

F. No. J-11011/344/2016-IA-II(I)
Government of India
Ministry of Environment, Forest and Climate Change
(IA-II Section)

Indira Paryavaran Bhawan
Jorbagh Road, New Delhi - 3

Dated: 11th October, 2018

To

M/s Indian Oil Corporation Limited
Paradip Refinery cum Petrochemical Complex
Village Abhayachandrapur, Tehsil Kujang
District Jagatsinghpur (Odisha)

Sub: Installation of Ethylene Recovery Unit, Mono Ethylene Glycol Unit & BS-VI Facilities by M/s Indian Oil Corporation Limited (IOCL) at Paradip Refinery cum Petrochemical Complex, Village Abhayachandrapur, Tehsil Kujang, District Jagatsinghpur (Odisha) - Environmental and CRZ Clearance - reg.

Sir,

This has reference to your proposal No. IA/OR/IND2/63183/2017 dated 23rd April 2018, submitting the EIA/EMP report on the above subject matter.

2. The Ministry of Environment, Forest and Climate Change has examined the proposal for environmental and CRZ clearance to the project for Installation of Ethylene Recovery Unit, Mono Ethylene Glycol Unit & BS-VI Facilities by M/s Indian Oil Corporation Limited at Paradip Refinery cum Petrochemical Complex, Village Abhayachandrapur, Tehsil Kujang, District Jagatsinghpur (Odisha).
3. The existing land area is 1194 ha and no additional land would be required for the proposed expansion. Industry has already developed greenbelt in an area of 250 ha out of 1194 ha area of the project. Additionally, 53 ha has been planted in Refinery Township, CISF Colony, Balia (Jagatsinghpur) and Kisanagar (Cuttack). Total estimated project cost is Rs 7801 crores. Total capital cost earmarked towards environmental pollution control measures is Rs.1.42 crores and the recurring cost (operation and maintenance) will be about Rs.0.35 crores per annum. Employment during construction phase is estimated to be 1500-2000 persons. Industry proposes to allocate Rs 19.5 crores towards Corporate Environment Responsibility.
4. There are no National Parks, Wildlife Sanctuaries, Biosphere Reserves, Tiger/Elephant Reserves, Wildlife Corridors etc. within 10 km distance from the project site. Santra creek (channel of Mahanadi River) passes through the project site.
5. The details of the proposed facilities/units are as under:-

| S.No. | Unit | Capacity |
|-------|--|--------------|
| 1 | Isomerization Unit | 1100 TMTPA |
| 2 | Indmax Gasoline De-sulphurisation Unit | 1150 TMTPA |
| 3 | Hydrogen Generation Unit | 2 X 60 TMTPA |
| 4 | Kero De-sulphurisation Unit | 300 TMTPA |
| 5 | Diesel Hydro treating Unit | 20% revamp |
| 6 | Mono-ethylene Glycol Unit | 332 KTA |
| 7 | Ethylene Recovery Unit | 180 KTA |

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Product pattern post BS VI/ERU/MEG projects

| Streams | Quantity - TMT/Year) | |
|--------------------------------|----------------------|--------------|
| | Pre Project | Post Project |
| Refinery Products | | |
| Naphtha Exports | 215 | 0 |
| BS-IV MS | 2076 | 0 |
| BS-VI MS | 0 | 3260 |
| Reformate | 1235 | 96 |
| SKO | 312 | 312 |
| ATF Domestic | 463 | 463 |
| BS-IV HSD | 5941 | 0 |
| BS-VI HSD | 0 | 6017 |
| Sulphur | 349 | 350 |
| PetCoke | 1262 | 1253 |
| LPG | 896 | 932 |
| Poly-Propylene | 678 | 678 |
| Fuel & Loss | 1574 | 1641 |
| Petro-chemical Products | | |
| Mono-Ethylene Glycol (MEG) | - | 332 KTA |
| Associated Products: | | |
| Di-ethylene Glycol | - | 24 KTA |
| Tri-ethylene Glycol | - | 1 KTA |

6. Total water requirement is estimated to be 4685 cum/hr (existing- 3861 cum/h, additional - 824 cum/h), proposed to meet from existing Mahanadi river water supply. Total allocated raw water quantity is 6014 cum/h from Mahanadi river.

Total effluent generated from different industrial operations is estimated to be 52 cum/h, which shall be treated in the existing Effluent Treatment Plant and 12 cum/h is proposed to be discharged into deep sea.

Power requirement for the proposed projects are estimated to be 56 MW, which will be met from existing CPP & State Grid.

Emission due to new units under BS-VI & ERU/MEG Projects have been estimated to be 12.9 kg/hr. The total emission after proposed projects will be within 1000 Kg/hr (including MEG/ERU & BS VI project) as per the prescribed standards.

Hazardous waste will be disposed off in secured landfill inside refinery/ nearby authorized landfill agency. Spent catalysts will be sent back to the original supplier/ approved recycler for reprocessing.

7. The project/activity is covered under category A of item 4(a) 'Petroleum Refining Industry' and 5(c) 'Petrochemical complexes' of the Schedule to the Environment Impact Assessment (EIA) Notification, 2006, and requires appraisal at central level by the sectoral Expert Appraisal Committee (EAC) in the Ministry.

8. The terms of reference (ToR) for the project was granted on 28th February, 2017 followed by amendment on 30th May 2017. Public hearing was exempted as per the provisions under para 7(ii) of the EIA Notification, 2006.

9. As per the provisions of the CRZ Notification, 2011, Odisha Coastal Zone Management Authority vide letter dated 11th January, 2018 has recommended CRZ clearance to the project for laying of pipelines over the existing bridge on Santra Creek for the proposed project.



10. The proposal for environmental and CRZ clearance was considered by the EAC (Industry-2) in its meetings held on 29-31 May, 2018 and 25-27 July, 2018. The project proponent and their consultant M/s Engineers India Limited presented the EIA/EMP report. The Committee found the EIA/EMP report complying with the terms and conditions of the ToR, and recommended the proposal for environmental and CRZ clearance to the project with certain conditions.

11. Based on the proposal submitted by the project proponent and recommendations of the EAC (Industry-2), the Ministry of Environment, Forest and Climate Change hereby accords environmental and CRZ clearance to the project for **Installation of Ethylene Recovery Unit, Mono Ethylene Glycol Unit & BS-VI Facilities** by M/s Indian Oil Corporation Limited (IOCL) at Paradip Refinery cum Petrochemical Complex, Village Abhayachandrapur, Tehsil Kujang, District Jagatsinghpur (Odisha), under the provisions of the EIA Notification, 2006 and the CRZ Notification, 2011, read with subsequent amendments therein, subject to compliance of the terms and conditions as environmental safeguards, as under:-

- (i) 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.
- (ii) Necessary authorization required under the Hazardous and Other Wastes (Management and Trans-Boundary Movement) Rules, 2016 and Solid Waste Management Rules, 2016 shall be obtained and the provisions contained in the Rules shall be strictly adhered to.
- (iii) 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.
- (iv) To control source and the fugitive emissions, suitable pollution control devices shall be installed with different stacks to meet the prescribed norms and/or the NAAQS. The gaseous emissions shall be dispersed through stacks of adequate height as per CPCB/SPCB guidelines.
- (v) The project proponent shall take necessary steps to prevent any liquid hydrocarbon falling on the water body of the creek from the pipelines (hydrocarbon) passing over the bridge of Santra creek by creating a tray like barrier below the pipelines which can hold any leakage materials.
- (vi) Total water requirement shall not exceed 4685 cum/hr to be met from Mahanadi River. Necessary permission in this regard shall be obtained from the concerned regulatory authority.
- (vii) Process effluent/any wastewater shall not be allowed to mix with storm water. Storm water drain shall be passed through guard pond.
- (viii) Hazardous chemicals shall be stored in tanks, tank farms, drums, carboys etc. Flame arresters shall be provided on tank farm, and solvent transfer to be done through pumps.
- (ix) 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. The ash from boiler shall be sold to brick manufacturers/cement industry.
- (x) 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.



- (xi) Regular VOC monitoring to be done at vulnerable points.
- (xii) The oily sludge shall be subjected to melting pit for oil recovery and the residue shall be bio-remediated. The sludge shall be stored in HDPE lined pit with proper leachate collection system.
- (xiii) Comprehensive water audit to be conducted on annual basis and report to the concerned Regional Office of MEF&CC. Outcome from the report to be implemented for conservation scheme.
- (xiv) Oil catchers/oil traps shall be provided at all possible locations in rain/ storm water drainage system inside the factory premises.
- (xv) The company shall undertake waste minimization measures as below:-
 - (a) Metering and control of quantities of active ingredients to minimize waste.
 - (b) Reuse of by-products from the process as raw materials or as raw material substitutes in other processes.
 - (c) Use of automated filling to minimize spillage.
 - (d) Use of Close Feed system into batch reactors.
 - (e) Venting equipment through vapour recovery system.
 - (f) Use of high pressure hoses for equipment clearing to reduce wastewater generation.
- (xvi) The green belt of 5-10 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. Selection of plant species shall be as per the CPCB guidelines in consultation with the State Forest Department.
- (xvii) At least 0.25% of the total project cost shall be allocated for Corporate Environment Responsibility (CER) and item-wise details along with time bound action plan shall be prepared and submitted to the Ministry's Regional Office.
- (xviii) 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.
- (xix) 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.
- (xx) 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.
- (xxi) Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.
- (xxii) All terms and conditions stipulated by the State Coastal Zone Management Authority in their recommendation/NOC letter dated 11th January, 2018 shall be strictly adhered to.
- (xxiii) The National Emission Standards for Petroleum Oil Refinery issued by the Ministry vide G.S.R. 186(E) dated 18th March, 2008 and G.S.R. 595(E) dated 21st August, 2009 as amended from time to time shall be followed.

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(xxiv) The National Emission Standards for Petrochemical (Basic & Intermediates) issued by the Ministry vide G.S.R. 820 (E) dated 9th November, 2012 as amended time to time shall be followed.

11.1. The grant of environmental & CRZ clearance is subject to compliance of other general conditions, as under:-

- (i) The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board, Central Pollution Control Board, State Government and any other statutory authority.
- (ii) No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forest and Climate Change. 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 locations of ambient air quality monitoring stations shall be decided in consultation with the State Pollution Control Board (SPCB) and it shall be ensured that at least one station each 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 followed.
- (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 use the same water for the process activities of the project to conserve fresh water.
- (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 also 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, and risk mitigation measures relating to the project shall be implemented.
- (ix) The company shall undertake all relevant measures for improving the socio-economic conditions of the surrounding area. ESC activities shall be undertaken by involving local villages and administration.
- (x) The company shall undertake eco-developmental measures including community welfare measures in the project area for the overall improvement of the environment.
- (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, Forest and Climate Change 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, Zilla Parishad/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 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 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.
- (xvi) The 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 start of the project.

12. The Ministry reserves the right to stipulate additional conditions, if found necessary at subsequent stages and the project proponent shall implement all the said conditions in a time bound manner. The Ministry may revoke or suspend the environmental and CRZ clearance, if implementation of any of the above conditions is not found satisfactory.


 11/10/2018
(S. K. Srivastava)
Scientist E

Copy to: -

1. The Additional PCCF (C), MoEF&CC Regional Office (EZ), A/3, Chandersekharpur, Bhubaneswar - 23 (Odisha)
2. The Secretary, Department of Forest and Environment, Government of Odisha, Bhubaneswar (Odisha)
3. The Member Secretary, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi - 32
4. The Member Secretary, Odisha State Pollution Control Board, Paribesh Bhawan, A/118, Nilakantha Nagar, Unit - VIII, Bhubaneswar -12 (Odisha)
5. Guard File/Monitoring File/Website/Record File


 11/10/2018
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