

**F.No.J-11011/359/2016-IA-II(I)**  
Government of India  
Ministry of Environment, Forest and Climate Change  
(Impact Assessment Division)

Indira Paryavaran Bhawan  
Jor Bagh Road, N Delhi - 3  
Dated: 28<sup>th</sup> September, 2017

To,

M/s Crux Biotech India Private Limited  
H.No. 8-3-222/C/1, A-26,  
Madhuranagar, Ameerpet  
Hyderabad -500 038

**Sub: Expansion of Distillery from 60 KLPD to 75 KLPD at Sy.Nos.529 p, 530, 531p, 532p, 536p, 557p, 560p & 564p of Peddavaram Village, Nandigama Mandal, Krishna District (Andhra Pradesh) by M/s Crux Biotech India Private Limited- Environmental Clearance - reg.**

**Ref.: Online proposal no. IA/AP/IND2/60879/2016 dated 10<sup>th</sup> July, 2017**

Sir,

This has reference to your online proposal No. IA/AP/IND2/60879/2016 dated 10<sup>th</sup> July, 2017 along with project documents namely, EIA/EMP Report along with the details on the above subject matter.

2. The Ministry of Environment, Forest and Climate Change has examined the proposal for environmental clearance for expansion of Distillery from 60 KLPD to 75 KLPD at Sy.Nos.529 p, 530, 531p, 532p, 536p, 557p, 560p & 564p of Peddavaram Village, Nandigama Mandal, Krishna District (Andhra Pradesh).

3. The details of existing and proposed products are reported as under: -

S. NO	Unit	Product /By Product	Existing Capacity	Proposed Capacity	After Expansion Capacity
1.	Distillery (with Grains )	Rectified Spirit/ENA/ Ethanol	60 KLPD	15 KLPD	75 KLPD
2.	Power	Electricity	2.5 MW	---	2.5 MW
3.	CO <sub>2</sub> recovery plant	CO <sub>2</sub> (By product)	45.6 TPD	9.6 TPD	55.2 TPD

*Sd/*

4. Existing land area is 28.98 acres and no additional land shall be envisaged for the proposed expansion project. Industry shall develop green belt in an area of 33% i.e., 9.56 acres out of 28.98 acres of area of the project.

5. The proposal is for enhancement of distillery plant production capacity from 60 KLPD to 75 KLPD with process modifications without installing additional machinery, no additional cost for the expansion project is incurred. There shall not be any increase in employment due to the capacity enhancement. The existing plant created employment to 150 people. Rs. 18.2 Lakhs has already been spent on CSR activities in the last 2 years.

6. There are no National parks, Wildlife sanctuaries, Biosphere reserves, Tiger/Elephant reserves, Wildlife corridors etc. within 10 Km of the project site. Krishna river is flowing at distance of 1.3 km in West & North West direction.

7. Ambient air quality monitoring has been carried out at 8 locations during 1<sup>st</sup> December, 2016 to 28<sup>th</sup> February, 2017 and the baseline data indicates the ranges of concentrations as: PM<sub>10</sub> (21.0 to 56.7 µg/m<sup>3</sup>), PM<sub>2.5</sub> (12.6 to 34.0 µg/m<sup>3</sup>), SO<sub>2</sub> (6.9 to 12.7 µg/m<sup>3</sup>), and NO<sub>2</sub> (7.8 to 14.9 µg/m<sup>3</sup>). AAQ modeling study for point source emissions indicates that the maximum incremental GLCs during operation of the proposed expansion project would be 0.16 µg/m<sup>3</sup>, 2.6 µg/m<sup>3</sup> and 0.8 µg/m<sup>3</sup> with respect to PM<sub>10</sub>, SO<sub>2</sub> and NO<sub>x</sub>. The resultant concentrations are within the National Ambient Air Quality Standards (NAAQS).

8. Water requirement for 60 KLPD distillery at the time of Environmental clearance in 2012 is 642 KLD. However, no increase in water requirement due to capacity enhancement and it remains 642 KLD for 75 KLPD capacity also. Water requirement for the distillery plant is being sourced from ground water & Krishna river at a distance of 1.3 km from the plant. Permission has been obtained for drawl of 250 m<sup>3</sup>/day of ground water from State Ground Water Department, GoAP and I & CAD. GoAP has accorded permission to draw 800 KLD of water from Krishna River. Hence no separate water drawl permission is required for the 75 KLPD as the total water requirement remains 642 KLD, whereas permission obtained was 250 KLD + 800 KLD = 1050 KLD.

9. Total wastewater generation as per the existing environmental clearance is 439 KLD. No additional wastewater generation from the proposed expansion project. Thin slop generated is being concentrated in the Evaporation system up to 35% solids (w/w). This concentrated spent wash (35 % Solids) is being sent to the drier along with wet cake generated from Decanter for making DDGS with 90 % solids and the DDGS obtained is sold as cattle feed and fish feed. Due to the capacity enhancement, there shall be no increase in effluent generation. Hence the existing ETP is adequate to treat the effluent from 75 KLPD capacity. The non process effluent is being treated in ETP and utilized for Process, CT makeup, greenbelt development after ensuring compliance with MoEF/SPCB norms.

10. The power requirement for existing plant is 1.6 MW. There shall be no additional power requirement for proposed expansion project. The existing plant is taking power from captive power plant. Existing unit has one DG set of 1250 kVA capacity, there are no additionally DG sets requirement for proposed expansion project.



11. Existing unit has 25 TPH Coal/Biomass fired boiler. Bag filters with stack height of 45 m has been installed for controlling the particulate emissions. Existing 25 TPH boiler will be adequate for expansion project.

12. Details of Solid waste/Hazardous waste generation and its management.

S. No.	Solid waste/Hazardous	Total Quantity (TPD)		Disposal
		60 KLPD	75 KLPD	
1.	DDGS (with 90% solids)	53	58	being sold as cattle/poultry/fish feed
2.	Boiler Ash	27 (with 100% Biomass) (or) 45 (with 100% coal)		Ash generated is being given to brick manufacturers when biomass is used as fuel. Ash generated is being given to brick manufacturers/cement plants when coal is used as fuel.
3	Waste lube oil	0.4 KL/annum		being given to APPCB authorized reprocessors/recyclers.

13. All Distillery with capacity more than 30 KLPD are listed at S.N. 5(g) of schedule of Environmental Impact Assessment(EIA) Notification, under category 'A' and are appraised at Central Level by Expert Appraisal Committee (EAC).

14. The above project proposal for expansion was considered by the Expert Appraisal Committee (Industry-2) in its 17<sup>th</sup> meeting held during 26-29 December, 2016 which recommended Terms of reference for the project. The ToR has been issued by Ministry vide No. J-11011/359/2016- IA. II (I) dated 28/02/ 2017.

15. The proposal was considered by the Expert Appraisal Committee (Industry-2) in its 27<sup>th</sup> meeting held during 28-29, August, 2017. Project Proponent and their accredited consultant M/s Pioneer Enviro Laboratories & Consultants private Ltd have presented EIA / EMP report as per the ToR. 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.

16. Based on the information submitted by the project proponent and recommendations of the EAC, the Ministry of Environment, Forest and Climate Change hereby accords environmental clearance to the project, 'Expansion of Distillery from 60 KLPD to 75 KLPD at Sy.Nos.529 p, 530, 531p, 532p, 536p, 557p, 560p & 564p of Peddavaram Village, Nandigama Mandal, Krishna District, Andhra Pradesh by M/s Crux Biotech India Private Limited' under the provisions of the EIA Notification, 2006, and the amendments therein, subject to the compliance of the terms and conditions 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) As proposed by the project proponent, Zero Liquid Discharge shall be ensured and no waste/treated water shall be discharged outside the premises. The domestic effluent discharge, if any, shall conform to the standards prescribed under the Environment (Protection) Rules, 1986.
- (iii) 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.
- (iv) National Emission Standards for Organic Chemicals Manufacturing Industry issued by the Ministry vide G.S.R. 608(E) dated 21<sup>st</sup> July, 2010 and amended from time to time shall be followed.
- (v) To control source and the fugitive emissions, suitable pollution control devices shall be installed to meet the prescribed norms and/or the NAAQS. Multi-cyclone followed by bag filter shall be provided to the coal fired boiler, if any, to control particulate emissions within permissible limit. The gaseous emissions shall be dispersed through stack of adequate height as per CPCB/SPCB guidelines.
- (vi) Solvent management shall be carried out as follows :
  - (a) Reactor shall be connected to chilled brine condenser system.
  - (b) Reactor and solvent handling pump shall have mechanical seals to prevent leakages.
  - (c) The condensers shall be provided with sufficient HTA and residence time so as to achieve more than 95% recovery.
  - (d) Solvents shall be stored in a separate space specified with all safety measures.
  - (e) Proper earthing shall be provided in all the electrical equipment wherever solvent handling is done.
  - (f) Entire plant shall be flame proof. The solvent storage tanks shall be provided with breather valve to prevent losses.
  - (g) All the solvent storage tanks shall be connected with vent condensers with chilled brine circulation.
- (vii) Total fresh water requirement shall not exceed 1050 m<sup>3</sup>/day, including 250 m<sup>3</sup>/day of ground water and 800 m<sup>3</sup>/day of surface water. No ground water shall be used without prior permission from concerned regulatory authority/CGWA.
- (viii) Industrial/trade effluent shall be segregated into High COD/TDS and Low COD/TDS effluent streams. High TDS/COD shall be passed through stripper followed by MEE and ATFD (agitated thin film drier). Low TDS effluent stream shall be treated in ETP and then passed through RO system.
- (ix) Process effluent/any wastewater shall not be allowed to mix with storm water. Storm water drain shall be passed through guard pond.
- (x) Hazardous chemicals shall be stored in tanks, tank farms, drums, carboys etc. Flame arresters shall be provided on tank farm and solvent transfer through pumps.
- (xi) 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.

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- (xii) 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.
  - (xiii) 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.
  - (xiv) 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.
  - (xv) 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
  - (xvi) At least 5% of the total project cost shall be allocated for Enterprise Social Commitment and item-wise details along with time bound action plan shall be prepared and submitted to the Ministry's Regional Office.
  - (xvii) 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.
  - (xviii) Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.
  - (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, both for emissions and the effluent, shall be installed within the plant site for measurement of discharge and pollutants concentration within the plant site. Data shall be uploaded on the company's website and provided to the respective ROs of MoEF&CC, CPCB and SPCB.
- 16.1** 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) and it shall be ensured that at least one station 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 16<sup>th</sup> 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 and risk mitigation measures 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

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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 31<sup>st</sup> 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.

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

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

19. 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, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and rules.

  
28/9/2017  
(S. K. Srivastava)  
Scientist E

**Copy to:-**

1. The Principal Chief Conservator of Forests (HoFF), Government of Andhra Pradesh, Aranya Bhavan, Sankurathri Residency, Agathavarappadu, Mahatma Gandhi Inner Ring Road, Pedakakani Mandal, **Guntur- 522509 (Andhra Pradesh)**
2. The Additional Principal Chief Conservator of Forests (C), Ministry of Environment, Forest and Climate Change, Regional Office (SEZ), I and II Floor, Handloom Export Promotion Council, 34, Cathedral Garden Road, Nungambakkam, **Chennai – 34**
3. The Chairman, Central Pollution Control Board Parivesh Bhavan, East Arjun Nagar, **Delhi - 32.**

4. The Member Secretary, Andhra Pradesh Pollution Control Board, Paryavaran Bhavan, A-III, Industrial Estate, Sanath Nagar, **Hyderabad** (Andhra Pradesh)
5. Monitoring Cell, Ministry of Environment, Forest and Climate Change, **New Delhi**.
6. Guard File/Monitoring File/Record File.

*SKS*  
28/9/2017  
**(S. K. Srivastava)**  
**Scientist E**