



No. SEIAA/GUJ/EC/4(d) & 1(d)/ 3076 /2015

Date:21-08-2015

BY R.P.A.D
Time Limit

Sub: Environment Clearance for M/s. DCM Shriram Ltd. (Unit: Shriram Alkali & Chemicals Ltd.) for expansion of the existing manufacturing capacity of the Chlor-Alkali plant from 171000 MTPA to 342000 MTPA of caustic soda and captive Coal based Co-generation Power Plant (CPP) from 61 MW to 122 MW within existing premises located at plot No. 749, GIDC Estate, Jhagadia, Dist: Bharuch..... In Category 4(d) & 1(d) of Schedule annexed with EIA Notification dated 14/9/2006.

Dear Sir,

This has reference to your application along with Form-I for expansion project at MoEF vide letter dated 03/04/2014 seeking Environmental Clearance under Environment Impact Assessment Notification, 2006. The project proponent submitted final EIA/EMP report to MoEF&CC on 03/05/2014. The project proponent has submitted final EIA & EMP report vide their letter dated 23/02/2015 to SEAC Gujarat. Later on, the MoEF&CC transferred this case to vide their letter dated 10/03/2015. The project was scheduled for hearing appraisal in the SEAC meeting held on 29/04/2015.

The proposal is for Environmental Clearance for M/s. DCM Shriram Ltd. (Unit: Shriram Alkali & Chemicals Ltd.) for expansion of the existing manufacturing capacity of the Chlor-Alkali plant from 171000 MTPA to 342000 MTPA of caustic soda and captive Coal based Co-generation Power plant (CPP) from 61 MW to 122 MW within existing premises located at plot No. 749, GIDC Estate, Jhagadia, Dist: Bharuch. It is an existing unit proposes for expansion of the existing manufacturing capacity of the Chlor-Alkali plant from 171000 MTPA to 342000 MTPA of caustic soda and captive Coal based Co-generation Power plant (CPP) from 61 MW to 122 MW within existing premises. The capacity of existing and proposed production tabulated below: which falls in the category - 4(d) & 1(d) of the schedule of the EIA Notification-2006:

S. No.	Name of Product	Unit	Existing Capacity	Proposed Capacity	Total Capacity
	Chlor-Alkali				
1	Caustic Soda (Lye/Flakes)	MTPA	1,71,000	1,71,000	3,42,000
2	Chlorine	MTPA	1,48,900	1,48,900	2,97,800
3	Hydrochloric Acid	MTPA	40,000	40,000	80,000
4	Hydrogen	MTPA	4,558	4,558	9,116
5	Sodium Hypo Chloride	MTPA	8,200	8,200	16,400
6	Dilute Sulphuric Acid	MTPA	3,775	3,775	7,550
	Power Generation				
1	Coal Based CPP	MW	61	61	122
2	DG Set (HFO Based)	MW	24	Nil	24

The project activity is covered in 4(d) & 1(d) and is of 'B' Category. Since, the proposed project is located in the notified industrial area and as proposed project categorized as B2 project, public consultation is not required as per paragraph 7(i) (III) (i) (b) & (c) of the Environment Impact Assessment Notification-2006.

The SEAC, Gujarat had recommended the project vide their letter dated 15.07.2015 to grant Environmental Clearance to the SEIAA, Gujarat based on the decision taken during SEAC meeting held on 29.04.2015. The proposal was considered by SEIAA, Gujarat in its meeting held on 07.08.2015 at Gandhinagar. After careful consideration, the SEIAA hereby accords Environmental Clearance to above project under the provisions of EIA Notification dated 14th September, 2006 subject to the compliance of the following conditions.

A. CONDITIONS :**A. 1 WATER:**

1. Fresh water requirement of 12233 KL/Day (12220 KL for Industrial & 13 KL for Domestic purpose) after the proposed expansion shall be met through the GIDC water supply only. Metering of water shall be done and its records shall be maintained. No ground water shall be tapped in any case for the project requirements.
2. The industrial wastewater generation shall not exceed 861 KL/day after the proposed expansion.
3. Waste water generated from the DM plant (240 KL/day) shall be reused in process plant for the preparation of Sodium hypochlorite.
4. Boiler blow down (460 KL/day) shall be reused completely. 260 KL/day shall be reused for cooling towers and 200 KL/day for Soot blower, Ejectors, steam traps etc.
5. After reuse/recycle of 700 KL/day waste water, remaining 861 KL/day of treated effluent conforming to the GPCB norms shall be discharged into the GIDC drain for final disposal by the NCTL into the deep sea.
6. The ETP shall be operated regularly and efficiently so as to achieve the GPCB norms at the final outlet.
7. The domestic waste water generation shall be 13 KL/day and it shall be disposed off through septic tank – soak pit.
8. 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 TOC meter for online monitoring of the treated effluent.
9. A proper logbook of ETP operation and also showing the quantity of effluent generated, utilized for plantation / gardening etc. shall be maintained and furnished to the GPCB from time to time.
10. Regular performance evaluation of the ETP shall be undertaken every year to check its adequacy, through credible institutes like L.D. College of Engineering, NPC or such other institutes of similar repute, and its records shall be maintained.
11. The unit shall join and participate financially and technically for any common environmental facility / infrastructure as and when the same is taken up either by the GIDC or GPCB or any such authority created for this purpose by the Govt. / GIDC.

A. 2 AIR:

12. Additional Blended Coal (Indigenous/Imported /Lignite/ Bio-mass) to the tune of 54,338 MT/hr (476000 MT/Annum) shall be used for the proposed 300 TPH steam Boiler of Coal based power plant.
13. Indigenous/Imported Coal, Lignite & Bio-mass shall be blended in such a way that the Blended coal to be used shall have Sulphur content and Ash content not exceeding 1% and 20% respectively.
14. Additional Hydrogen gas to the tune of 34000 NM³/day shall be used as fuel for the proposed Molten Salt heater.
15. Additional HSD to the tune of 100 MT/Annum shall be used for Startup & Support of Boilers for proposed activities.
16. 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 CL₂ & HCL.
17. Adequate stack height as per prevailing norms shall be provided for the flue gas and process emissions.
18. 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 GPCB on real time basis.
19. The air pollution control systems shall be operated efficiently and effectively to achieve the norms prescribed by the GPCB at vent / stack outlets.
20. High efficiency Electro Static Precipitators (ESP) with efficiency not less than 99.9% shall be installed for control of flue gas emission from the power plant. The ESP shall be operated efficiently to ensure that particulate matter emission does not exceed the GPCB norms. The control system shall be designed and integrated in plant DCS in such a way that if emission from ESP exceeds the specified standard, utilization of boiler capacity shall reduce so that flue gas emission from the stack meets with the specified norms or boiler shall shut down totally.
21. There shall be one extra field in the ESP to ensure that even though one field goes out of order, the prescribed standard of PM is met with. In case of failure of two or more fields of the ESP, the unit shall immediately shut down the power plant.
22. Third party monitoring of the functioning of the ESP along with its efficiency shall be carried out once in a year through a reputed institute / organization.
23. Lime stone injection technology shall be adopted to control SO₂ and it shall be ensured that SO₂ levels in the ambient air do not exceed the prescribed standards.
24. The company shall prepare schedule and carry out regular preventive maintenance of mechanical and electrical parts of ESPs and assign responsibility of preventive maintenance to the senior officer of the company.
25. Adequate storage facility for the fly ash in terms of closed silos shall be provided at site. No ash pond shall be

constructed.

26. Handling of the fly ash shall be through a closed pneumatic system.
27. Ash shall be handled only in dry state.
28. The unit shall strictly comply with the Fly Ash Notification under the EPA and it shall be ensured that there is 100% utilization of fly ash to be generated from the unit.
29. 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 (e.g. Directors of Industrial Safety & Health). Following indicative guidelines shall also be followed to reduce the fugitive emission.
 - All handling & transport of Coal /Lignite/ Bio-mass shall be exercised through covered coal conveyors only.
 - Enclosure shall be provided at Coal /Lignite/ Bio-mass loading and unloading operations.
 - Water shall be sprinkled on Coal /Lignite/ Bio-mass stock piles periodically to retain some moisture in top layer and also while compacting to reduce the fugitive emission.
 - All transfer points shall be fully enclosed.
 - Adequate dust suppression/extraction system at crusher house as well as for the Coal /Lignite/ Bio-mass stock yard and other vulnerable areas shall be provided to abate dust nuisance
 - Accumulated coal dust /fly ash on the ground and other surfaces shall be removed / swept regularly and water the area after sweeping.
 - Internal roads shall be either concreted or asphalted or paved properly to reduce the fugitive emission during vehicular movement.
 - Air borne dust shall be controlled with water sprinklers at suitable locations in the plant.
 - Coal /Lignite/ Bio-mass shall be transported through covered trucks only whereas fly ash shall be transported through closed trucks only.
 - A green belt shall be developed all around the plant boundary and also along the roads to mitigate fugitive & transport dust emission.

30. All the vessels used in the manufacturing process shall be closed to reduce the fugitive emission.
31. Third party performance evaluation of the air pollution control systems including ESP shall be carried out at least once in a year to check its performance and efficiency through a reputed institute / organization like NPC, L.D. College of Engineering -Ahmedabad or such other institutes of similar repute, and its records shall be maintained.
32. Regular monitoring of ground level concentration of PM₁₀, PM_{2.5}, SO₂, NO_x, Cl₂ 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 Gujarat 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 GPCB.

A. 3 SOLID / HAZARDOUS WASTE:

33. The company must strictly comply with the rules and regulations with regards to handling and disposal of Hazardous waste in accordance with the Hazardous Waste (Management, Handling and Transboundary Movement) Rules 2008, as may be amended from time to time. Authorization from the GPCB must be obtained for collection / treatment / storage / disposal of hazardous wastes.
34. ETP sludge & brine sludge shall be stored in separate designated hazardous waste storage facility with pucca bottom and leachate collection facility, before its disposal.
35. Brine sludge shall be disposed off to their own TSDF site within premises.
36. ETP sludge shall be disposed off to their own TSDF site or Common TSDF site based on its characteristics.
37. Discarded containers / barrels / bags / liners shall be either reused or sold only to the authorized recyclers after decontamination.
38. Used oil shall be sold only to the registered recyclers/ re-refiners.
39. For storage of fly ash, closed silos of adequate capacity shall be provided. No ash pond shall be constructed in the project.
40. The fly ash shall be supplied to the manufacturers of fly ash based products such as cement, concrete blocks, bricks, panels, etc. The unit shall strictly comply with the Fly Ash Notification under EPA and it shall be ensured that there is 100% utilization of fly ash to be generated from the unit.
41. All possible efforts shall be made for Co-Processing of the Hazardous waste prior to disposal into TSDF/CHWIF.

A. 4 SAFETY:

42. Provisions of the Manufacture, Storage & Import of Hazardous Chemicals Rules, 1986 & Factories Act, 1948 shall be strictly complied with.
43. Recommendations made in the Risk Assessment Study Report submitted by the project proponent shall be vigorously

44. 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.
45. 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.
46. Stringent safety norms shall be adopted for storage, handling and safe conveyance of chlorine to the nearby costumers through the pipeline.
47. Chlorine sensors and Hydrogen sensors with alarm system shall be provided at various locations within plant premises.
48. 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.
49. A well designed fire hydrant system shall be installed as per the prevailing standards.
50. 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.
51. During material transfer, spillages shall be avoided and garland drain be constructed to avoid mixing of accidental spillages with domestic wastewater or storm water.
52. 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.
53. Tie up shall be done with nearby health care unit for seeking immediate medical attention in the case of emergency, regular medical check up of the workers and keeping its record etc.
54. Personal Protective Equipments shall be provided to workers and its usage shall be ensured and supervised.
55. First Aid Box and required antidotes for the chemicals used in the unit shall be made readily available in adequate quantity.
56. Training shall be imparted to all the workers on safety and health aspects of chemicals handling.
57. 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.
58. Handling and charging of the chemicals shall be done in such a manner that minimal human exposure occurs.
59. Transportation of hazardous chemicals shall be done as per the provisions of the Motor Vehicle Act & Rules.

A. 5 NOISE:

60. To minimize the noise pollution the following noise control measures shall be implemented:
 - ✓ Selection of any new plant equipment shall be made with specification of low noise levels.
 - ✓ Manufacturers / suppliers of major noise generating machines / equipments like air compressors, feeder pumps, turbine generators, etc. shall be instructed to make required design modifications wherever possible before supply and installation to mitigate the noise generation and to comply with the national / international regulatory norms with respect to noise generation for individual units
 - ✓ Regular maintenance of machinery and vehicles shall be undertaken to reduce the noise impact.
 - ✓ Noise suppression measures such as enclosures, buffers and / or protective measures shall be provided.
 - ✓ Employees shall be provided with ear protection measures like earplugs or earmuffs.
 - ✓ Proper oiling, lubrication and preventive maintenance shall be carried out of the machineries and equipments to reduce noise generation.
 - ✓ Construction equipment generating minimum noise and vibration shall be chosen.
 - ✓ Ear plugs and/muffs shall be made compulsory for the construction workers working near the noise generating activities / machines / equipment.
 - ✓ Vehicles and construction equipment with internal combustion engines without proper silencer shall not be allowed to operate.
 - ✓ Construction equipment meeting the norms specified by the EP Act, 1986 shall only be used.
 - ✓ Noise control equipment and baffling shall be employed on generators especially when they are operated near the residential and sensitive areas.
 - ✓ Noise levels shall be reduced by the use of adequate mufflers on all motorized equipments.
61. 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 (Protection) Act and Rules. Workplace noise levels for workers shall be as per the Factories Act and Rules.

A. 6 ENERGY CONSERVATION :

62. The project proponent shall install energy efficient devices and appliances conforming to the Bureau of Energy Efficiency

norms.

63. The energy audit shall be conducted at regular intervals and the recommendations of the audit report shall be implemented.
64. The project proponent shall implement the application of solar energy which shall be utilized as solar lighting for illumination of common areas, lighting of internal roads and passages in addition to utilization of solar water heating systems.
65. The transformers and motors shall have minimum efficiency of 85 %.
66. Variable frequency drives shall be installed.
67. Energy conservation measures shall include use of electronic lighting system, use of CFL tubes to minimize energy use, use of programmable timers for pumping system and lighting, water level controllers for water pumps, centralized cooling etc.
68. Energy saving practices as follows shall be practiced:-
 - ✓ Constant monitoring of energy consumption and defining targets for energy conservation.
 - ✓ Adjusting the settings and illumination levels to ensure minimum energy used for desired comfort level.
 - ✓ Use of solar cells for lighting.
 - ✓ Use of solar water heater for canteen & washing area.
 - ✓ Proper load factor shall be maintained by the unit.
 - ✓ Provision of day light roof to utilize maximum natural light in the production plant instead of electrical lighting.
 - ✓ Use of electronic ballast to save energy.
 - ✓ Automatic switching system for lighting & water tank pumping shall be used.
 - ✓ To the maximum extent possible and technically feasible, energy efficient equipment like motors, pumps, air conditioning systems shall be selected.
 - ✓ Gravity flow shall be preferred wherever possible to save pumping energy.
 - ✓ Promoting awareness on energy conservation.
 - ✓ Training to the staff on methods of energy conservation and to be vigilant for this.

A. 7 CLEANER PRODUCTION AND WASTE MINIMISATION:

69. The unit shall undertake the Cleaner Production Assessment study through a reputed institute / organization and shall form a CP team in the company. The recommendations thereof along with the compliance shall be furnished to the GPCB.
70. 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 of close feed system into batch reactors.
 - e) Dry cleaning / mopping of floor instead of floor washing
 - f) Use of high pressure hoses for cleaning to reduce wastewater generation
 - g) Regular preventive maintenance for avoiding leakage, spillage etc.

A. 8 GREEN BELT AND OTHER PLANTATION:

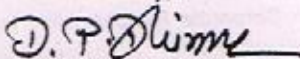
71. The unit shall develop green belt within premises as per the CPCB guidelines. However, if the adequate land is not available within the premises, the unit shall take up adequate plantation on road sides and suitable open areas in the GIDC estate, nearby schools, gram panchayat areas and any other open areas in consultation with the GIDC / local bodies / GPCB and submit an action plan of plantation for next three years to the GPCB.

B. OTHER CONDITIONS:

72. In the event of failure of any pollution control system adopted by the unit, the unit shall be safely closed down and shall not be restarted until the desired efficiency of the control equipment has been achieved.
73. The project authorities must strictly adhere to the stipulations made by the Gujarat Pollution Control Board (GPCB) State Government and any statutory authority.
74. The company shall strictly follow all the recommendations mentioned in the Charter on Corporate Responsibility for Environment Protection (CREP) published by the Central Pollution Control Board, as may be applicable.
75. Pucca flooring / impervious layer shall be provided in the work areas, chemical storage areas and chemical handling areas to minimize soil contamination.
76. Leakages from the pipes, pumps, shall be minimal and if occurs, shall be arrested promptly.
77. All the recommendations made in the EIA/EMP and other documents submitted by the project proponent shall be strictly implemented.
78. A separate Environment Management Cell equipped with full fledged laboratory facilities and qualified personnel shall be set up to carry out the environment management and monitoring functions and a separate budget shall be allocated for

80. The project proponent shall also comply with any additional condition that may be imposed by the SEAC or the SEIAA or any other competent authority for the purpose of the environmental protection and management.
81. The company shall undertake all relevant measures for improving the socio-economic conditions of the surrounding area. CSR activities shall be undertaken by involving local villages and administration.
82. No further expansion or modifications in the plant likely to cause environmental impacts shall be carried out without obtaining prior Environment Clearance from the concerned authority.
83. The above conditions will be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008 and the Public Liability Insurance Act, 1991 along with their amendments and rules.
84. The company shall undertake socio-economic developmental / community welfare activities in consultation with the District Development Officer / District Collector.
85. The project authorities shall earmark adequate funds to implement the conditions stipulated by SEIAA as well as GPCB along with the implementation schedule for all the conditions stipulated herein. The funds so provided shall not be diverted for any other purpose.
86. The applicant shall inform the public that the project has been accorded environmental clearance by the SEIAA and that the copies of the clearance letter are available with the GPCB and may also be seen at the Website of SEIAA/ SEAC/ GPCB. This shall be advertised within seven days from the date of the clearance letter, in at least two local newspapers that are widely circulated in the region, one of which shall be in the Gujarati language and the other in English. A copy each of the same shall be forwarded to the concerned Regional Office of the Ministry.
87. It shall be mandatory for the project management to submit half-yearly compliance report in respect of the stipulated prior environmental clearance terms and conditions in hard and soft copies to the regulatory authority concerned, on 1st June and 1st December of each calendar year.
88. 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 Environment (Protection) Act, 1986.
89. The project authorities shall also adhere to the stipulations made by the Gujarat Pollution Control Board.
90. The SEIAA may revoke or suspend the clearance, if implementation of any of the above conditions is not found satisfactory.
91. The company in a time bound manner shall implement these conditions. The SEIAA reserves the right to stipulate additional conditions, if the same is found necessary.
92. The project authorities shall inform the GPCB, Regional Office of MoEF and SEIAA about the date of financial closure and final approval of the project by the concerned authorities and the date of start of the project.
93. This environmental clearance is valid for seven years from the date of issue.
94. 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.

With regards,
Yours sincerely,



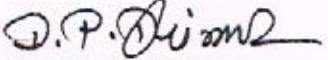
(DARPANA DHIMMAR)
Member Secretary

Issued to:

Mr. K R Valdia,
M/s. DCM Shriram Ltd. (Unit: Shriram Alkali & Chemicals Ltd.)
Plot No. 749, GIDC Estate,
Jhagadia, Dist: Bharuch.

Copy to:-

1. The Secretary, SEAC, C/O. G.P.C.B. Gandhinagar - 382010.
2. The Chairman, Central Pollution Control Board, Parivesh Bhavan, CBD -cum-Office Complex, East Arjun Nagar, New Delhi-110032
3. The Chief Conservator of Forests (Central), Ministry of Environment & Forests, Regional Office (WZ), E-5, Arera Colony, Link Road-3, Bhopal-462016, MP
4. Monitoring Cell, Ministry of Environment and Forests, Paryavaran Bhavan, CGO Complex, New Delhi-110003.
5. The Member Secretary, Gujarat Pollution Control Board, Paryavaran Bhavan, Sector-10 A, Gandhinagar-382010
6. Select File


(DARPANA DHIMMAR)
Member Secretary