

State Level Environment Impact Assessment Authority-Karnataka

(Constituted by MoEF, Government of India, under section 3(3) of E(P) Act, 1986)

No. SEIAA 10 IND 2015

Date: 10-11-2016

To,

Sri. V R Agrawal
President and unit head
M/s. Grasim industries Limited
Chemical Division, Karwar
P.O Binaga, Karwar
Uttra Kannada District- 581 307

Sir,

Sub:

Expansion of Membrane Cell based Caustic Soda plant (Brown Field Chlor –Alkali Plant) from 59,400 MTPA to 1,00,000 MTPA at Binaga, Karwar Taluk, Uttra Kannada District of M/s. Grasim industries Limited – Issue of Environmental Clearance – Reg.

* * * *

This has reference to your application dated 10th February 2015 addressed to SEIAA, Karnataka and subsequent letters addressed to SEIAA/SEAC, Karnataka seeking prior environmental clearance for the above project under the EIA Notification, 2006. The proposal has been appraised as per prescribed procedure in the light of the provisions under the EIA Notification, 2006 on the basis of the mandatory documents enclosed with the application viz., the Application in Form 1, Pre feasibility Report, EMP/ EIA Report for proposed Expansion of Membrane Cell based Caustic Soda plant (Brown Field Chlor –Alkali Plant) from 59,400 MTPA to 1,00,000 MTPA and the additional clarifications furnished in response to the observations of the SEAC, Karnataka.

2. The proposal is for manufacturing the following Chlor-Alkali chemical products:

Sl. No.:	Products	After expansion total Production capacity in MT/Annum
1	Caustic Soda	1,000,000
2	Chlorine Generation	88,750
3	Hydrochloric Acid (100%)	50,400
4	Liquid Chlorine	39,011

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5	Sodium Hypo Chlorite	720
6	Compressed Hydrogen	7956000NM ³
7	Dilute Sulphuric Acid (78%)	1029

- 3. It is, inter-alia, noted that M/s. Grasim industries Limited have proposed for Expansion of Membrane Cell based Caustic Soda plant (Brown Field Chlor Alkali Plant) from 59,400 MTPA to 1,00,000 MTPA. The total plot area is 10,63,149.65 Sqm (262.71 Acres), out of which 2,19,121.09 Sqm area is built up area, 90,042.56 Sqm area is for roads, 6,53,826.31 Sqm area is for green belt, 79,399.32 Sqm area is for Sludge disposal area and 20,760.37 Sqm is vacant area. Total water consumption is 3,326 KLD will be met from Karnataka urban water supply & drainage board and recycled water, out of which 250 KLD for domestic & gardening purpose, 1876 KLD for Caustic soda plant, 1200 KLD for Phosphoric acid Plant. Power requirement is 32 MW sourced from HESCOM. Existing DG set of capacity 1 No X 2000 KVA for emergency power back-up and existing 1 No X 10 TPH & 1 No X 18 TPH capacity of Coal Fired Boiler. The total cost of the project is Rs.135 Crores.
- 4. The wastewater generation will be 1,525 KLD, out of which 85 KLD will be the domestic sewage and treated in STP of capacity 60 KLD and remaining 25 KLD shall be sent to septic tank followed by soak pit, 1410 KLD will be the phosphoric acid plant effluent shall be treated in ETP of capacity 1440 KLD, 60 KLD will be the Caustic soda plant effluent shall be treated in ETP of capacity 120 KLD. The solid waste generated are Brine Sludge from caustic soda plant of 5 MTPD, Sludge generated in caustic soda ETP of 2.5 MTPA, Sludge from Phosphoric acid plant ETP of 30 MTPD shall be consolidated within the factory premises, STP sludge of 5 Kg/day shall be used as manure and Hazardous waste generated are Used/ spent lub oil of 1.625 KL/Annum shall be sold to Authorized recyclers, Fly ash from the boiler of 6.05 TPD shall be sent to brick manufacturing unit and cement plant.
- The project proposal has been considered by SEAC during the meeting 5. held on 30th & 31st March 2015 and ToR was issued on 10th April 2015 for conducting Environment Impact Assessment (EIA) Study. The project is located within the notified industrial area and hence does not require public consultation. The EIA has been conducted and report submitted by Sri. Mahadevaswamy P S/o Sri Pashupathi, No.66/15, 1st Floor, 1st Cross, 1st Main, Ganganagar, R T Nagar Post, Bengaluru- 560 032, Applicability of the Notification No. S. O 648 (E) dated 3rd March 2016 issued by the MoEF, GoI, regarding mandatory accreditation of Environmental consultants from NABET/QCI stands deferred in this case in view of the interim order ranted by High Court of Karnataka in W. P. No. 15026-15038/2016 (GM-RES) (Sri. Mahadevaswamy Vs. Union of India represented by MoEF &CC, Gol Dept Ecology & Environment, GoK) dated 21.03.2016. The proponent has submitted the EIA report on 14th December 2015 & 18th April 2016.

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- 6. Based on the information submitted by you, presentation made by you and your consultant Sri. Mahadevaswamy P S/o. Sri Pashupathi, No.66/15, 1st Floor, 1st Cross, 1st Main, Ganganagar R T Nagar Post, Bengaluru- 560 032. The State Level Expert Appraisal Committee (SEAC) examined the proposal in the meeting held on 11th & 12th May 2016 and has recommended for issue of Environmental Clearance.
- 7. The SEIAA Karnataka has considered the project in its meeting held on 17th September 2016 and after due consideration of the relevant documents submitted by the project proponent and additional clarifications furnished in response to its observations and the appraisal and recommendation of the SEAC and decided to accord Environmental Clearance in accordance with the provisions of Environmental Impact Assessment Notification-2006 and its subsequent amendments, subject to strict compliance of the following terms and conditions: -

Part A- SPECIFIC CONDITIONS

- 1. Fresh water requirement of 3326 KLD after the proposed expansion shall be met through the Karnataka urban water supply and drainage board only. No ground water shall be tapped in any case for the project requirements.
- 2. Waste water generated from the DM plant, Boiler blow down, HCl preparation, recovery from caustic soda evaporation plant of total 570 KLD shall be reused in process plant.
- 3. 1410 KLD of treated effluent from the existing ETP conforming to the CPCB/KSPCB norms shall be discharged into the sea through existing pipe line.
- 4. The ETP shall be operated regularly and efficiently so as to achieve the prescribed norms at the final outlet.
- 5. The unit shall provide metering facility at the inlet and outlet of the ETPs and maintain the records of the same. The unit shall also provide on line pH meter and TDS meter for online monitoring of the treated effluent.
- 6. A proper logbook of STP/ETP operation and also showing the quantity of effluent generated, utilized for plantation / gardening etc. shall be maintained and furnished to the KSPCB from time to time.
- 7. The gaseous emissions from the boiler/DG set shall be dispersed through stack of adequate height as per CPCB/KSPCB standards shall be provided. Acoustic enclosure shall be provided to the DG sets to mitigate the noise pollution.
- 8. Ambient air quality data shall be collected as per NAAQS standards notified by the Ministry vide G.S.R. No. 826(E) dated 16th September 2009. The levels of PM₁₀, PM_{2.5}, SO₂, NO_X, CO, NH₃, BaP, Cl₂, VQC and HCl shall be monitored in the ambient air and emissions from the stacks and displayed at a convenient location near the main gate of the company and at important public places. The company shall upload the results of monitored data on its website and shall update the same periodically. It

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- shall simultaneously be sent to the Regional office of MoEF Bangalore, SEIAA Karnataka, the respective zonal office of CPCB and the KSPCB.
- 9. Online monitoring system shall be installed on the flue gas and process stacks to monitor the pollutant concentrations. An arrangement shall also be made for reflecting the online monitoring results on the company's server, which can be accessed by the CPCB/KSPCB on real time basis.
- 10. The company shall upload the status of compliance of the stipulated environmental clearance conditions, including results of monitored data on its website and shall update the same periodically. It shall simultaneously be sent to the Regional office of MoEF Bangalore, SEIAA Karnataka, the respective zonal office of CPCB and the KSPCB. The levels of PM₁₀, PM_{2.5}, SO₂, NO_X, CO, Cl₂ and VOC (ambient levels) and emissions from the stacks shall be monitored and displayed at a convenient location near the main gate of the company and at important public places.
- 11. The project proponent shall obtain Authorization for collection, storage and disposal of hazardous waste under the Hazardous and other Wastes (Management and Transboundary Movement) Rules, 2016 for management of hazardous wastes and prior permission from KSPCB shall be obtained for collection / treatment / storage / disposal of hazardous wastes. The concerned company shall undertake measures for firefighting facilities in case of emergency.
- 12. In plant control measures for checking fugitive emissions from all the vulnerable sources shall be provided. Fugitive emissions shall be controlled by providing closed storage, closed handling & conveyance of chemicals/materials, multi cyclone separator and water sprinkling system. Dust suppression system including water sprinkling system shall be provided at loading and unloading areas to control dust emissions. Fugitive emissions in the work zone environment, product, raw materials storage area etc. shall be regularly monitored. The emissions shall conform to the limits stipulated by the KSPCB.
- 13. Regular monitoring of ground level concentration of PM₁₀, PM_{2.5}, SO₂, NOx, Cl₂ NH₃ CO, and HCl shall be carried out in the impact zone and its records shall be maintained. Ambient air quality levels shall not exceed the standards stipulated by Karnataka State Pollution Control Board. If at any stage these levels are found to exceed the prescribed limits, necessary additional control measures shall be provided immediately. The location of the monitoring stations and frequency of monitoring shall be decided in consultation with KSPCB.
- 14. Caustic scrubber shall be provided with Chlorine Absorption unit Hypo Plant and Water / Caustic scrubber shall be provided with HCL plants as Air Pollution Control Equipment for control of Chapter.
- 15. The air pollution control systems shall be operated efficiently and effectively to achieve the norms prescribed by the CPCB/KSPCB at very / stack outlets.
- 16. The air pollution control system shall be designed and bag filter shall be provided to the boilers to control particulate emissions.

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- 17. Third party monitoring of the functioning of the bag filter along with its efficiency shall be carried out once in a year through a reputed institute / organization.
- 18. Imported Coal used in the coal fire boiler shall not exceed 31,104 MT/Annum.
- 19. Imported Coal to be used shall have Sulphur content and Ash content not exceeding 1% and 20% respectively.
- 20. Emission of Sulphur shall not exceed the prescribed standards.
- 21. Boiler ash shall be stored separately as per CPCB guidelines so that it shall 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 shall be avoided.
- 22. The coal to be stored in coal stockyard on impervious layer in a covered shed and along the boundary garland canal to be provided leading to a exit pond/tank to arrest coal dust run-off and to allow settling of coal fines. The coal fines to be removed periodically.
- 23. Adequate storage facility for the fly ash in terms of closed silos shall be provided at site. No ash pond shall be constructed.
- 24. Handling of the fly ash shall be through a closed pneumatic system and Ash shall be handled only in dry state.
- 25. The fly ash shall be supplied to the manufacturers of fly ash based products such as cement, bricks manufacturing, etc. The unit shall strictly comply with the Fly Ash Notification under E (P) Act, 1986 and it shall be ensured that there is 100% utilization of fly ash to be generated from the unit.
- 26. The fugitive emission in the work zone environment shall be monitored. The emission shall conform to the standards prescribed by the concerned authorities from time to time. Following indicative guidelines shall also be followed to reduce the fugitive emission.
 - a. All handling & transport of imported Coal shall be exercised through covered coal conveyors only.
 - b. Enclosure shall be provided at Coal loading and unloading operations.
 - c. Water shall be sprinkled on Coal stock piles periodically to retain some moisture in top layer and also while compacting to reduce the fugitive emission.
 - d. All the vessels used and transfer points in the manufacturing process shall be closed to reduce the fugitive emission.
 - e. Adequate dust suppression/extraction system at crusher house as well as for the Coal stock yard and other vulnerable areas shall be provided to abate dust nuisance
 - f. Accumulated coal dust /fly ash on the ground and other surfaces shall be removed / swept regularly and water the area after sweeping.
 - g. Internal roads shall be either concreted or asphalted or paved properly to reduce the fugitive emission during vehicular movement.
 - h. Air borne dust shall be controlled with water sprinklers at suitable locations in the plant.
 - i. Coal shall be transported through covered trucks only whereas fly ash shall be transported through closed trucks only.

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- j. A green belt shall be developed all around the plant boundary and also along the roads to mitigate fugitive & transport dust emission.
- 27. Unit shall strictly comply with the provisions made in Manufacture Storage and Import of Hazardous Chemicals Rules 1989 as amended in 2000 for handling of hazardous chemicals. All necessary approvals from the concern Govt Authorities shall be obtained before expansion of the project.
- 28. All necessary precautionary measures shall be taken to avoid any kind of accident during storage and handling of toxic / hazardous chemicals, especially chlorine, hydrogen etc.
- 29. Chlorine sensors and Hydrogen sensors with alarm system shall be provided at various locations within plant premises.
- 30. All the materials especially chlorine, hydrogen etc. shall be stored in optimum quantity and all necessary permissions in this regard shall be obtained before commencing the expansion activities.
- 31. The unit shall make the arrangement for protection of possible fire hazards during manufacturing process in material handling. A well designed fire hydrant system shall be installed as per the prevailing standards.
- 32. Storage and use of hazardous chemicals shall be minimized to the extent possible and all necessary precautions shall be taken to mitigate the risk generated out of it. Storage of hazardous chemicals shall be in multiple small capacity tanks / containers instead of one single large capacity tank for safety purpose.
- 33. During material transfer, spillages shall be avoided and garland drain be constructed to avoid mixing of accidental spillages with domestic wastewater or storm water.
- 34. All the storage tanks shall be fitted with appropriate controls to avoid any leakages. Bund/dyke walls shall be provided for storage tanks for Hazardous Chemicals. Close handling system for chemicals shall be provided.
- 35. Personal Protective Equipments shall be provided to workers and its usage shall be ensured and supervised.
- 36. Training shall be imparted to all the workers on safety and health aspects of chemicals handling.
- 37. Occupational health surveillance of the workers shall be done and its records shall be maintained. Pre-employment and periodical medical examination for all the workers shall be undertaken as per the Factories Act & Rules.
- 38. Handling and charging of the chemicals shall be done in such a manner that minimal human exposure occurs.
- 39. Transportation of hazardous chemicals shall be done as per the provision of the Motor Vehicle Act & Rules.
- 40. The overall noise level in and around the plant area shall be kept well within the prescribed standards by providing noise control measures including acoustic insulation, hoods, silencers, enclosures, vibration dampers etc. on all sources of noise generation. The ambient noise levels shall confirm to the standards prescribed under the Environment

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(Protection) Act and Rules. Workplace noise levels for workers shall be as per the Factories Act and Rules.

- 41. Green belt shall be developed in at least 33% of area with suitable species of the plants as per the CPCB guidelines to mitigate the effects of fugitive emissions. Selection of plant species shall be as per the CPCB guidelines.
- 42. The Company shall harvest surface as well as rainwater from the rooftops of the buildings and storm water drains to recharge the ground water and use the same water for the various activities of the project to conserve fresh water.
- 43. The project proponent shall install energy efficient devices and appliances conforming to the Bureau of Energy Efficiency norms.
- 44. The energy audit shall be conducted at regular intervals and the recommendations of the audit report shall be implemented.
- 45. The company shall undertake following waste minimization measures:
 - a. Metering and control of quantities of active ingredients to minimize waste.
 - b. Reuse of by-products from the process as raw materials or raw materials substitutes in other process.
 - c. Use of automated and enclosed filling to minimize spillages.
 - d. Use washing of high pressure hoses for cleaning to reduce wastewater generation
 - e. Leakages from the pipes, pumps, shall be minimal and if occurs, shall be arrested promptly.
- 46. Pucca flooring / impervious layer shall be provided in the work areas, chemical storage areas and chemical handling areas to minimize soil contamination.
- 47. The adequate financial provisions shall be made in the budget of the project for implementation of the above suggested environmental safeguards. Fund so earmarked shall not be diverted for any other purposes.
- 48. All the recommendations made in the EIA/EMP and other documents submitted by the project proponent shall be strictly implemented.
- 49. The project proponent shall comply with the recommendations made in the EIA/EMP/Risk assessment report. Recommendations made in the Risk Assessment Study Report submitted by the project proponent shall be vigorously implemented.
- 50. Storage facilities for the fuel shall be made in the plant area in consultation with Department of Explosives, Nagpur. Disaster Management Plan shall be prepared to meet any eventuality in case of an accident taking place due to storage of Fuel.
- 51. The Project authorities also shall earmark at least 5 % of the total cost of the project towards the corporate social responsibility and item wise details along with time bound action plan shall be prepared and submitted to the Authority.

B. GENERAL CONDITIONS:

1. The project authorities shall strictly adhere to the stipulations made by the Karnataka State Pollution Control Board (KSPCB).

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- At no time, the emissions shall exceed the prescribed limits. In the event of failure of any pollution control system adopted by the unit, the unit shall be immediately put out of operation and shall not be restarted until the desired efficiency has been achieved.
- 3. No further expansion or modifications in the plant shall be carried out without prior approval of the SEIAA/Ministry of Environment and Forests as the case may be. In case of deviations or alterations in the project proposal from those submitted to this Authority for clearance, a fresh reference shall be made to the Authority to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.
- 4. The gaseous emissions (PM₁₀, PM_{2.5}, SO₂, NO_X, NH₃, BaP, CO, VOC) and Particulate Matter along with RSPM levels from various process units shall conform to the standards prescribed by the concerned authorities from time to time. At no time, the emission levels shall go beyond the stipulated standards. In the event of failure of pollution control system(s) adopted by the unit, the respective unit shall not be restarted until the control measures are rectified to achieve the desired efficiency. Stack monitoring for PM₁₀, PM_{2.5}, SO₂, NO_X, CO, VOC shall be carried.
- 5. The project authorities shall strictly comply with the rules and regulations under Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 as amended in October 1994 and January 2000. All transportation of Hazardous Chemicals shall be as per the MVA, 1989. Authorization from the KSPCB shall be obtained for collection, treatment, storage, and disposal of hazardous wastes.
- 6. The project authorities must strictly comply with the rules and regulations with regard to handling and disposal of hazardous wastes in accordance with the Hazardous and other Wastes (Management and Transboundary Movement) Rules, 2016. Authorization from the KSPCB must be obtained for collection/treatment/ storage/disposal of hazardous wastes.
- 7. Application of solar energy should be incorporated for illumination of common areas, lighting for gardens and street lighting in addition to provision for solar water heating. A hybrid system or fully solar system for lighting and heating should be provided. Details in this regard should be submitted to the SEIAA.
- 8. The overall noise levels in and around the plant area shall be kept well within the standards (85 dBA) 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, Rules, 1989 viz. DBA (day time) and 70 dBA (night time).
- 9. The project proponent shall also comply with all the environmental protection measures and safeguards as per the information provided.
- 10. The implementation of the project vis-à-vis environmental action plans shall be monitored by MoEF, Regional Office at Bangalore / KSPCB/ CPCB and the Regional Director (Environment), Department of Environment and

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Ecology, Government of Karnataka, Karwar. A six monthly compliance status report shall be submitted to monitoring agencies.

- 11. The project proponent shall inform the public that the project has been accorded environmental clearance by the SEIAA and copies of the clearance letter are available with the KSPCB and may also be seen at Website of the Authority at http://www.seiaa.kar.nic.in or http://environmentclearance.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 MoEF Regional Office at Bangalore / KSPCB/ CPCB/ and the Regional Director (Environment), Department of Environment and Ecology, Government of Karnataka, Karwar.
- 12. The project authorities shall inform the MoEF Regional Office at Bangalore / KSPCB/ CPCB and the Department of Ecology and Environment, Bangalore, the date of financial closure and final approval of the project by the concerned authorities and the date of start of the project.
- 13. The SEIAA, Karnataka may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
- 14. The SEIAA, Karnataka reserves the right to stipulate additional conditions, if found necessary. The company in a time bound manner will implement these conditions.
- 15. The above conditions will be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 Hazardous and other Wastes (Management and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and rules.
- 16. The issue of Environment Clearance doesn't confer any right to the project proponent to operate / run the project without obtaining statutory clearances / sanctions form all other concerned Authorities.
- 17. Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environmental (Protection) Act, 1986.
- 18. Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.
- 19. Officials from the Department of Environment and Ecology, Bangalore/Regional Office of MoEF Bangalore who would be monitoring the implementation of Environmental safeguards should be given full cooperation, facilities and documents/ data by the project proponents during their inspection. A complete set of all the documents submitted to MoEF / SEIAA should be forwarded to the APCCF, Regional Office of MoEF, Bangalore/ the Regional Director (Environment), Department of Environment and Ecology, Government of Karnataka, Karwar / Regional Officer, KSPCB Bangalore.

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- 20. In the case of any change(s) in the scope of the project, the project would require a fresh appraisal by this Authority.
- 21. The Authority reserves the right to add additional safeguard measures subsequently, if found necessary, and to take action including revoking of the environment clearance under the provisions of the Environment (Protection) Act, 1986, to ensure effective implementation of the suggested safeguard measures in a time bound and satisfactory manner.
- 22. All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Civil Aviation Department, Forest Conservation Act, 1980 and Wildlife (Protection) Act, 1972 etc. shall be obtained, as applicable by project proponents from the competent authorities.
- 23. These stipulations would be enforced among others under the provisions of water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) act 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA Notification, 2006.

24. Under the provisions of Environment (Protection) Act, 1986, legal action shall be initiated against the project proponent if it is found that construction of the Aproject has been started without obtaining environmental charance.

Yours faithfully,

Member Secretary, SEIAA - Karnataka. 0/11/16

Copy to:

- 1) The Secretary, Ministry of Environment, Forests and Climate Change, Indira Paryavaran Bhavan, Jor Bagh Road, Aliganj, New Delhi- 110 003.
- 2) The Member Secretary, Karnataka State Pollution Control Board, Bangalore.
- 3) The APCCF, Regional Office, Ministry of Environment & Forests (SZ), Kendriya Sadan, IV Floor, E & F wings, 17th Main Road, Koramangala II Block, Bangalore 560 034.
- 4) The Regional Director (Environment), Department of Environment and Ecology, Government of Karnataka, Meera Building, Kajubag, Karwar.
- 5) Guard File.