

F. No. J-11011/26/2013- IA II (I)  
Government of India  
Ministry of Environment, Forests and Climate Change  
(I.A. Division)

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Date: 12<sup>th</sup> May, 2015

To,  
Shri George Paul (Dy. General Manager)  
M/s BPCL-Kochi Refinery.  
Post Bag No. 2 Ernakulam District  
Ambalamugal -682 302, Kerala

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Subject: Propylene Derivatives Petrochemical Project (PDPP) at Village Puthencruz/Thiruvankulam, Tehsil Kunnathanadu, District Ernakulam, Kerala by M/s BPCL-Kochi Refinery- Environmental Clearance reg.

Ref. : Your letter no. BPCL-KR-PC7 dated 9<sup>th</sup> January, 2012.

Sir,

This has reference to your letter dated 9<sup>th</sup> January, 2012 alongwith project documents including Form 1, Prefeasibility Report, Draft Terms of References, EIA/EMP report, Public Hearing report and your subsequent letter no. 26-PT-54 dated 19<sup>th</sup> March, 2015 on the above mentioned subject.

2.0 The Ministry of Environment, Forests and Climate Change has examined the application. It is noted that the proposal is for setting up of Propylene Derivatives Petrochemical Project (PDPP) at Village Puthencruz/Thiruvankulam, Tehsil Kunnathanadu, District Ernakulam, Kerala. Total cost of the project is Rs. 4588 Crore. Plant area is 132.4 Acres of which area earmarked for greenbelt is 40 acres. Polymer grade propylene (250 TMT) will be supplied by the BPCL-Kochi Refinery after implementation of the integrated refinery expansion project (IREP) at Kochi, Kerala. Chitrapuzha River (1.0 Km), Panar (1.6 Km) and KaitapuzhaKoyal (5.7 Km) are located within 10 Km distance. It is reported that no national park/wildlife sanctuary/reserve/protected forests are located within 10 km distance. Following products will be manufactured:

Products:	
Ester Grade Acrylic Acid	: 47,000 Metric Tonnes per Annum
Butyl Acrylate	: 180,000 Metric Tonnes per Annum
2 Ethyl Hexyl Acrylate	: 10,000 Metric Tonnes per Annum
Normal Butanol	: 38,000 Metric Tonnes per Annum
2 Ethyl Hexanol	: 47,000 Metric Tonnes per Annum

Iso Butanol	:	7,000 Metric Tonnes per Annum
<b>Plant Capacities:</b>		
Acrylic Acid Unit	:	160,000 Metric Tonnes per Annum
Acrylate Unit	:	190,000 Metric Tonnes per Annum
Oxo Alcohols Unit	:	212,000 Metric Tonnes per Annum

3.0 Off gases and other waste gases generated from the process units will be routed to waste incineration unit for treatment. Low NOx burners will be provided. Online analyzers / Gas monitors will be provided to monitor emissions / leaks. Smokeless flare of adequate height will be provided for safe disposal of gases during emergencies. Total SO<sub>2</sub> emissions from PDPP will be 43.4 Kg/hr. Total SO<sub>2</sub> emissions after implementation of PDPP alongwith the existing Integrated Refinery Expansion Project (IREP) of Kochi Refinery will be 1561.4 Kg/hr. It is reported that total fresh water requirement from Periyar River will be 493 m<sup>3</sup>/hr. for which BPCL – Kochi Refinery has consent from the Govt. of Kerala for drawing water from Periyar River upto 3083.3 m<sup>3</sup>/hr. Effluent generation will be 35 m<sup>3</sup>/hr from process, 102.3 m<sup>3</sup>/hr from cooling tower blow down and 203 m<sup>3</sup>/hr from condensate. Low COD effluent from process will be treated in combine effluent treatment plant of IREP. High COD effluent will be routed to waste incinerator. Cooling tower blow down will be treated in RO. DM plant and treated effluent will be recycled /reused for cooling tower make up. Condensate will be reused in the IREP project of Refinery. Domestic sewage will be treated in sewage treatment plant (STP). Rain water from PDPP complex will be routed to an oil water separator and will be reused. Oxidation catalyst, Feed purification absorbent and Polymer residue will be sent to the Authorized recycler/re-processors.

4.0 All petro-chemical complexes are listed at S.N. 5(c) under category 'A' and appraised at Central level.

5.0 Public hearing/consultation was conducted by the State Pollution Control Board on 23<sup>rd</sup> December, 2014.

6.0 The proposal was considered by the Expert Appraisal Committee (Industry) in its meetings held during 5<sup>th</sup>-7<sup>th</sup> March, 2013, 28<sup>th</sup> to 30<sup>th</sup> April 2014 and 17<sup>th</sup>-19<sup>th</sup> February, 2015 respectively. Project Proponent and the EIA Consultant namely Engineers India Ltd., have presented EIA / EMP report as per the TOR. EAC has found the EIA / EMP Report and additional information to be satisfactory and in full consonance with the presented TORs. The Committee recommended the proposal for environmental clearance.

7.0 Based on the information submitted by the project proponent, the Ministry of Environment and Forests hereby accords environmental clearance to above project under the provisions of EIA Notification dated 14<sup>th</sup> September 2006, subject to the compliance of the following Specific and General Conditions:

**A. SPECIFIC CONDITIONS :**

- i. M/s BPCL shall comply with new standards/norms for Oil Refinery Industry and petrochemical industry notified under the Environment (Protection) Rules, 1986.
- ii. Continuous on-line stack monitoring for SO<sub>2</sub>, NOx and CO of all the stacks shall be carried out. Low NOx burners shall be installed.

- iii. The emission standards prescribed by the MoEF under Environment (Protection) Act for petrochemical industry shall be strictly followed. At no time, the emission levels shall go beyond the prescribed standards. In the event of failure of any pollution control system adopted by the unit, the respective unit shall not be restarted until the control measures are rectified to achieve the desired efficiency. Stack emissions shall be monitored regularly.
- iv. Leak Detection and Repair programme shall be prepared and implemented to control HC/VOC emissions. Focus shall be given to prevent fugitive emissions for which preventive maintenance of pumps, valves, pipelines are required. Proper maintenance of mechanical seals of pumps and valves shall be given. A preventive maintenance schedule for each unit shall be prepared and adhered to. Fugitive emissions of HC from product storage tank yards etc. must be regularly monitored. Sensors for detecting HC leakage shall be provided at strategic locations.
- v. Total SO<sub>2</sub> emissions after implementation of PDPP including IREP shall not exceed 1561.4 Kg/hr.
- vi. Continuous monitoring system for VOCs at all important places/areas shall be ensured. When monitoring results indicate above the permissible limits, effective measures shall be taken immediately.
- vii. Ambient air quality monitoring stations, [PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>x</sub>, H<sub>2</sub>S, mercaptan, non-methane-HC and Benzene] shall be set up in the complex in consultation with Kerala State Pollution Control Board, based on occurrence of maximum ground level concentration and down-wind direction of wind. The monitoring network must be decided based on modeling exercise to represent short term GLCs.
- viii. Ambient air quality data shall be collected as per NAAQES standards notified by the Ministry on 16<sup>th</sup> November, 2009 and trend analysis w.r.t past monitoring results shall also be carried out. Adequate measures based on the trend analysis shall be taken to improve the ambient air quality in the project area.
- ix. The gaseous emissions from DG set shall be dispersed through adequate stack height as per CPCB standards. Acoustic enclosure shall be provided to the DG sets to mitigate the noise pollution. Besides, acoustic enclosure /silencer shall be installed wherever noise levels exceed the limit.
- x. Total fresh water requirement from Kochi Refinery for PDPP shall not exceed 493 m<sup>3</sup>/hr and prior permission shall be obtained from the concerned agency. No ground water shall be used.
- xi. Industrial effluent shall be treated in the effluent treatment plant. Treated effluent shall be recycled/reused in the existing cooling tower. As proposed, high COD effluent shall be incinerated. Water quality of treated effluent shall be monitored regularly. Online water monitoring system shall be installed for important parameters.
- xii. Oil catchers/oil traps shall be provided at all possible locations in rain/ storm water drainage system inside the factory premises.
- xiii. Incinerator designed shall be as per CPCB guidelines.

- xiv. The Company should strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 as amended in October, 1994 and January, 2000. Hazardous waste should be disposed of as per Hazardous Waste (Management, Handling and Trans-boundary Movement) Rules, 2008 and amended time to time.
- xv. Proper oil spillage prevention management plan shall be prepared to avoid spillage/leakage of oil/petroleum products and ensure regular monitoring.
- xvi. The company shall strictly follow all the recommendation mentioned in the Charter on Corporate Responsibility for Environmental Protection (CREP).
- xvii. To prevent fire and explosion at oil and gas facility, potential ignition sources shall be kept to a minimum and adequate separation distance between potential ignition sources and flammable materials shall be in place.
- xviii. All the recommendations mentioned in the rapid risk assessment report, disaster management plan and safety guidelines shall be implemented.
- xix. All the issues raised and commitment made during the public hearing/consultation meeting held on 23<sup>rd</sup> December, 2014 shall be satisfactorily implemented. Accordingly, provision of budget to be kept.
- xx. At least 2 % of the total cost of the project should be earmarked towards the Enterprise Social Commitment (ESC) based on local needs and action plan with financial and physical breakup/details should be prepared and submitted to the Ministry's Regional Office at Bangalore. Implementation of such program should be ensured accordingly in a time bound manner.
- xxi. Green belt shall be developed at least in 40 acres of land in and around the plant premises to mitigate the effects of fugitive emissions all around the plant as per the CPCB guidelines in consultation with DFO. Thick greenbelt with suitable plant species shall be developed around unit. Selection of plant species shall be as per the CPCB guidelines.
- xxii. Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, Safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

**B. GENERAL CONDITIONS:**

- i. The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board (SPCB), State Government and any other statutory authority.
- ii. No further expansion or modification in the project shall be carried out without prior approval of the Ministry of Environment & Forests. In case of deviations or alterations in the project proposal from those submitted to this Ministry for clearance, 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 project authorities must strictly comply with the rules and regulations under Manufacture, Storage and Import of Hazardous Chemicals Rules, 2000 as amended subsequently. Prior approvals from Chief Inspectorate of Factories, Chief Controller of Explosives, Fire Safety Inspectorate etc. must be obtained, wherever applicable.
- iv. 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 EPA Rules, 1989 viz. 75 dBA (daytime) and 70 dBA (nighttime).
- v. A separate Environmental Management Cell equipped with full fledged laboratory facilities must be set up to carry out the environmental management and monitoring functions.
- vi. Adequate funds shall be earmarked towards capital cost and recurring cost/annum for environment pollution control measures and shall be used to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government alongwith the implementation schedule for all the conditions stipulated herein. The funds so provided shall not be diverted for any other purposes.
- vii. The Regional Office of this Ministry/Central Pollution Control Board/State Pollution Control Board will monitor the stipulated conditions. A six monthly compliance report and the monitored data along with statistical interpretation shall be submitted to them regularly.
- viii. A copy of clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parishad / Municipal Corporation, Urban Local Body and the local NGO, if any, from whom suggestions / representations, if any, were received while processing the proposal. The clearance letter shall also be put on the web site of the company by the proponent.
- ix. The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the MOEF, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>x</sub>, HC (Methane & Non-methane), VOCs (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.
- x. The project proponent shall also submit six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitored data (both in hard copies as well as by e-mail) to the Regional Office of MOEF, the respective Zonal Office of CPCB and the SPCB. The Regional Office of this Ministry / CPCB / SPCB shall monitor the stipulated conditions.
- xi. The environmental statement for each financial year ending 31<sup>st</sup> March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company alongwith the status of compliance of environmental conditions and shall also be sent to the respective Regional Offices of the MOEF by e-mail.

xii. 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 and may also be seen at Website of the Ministry of Environment and Forests at <http://envfor.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 Regional office.

xiii. Project authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work.

8.0 The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.

9.0 The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.

10.0 The above conditions will be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, Air (Prevention & Control of Water Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous Waste (Management, Handling and Trans-boundary Movement) Rules, 2008 and the Public Liability Insurance Act, 1991 along with their amendments and rules.

11.0 Environment Clearance is issued to M/s BPCL-Kochi Refinery for Propylene Derivatives Petrochemical Project (PDPP) at Village Puthencruz/Thiruvankulam, Tehsil Kunnathanadu, District Ernakulam, Kerala.

  
(Lalit Bokolia)  
Additional Director

Copy to :-

1. Principal Secretary, Department of Environment & Forest, Govt. of Kerala, Secretariat Annex Building, Room - 604, C Block, 6th Floor, Government Secretariat, Thiruvananthapuram.
2. Chairman, Kerala State Pollution Control Board, Pattom P.O., Thiruvananthapuram
3. Chairman, Central Pollution Control Board, Parivesh Bhavan, CBD-cum-Office Complex, East Arjun Nagar, Delhi - 110032.
4. The Chief Conservator of Forests, Regional Office (Southern Zone, Bangalore) Kendriya Sadan, 4th Floor, E&F Wing, II Block Koramangala, Bangalore-560034.
5. Monitoring Cell, Ministry of Environment, Forests and Climate Change, Indira Paryavaran Bhawan, Jor Bagh, New Delhi-110003.
6. Guard File/Record File.

  
(Lalit Bokolia)  
Additional Director