

F. No.J-11011/15/2015-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: 15th February, 2019

To,

M/s Indian Oil Corporation Limited,
Barauni Refinery,
District **Begusarai** (Bihar)

Sub: Expansion of Barauni Refinery from 6 MMTPA to 9 MMTPA along with polymer units by M/s Indian Oil Corporation Limited at Barauni, District Begusarai (Bihar) - Environmental Clearance - reg.

Ref: Online Proposal No.IA/BR/IND2/28027/2015 dated 2nd February, 2019.

Sir,

This has reference to your online proposal No.IA/BR/IND2/28027/2015 dated 2nd February, 2019 along with the EIA/EMP report containing public hearing proceedings for the above mentioned project.

2. The Ministry of Environment, Forest and Climate Change has examined the proposal for environmental clearance to the project for expansion of Barauni Refinery from 6 MMTPA to 9 MMTPA along with polymer units by M/s Indian Oil Corporation Limited in a total area of 3592921sqm at Barauni, District Begusarai (Bihar).

3. The details of the existing/proposed products are as under:-

S. No.	Product/By-product	Existing (TMTPA)	Proposed (TMTPA)	Total (TMTPA)
1	LPG	318	169.1	487.1
2	Poly Propylene	0	203	203
3	Naphtha	83.4	35.3	118.7
4	MS (BS-VI)	1351.6	372.4	1724.0
5	Aviation Turbine Fuel	204.0	(-)0.8	203.2
6	Superior Kerosene	370.0	0	370.0
7	HSD (BS-VI)	2787.1	1833.9	4621.0
8	Fuel Oil	46.9	(-) 45.9	1.0
9	Bitumen	74.0	0	74.0
10	Carbon Black Feed Stock	0	0	0
11	Raw Pet Coke (LS)	154.0	(-) 30.0	124.0
12	Raw Pet Coke (HS)	0	184.0	184.0
13	Sulfur	21.7	34.3	56.0
14	Fuel & Loss	591	243.0	834
Total		6000	3000	9000

SK

4. Details of existing and proposed process units are as under:-

Existing		Proposed		Final	
Process Unit	Capacity (TMTPA)	Process Unit	Capacity (TMTPA)	Process Unit	Capacity (TMTPA)
AVU I	1750				
AVU II	1750				
AVU III	2500				
		New AVU-IV	9000	New AVU-IV	9000
NSU	800			NSU	800
NHDT + CRU	210	NHDT + CRU	300	NHDT + CRU	300
NHT (ISOM)	183			NHT (ISOM)	183
ISOM	126			ISOM	126
RFCCU	1400	RFCC	1700	RFCC	1700
PRIME G+	840			PRIME G+	840
COKER B	500	COKER B	662	COKER B	662
BITUROX	100			BITUROX	100
DHDT	3300			DHDT	3300
COKER A	600			COKER A	600
Existing SRU	2x40 TPD			Existing SRU	2x40 TPD
HGU	54			HGU	54
NHDT + CCRU	375			NHDT + CCRU	375
		New SRU	2x80 TPD	New SRU	2x80 TPD
		New NHT (ISOM)	360	New NHT (ISOM)	360
		New ISOM	304	New ISOM	304
		New DHDT	1200	New DHDT	1200
		New HGU	61	New HGU	61
		New OHCU	1000	New OHCU	1000
		New PRU	562	New PRU	562
		New PP	200	New PP	200
		New LTU	390	New LTU	390
		New NSU	880	New NSU	880
		New ARU	500 MT/hr	New ARU	500 MT/hr
		New SWS	220 MT/hr	New SWS	220 MT/hr
		New FGTU	6178 kg/hr	New FG TU	6178 kg/hr

5. Existing land area is 3592921 sqm and no additional land is required for the proposed expansion. Industry has already developed greenbelt in an area of 26% i.e. 933124 m² out of total area of the project. The estimated project cost is Rs.8287 crores.

6. There are No National Parks, Wildlife Sanctuaries, Biosphere Reserves, Tiger/Elephant Reserves, Wildlife Corridor etc within 10 km of the project site. Ganga River flows at a distance of 8 km in South.

SKJ

7. Total water requirement is 52104 cum/day, of which fresh water requirement of 24000 cum/day will be met from ground water through artesian wells.

Effluent of 28104 cum/day quantity will be treated in the Effluent Treatment Plant followed by Reverse Osmosis. There will be no discharge of treated/untreated waste water from the unit, and thus ensuring Zero Liquid Discharge.

Power requirement after expansion will be 139000 kVA, to be supplied by Bihar State Power transmission Company Limited. Existing unit has one DG set of 625 kVA. No additional DG set will be required.

Existing unit has six boilers of 525 TPH capacity. One more boiler of 150 TPH will be installed to cater to the proposed expansion. Multi cyclone separator/bag filter with adequate stack height will be provided with the proposed boilers to control the particulate emissions within the statutory limit of 115 mg/Nm³.

8. The project/activity is covered under category A of item 4(a) 'Petroleum refining industry', 5(e) 'Petrochemical products and petrochemical based processing', 5(c) 'Petro-chemical complexes' of the schedule to the EIA Notification, 2006 and requires appraisal/approval at central level in the Ministry.

9. The standard ToR for the project was issued by the Ministry on 16th November, 2017, and public hearing was conducted by the State Pollution Control Board on 5th October, 2018.

10. The proposal was considered by the Expert Appraisal Committee (Industry-2) in its 3rd meeting held on 11th February, 2019. The project proponent and their accredited consultant M/s Envirotech East Pvt Ltd presented the EIA/EMP report as per the ToR.

11. 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 **expansion of Barauni Refinery from 6 MMTPA to 9 MMTPA along with polymer units by M/s Indian Oil Corporation Limited** in a total area of 3592921sqm at Barauni, District Begusarai (Bihar), for a period of one year, under the provisions of the EIA Notification, 2006, and the amendments therein, subject to compliance of the terms and conditions as under:-

(a) Third party assessment for the environmental damage, if any, and differential impacts on environmental parameters due to excess crude processing (during the periods 2009-10, 2010-11, 2012-13, 2013-14, 2015-16 & 2016-17) shall be carried out by NEERI or by any other agency of repute, in a fixed time frame and the report shall be submitted to the Ministry.

(b) Necessary permission as mandated under the Water (Prevention and Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981, as applicable from time to time, shall be obtained from the State Pollution Control Board as required.

(c) As already committed by the project proponent, Zero Liquid Discharge shall be ensured and no waste/treated water shall be discharged outside the premises.

(d) 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.



- (e) 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.
- (f) The National Emission Standards for Petroleum Oil Refinery issued by the Ministry vide G.S.R.186(E) dated 18th March, 2008, as amended from time to time, shall be followed.
- (g) 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.
- (h) Total fresh water requirement shall not exceed 24000 cum/day to be met from ground water through artesian wells. Necessary prior permission in this regard shall be obtained 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 solvent transfer to be done 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. The ash from boiler shall be sold to brick manufacturers/cement industry.
- (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) Regular monitoring for Volatile Organic Compounds shall be carried out at vulnerable points.
- (n) Oily sludge shall be collected for oil recovery and the residue shall be bio-remediated. The sludge shall be stored in HDPE lined pit with proper leachate collection system.
- (o) Comprehensive water audit to be conducted on annual basis and report to the concerned Regional Office of the Ministry. Outcome from the report to be implemented for conservation scheme.
- (p) Oil catchers/oil traps shall be provided at all possible locations in rain/storm water drainage system inside the factory premises.
- (q) The company shall undertake waste minimization measures as below:-
- (i) Metering and control of quantities of active ingredients to minimize waste.
 - (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.



(r) 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.

(s) All the commitments made to the public during public hearing/consultation shall be satisfactorily implemented.

(t) 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.

(u) 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.

(v) 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.

(w) 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.

(x) Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.

(y) Process safety and risk assessment studies shall be carried out using advanced models, and the mitigating measures shall be undertaken accordingly.

11.1 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 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), ensuring that at least one stations 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 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 the Environment (Protection) Act, 1986.
- (vi) The Company shall harvest rainwater from the roof tops of the buildings to recharge ground water, and to 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.
- (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, 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, 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.
- (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

SK

vernacular language of the locality concerned and a copy of the same shall be forwarded to the concerned Regional office of the Ministry.


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 clearance, if implementation of any of the above conditions is not found satisfactory.

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, read with subsequent amendments therein.


15/2/2019
(S. K. Srivastava)
Scientist E

Copy to:-

1. The Additional PCCF (C), Ministry of Environment, Forest and Climate Change, Regional Office, Ranchi Regional Office (ECZ), Bungalow No. A-2, Shyamali Colony, **Ranchi** - 834002 (Jharkhand)
2. The Secretary, Forests & Environment Department, Government of Bihar, 1st Floor, N.H Bhawan, Vishweshwaraiya Complex, Bailey Road, **Patna** -1 (Bihar)
3. The Member Secretary, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, **Delhi** - 32
4. The Member Secretary, Bihar State Pollution Control Board, Beltron Bhawan, 2nd Floor, Lal Bahadur Shastri Nagar, **Patna** - 800 023 (Bihar)
5. Monitoring Cell, Ministry of Environment, Forest and Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, **New Delhi**
6. Guard File/Monitoring File/Record File


15/2/2019
S. K. Srivastava)
Scientist E

