parisad/ Municipal Corporation, Urban local Body and the local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal.
- (xiii) The project proponent shall also submit six monthly reports on the status of compliance of the stipulated Environmental Clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the respective Regional




Office of MoEF&CC, the respective Zonal office of CPCB and SPCB. A copy of Environmental Clearance and six monthly compliance status report shall be posted on the website of the company.

- (xiv) The environmental statement for each financial year ending 31st March in Form-V as is mandated shall be submitted to the concerned SPCB as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional offices of MoEF&CC by e-mail.
- (xv) The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB/Committee and may also be seen at Website of the Ministry at <http://moef.nic.in>. This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the concerned Regional office of the Ministry.

11. The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not reported to be satisfactory.

12. The Ministry reserves the right to stipulate additional conditions, if found necessary. The company in a time bound manner will implement these conditions.

13. The above conditions will be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Water Pollution) Act, 1981, the Environment (Protection) Act, 1986, the Hazardous Waste (Management, Handling and Trans-boundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and rules.


6/11/2017
(S. K. Srivastava)
Scientist E

Copy to:-

1. The Principal Secretary, Department of Environment & Forest, Govt. of Assam, **Guwahati**, Assam
2. The Member Secretary, Assam Pollution Control Board, Bahunimatram, **Guwahati**, Assam
3. The Member Secretary, Central Pollution Control Board, Parivesh Bhavan, CBD-cum-Office Complex, East Arjun Nagar, **Delhi** - 32
4. The Addl. Principle Chief Conservator of Forests (C), MoEF&CC, Regional Office (NEZ), Law-U-Sib, Lumbatngen, Near MTC Workshop, **Shillong**- 793021
5. Monitoring Cell, Ministry of Environment, Forest and Climate Change, Indira Paryavaran Bhawan, Zor Bagh Road, **New Delhi**
6. Guard File/Record File/Notice Board.


6/11/2017
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