ENVIRONMENTAL CLEARANCE

PARIVESH

(Pro-Active and Responsive Facilitation by Interactive, and Virtuous Environment Single-Window Hub)

Government of India
Ministry of Environment, Forest and Climate Change
(Impact Assessment Division)

To,

The COO

GHCL LIMITED

GHCL HOUSE, OPPOSITE PUNJABI HALL, NAVRANGPURA,AHMEDABAD,GHCL HOUSE, OPPOSITE PUNJABI HALL, NAVRANGPURA, AHMEDABAD,Ahmedabad,Gujarat-380009

Subject: Grant of Environmental Clearance (EC) to the proposed Project Activity under the provision of EIA Notification 2006-regarding

Sir/Madam,

This is in reference to your application for Environmental Clearance (EC) in respect of project submitted to the Ministry vide proposal number IA/GJ/IND3/408164/2022 dated 27 Dec 2023. The particulars of the environmental clearance granted to the project are as below.

1.	**EC Identification No.**	**EC24A014GJ150106**
2.	**File No.**	IA-J-11011/293/2021-IA-II(I)
3.	**Project Type**	New
4.	**Category**	A
5.	**Project/Activity including Schedule No.**	4(e) Soda ash Industry
6.	**Name of Project**	“Greenfield Chemical Complex” of GHCL Ltd.
7.	**Name of Company/Organization**	GHCL LIMITED
8.	**Location of Project**	Gujarat
9.	**TOR Date**	N/A

The project details along with terms and conditions are appended herewith from page no 2 onwards.

(e-signed)
A N Singh
Scientist F
IA - (Industrial Projects - 3 sector)

Date: 12/12/2024

Note: A valid environmental clearance shall be one that has EC identification number & E-Sign generated from PARIVESH.Please quote identification number in all future correspondence.

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This has reference to your proposal No. **IA/GJ/IND3/408164/2022**, on the above subject matter.

2. The Ministry of Environment, Forest and Climate Change has examined the proposal seeking Environmental Clearance and CRZ Clearance for Proposed project to produce Light Soda Ash (LSA) of 11,00,000 TPA capacity, 5,00,000 TPA of Dense Soda Ash (DSA) and 2,00,000 TPA Sodium Bicarbonate (SBC) located at near village Bada, Taluka - Mandvi, District - Kutch in the Gujarat by "Greenfield Chemical Complex" of GHCL Ltd.

3. The project/activity is covered under Category 'A' of Item 4 (e) soda ash industry and 1(d) of Schedule of Environment Impact Assessment (EIA) Notification, 2006 (as amended) and requires appraisal at Central Level by the Expert Appraisal Committee (EAC) as the project is located outside the notified industrial area.

4. The ToR was issued by the Ministry, vide letter no. IA-J-11011/293/2021-IA-II(I) dated 10th August, 2021. The PP applied for the Environment Clearance in the Common Application Form and submitted the EIA/EMP Report and other documents. The PP in the CAF reported that it is a Fresh EC case. The proposal was placed in 72nd EAC Meeting held on 2nd January, 2024, 74th EAC meeting held on 6th Februay,2024, 78th EAC meeting held on 30th April,2024 wherein the proposal was deferred for want of requisite information now the proposal is placed in this 80th EAC meeting held on 7th June, 2024 where project was wherein the PP and an accredited Consultant, M/s. T. R Associates [NABET accreditation till NABET Accreditation Number: NABET/EIA/2326/RA 0293 valid till 8th April, 2026], made a detailed presentation on the salient features of the project and informed the following:

5. The PP reported that the Total land area is 5463200 m2; no additional land will be used for proposed project and no R& R is involved in the Project. The details of various products are as follows:

Sr. No.	**Name of the Product**	**Production Capacity (MT/Month)**	**CAS Number**	**End use**
1	Light Soda Ash	11,00,000 TPA	497-19-8	Manufacturing of glass, usage in chemical industry, paper and detergent manufacturing, and food industry
2	Dense Soda Ash	5,00,000 TPA	497-19-8	
3	Sodium bicarbonate	2,00,000 TPA	144-55-8	
Captive Co-generation Power plant Steam (CFBC boilers)			120 MW	
Emergency DG Set			5 MVA	

Note- The production capacities are planned in phased manner and for Phase 1 production capacity for LSA: 5,50,000 TPA, Dense Soda Ash: 2,50,000 TPA, SBC: 1,00,000 TPA and 60 MW for Captive Co-generation Power plant.	

6. The PP reported that there is no violation case as per the Notification No. S.O.804(E) dated 14.03.2017 and no direction is issued under E(P) Act/Air Act/Water Act.

7. The PP reported that there is no National Parks, Biosphere Reserves, Tiger/Elephant Reserves, Wildlife Corridors etc. within 10 km distance from the project site. **Marine National Park and Sanctuary, Jamnagar are located at 75 km aerial distance in South direction and Narayan Sarovar Sanctuary is located at more than 100 km aerial distance in North-West directions**. Flap shell turtle, Green Sea turtle, Indian monitor lizard, Olive Ridley Sea turtle, Black shoulder kite, Eurasian Spoonbill, Indian Peafowl, Marsh Harrier, Oriental Honey Buzzard, Gugal Schedule-I species were found in the study area for which conservation plan has been prepared and submitted to PCCF and Chief wildlife warden dated 9.11.2023. Chief Wildlife Warden, Gujarat vide letter no WLP/32/A/50-52/2023-24 dated 24.04.2023 has granted approval of conservation plan of selected schedule -1 species for greenfield project of M/s GHCL at Bada Village, Mandavi, Kutch, Gujarat. The Conservation plan of Rs. 136.50 Lakhs has been approved which includes components of Habitat Conservation, Protection and improvement; Research and Monitoring; Education and Awareness; Miscellaneous and monitoring.

8. The PP reported that the diversion of 0.9689 ha un-class forest for laying part of sea water intake and effluent disposal pipeline and passage for related construction equipment movement in Kachchh has been obtained vide letter dated 18. 7.2023.

9. The PP reported the Unit has received the Final recommendation letter from GZMA vide file no ENV/ 10/ 2021/184/ T- cell dated 26.12.2023. CRZ details are as given below:

Activities	**Zone**
Construction of process plant and utilities etc.	Outside CRZ area
Effluent collection	Outside CRZ area
Seawater Intake system i.e. sump and pump house	CRZ III
Intake Pipeline	CRZ IA, CRZ IB and CRZ IV
Outfall Pipeline	CRZ IA, CRZ IB and CRZ IV

Laying of Seawater Intake and effluent disposal underground pipeline through tunnel from unclassified Forest area, Sand dune area, intertidal area outside project boundary.

10. The PP reported that **Ambient air** quality monitoring was also carried out at **10 locations** during **December 2022 – February 2023**. The baseline data indicates the ranges of concentrations as: PM_{10} (50.31**µg/m³ to 83.48µg/m³**), $PM_{2.5}$ (**21.65 µg/ m³ to 51.31 µg/ m³**), SO_2 (BDL (DL=5)**to 17.38 µg/m³**), NOx (**16.38µg/m³ to 41.49 µg/m³**), Ozone (BDL (DL=10) **to 19.62 µg/m³**), Ammonia, Carbon Monoxide, Lead (Pb), Arsenic (As), Nickel (Ni), Benzo(α)pyrene(B[a]P) and Benzene results were observed Below Detectable Limit. AAQ modelling study for point source emissions indicates that the maximum incremental GLCs after the proposed project would be **1.23** µg/m³ in case of Lignite, **1.21** µg/m³ in case of Coal and **1.19** µg/m³ in case of Petcoke with respect to PM10, **1.71** µg/m³ in case of Lignite, **0.229** µg/m³ in case of Coal and **1.44** µg/m³ in case of Petcoke with respect to SO_2 and **5.08** µg/m³ in case of lignite, **8.82** µg/m³ in case of coal and **9.50**µg/m³ in case of Petcoke with respect to NO_x, 2.39 µg/m³ in case of NH_3. The resultant concentrations are within the National Ambient Air Quality Standards (NAAQS).

11. The PP reported that the total water requirement for project will be **14,61,038 m³/day** which will be met from **Sea water.** Total Effluent of **14,48,508m³/day** [Domestic - **160 m³/day** + Industrial – **14,48,348m³/day** (fresh seawater for dilution – 5,14,678 m³/day + effluent generation from soda ash & CPP plant – 1,26,830 m³/day + once through cooling – 8,07,000 m³/day] will be generated. The industrial effluent generated (14,48,508 m³/day) i.e. from RO/DM rejects, brine purification reject, distiller waste and boiler blowdown will be mixed with fresh seawater for dilution and wastewater from once-through cooling and treated and disposed into the Arabian Sea as per the recommendation of NIO. The characteristics of the discharge water are within the norms prescribed by CPCB. Domestic effluent (**160 m³/day**) will be treated in the sewage treatment plant and treated sewage will be reused in landscaping & gardening purposes.

12. The PP reported that the Power requirement for proposed project will be 120 MW and will be met from Captive Co-generation Power plant. D. G. Set (5 MVA X 1) [Fuel: HSD (60 KL)] shall be provided and used only in case of power failure. Stack (30 meter) and Retrofit shall provide as per CPCB norms to the DG sets. Industry will provide six Steam Boiler (150 TPH) for captive power plant, six lime kilns and D G sets

13. **Details of process emissions generation and its management:**

SR.NO.	Stack attached to	Capacity	Height of the	Fuel & its Consumption	Expected Pollute	APC System	GPCB Limit

			stack (m)		**nt**		
1	CPP with flue gas desulphurization CFBC Boiler (6 Nos.)	150 TPH	130 m	Imported Coal/Lignite/ Pet coke (Imported Coal: 13,14,000 TPA, Lignite :19,71,000 TPA, Pet coke: 9,12,500 TPA)	SPM SO_2 NO_2 Hg	Individual ESP with each Boiler	PM ≤ 30 mg/Nm^3 SO_2≤ 100 mg/Nm^3 NO_2≤ 100 mg/Nm^3 Hg ≤ 0.03 mg/Nm^3
2	D G Set (2/3 Nos.)	5 MVA	30 m	HSD (60 KL)	HC CO PM NO_x	Retrofitting	NOx 710 ppmv NMHC 100 mg/Nm3 PM 75 mg/Nm3 CO 150 mg/Nm3
3	Lime Kiln 1		68 m	Coke or Briquette or Anthracite (Coke - 1,30,000 TPA, Briquette- 1,55,000 TPA, Anthracite - 1,10,000 TPA)	SPM SO_2 NO_2	Scrubber and Dust Collector system	SPM ≤ 150 mg/Nm^3 SO_2≤ 100 ppm NO_2≤ 50 ppm
4	Lime Kiln 2		68 m			Scrubber and Dust Collector system	
5	Lime Kiln 3		68 m			Scrubber and Dust Collector system	
6	Lime Kiln 4		68 m			Scrubber and Dust	

						Collector system	
7	Lime Kiln 5		68 m			Scrubber and Dust Collector system	
8	Lime Kiln 6		68 m			Scrubber and Dust Collector system	

SR.NO.	**Stack attached to**	**Height of the stack (m)**	**Expected Pollutant**	**APC System**
1	Ammonia Recovery system	42 m	Ammonia	Water scrubber
2	Lime grinding system / Slaker	65 / 20 m	PM / Water vapor	Bag filter / Adequate stack height
3	Calciner unit	37 m	PM	Scrubber, Bag filter
4	Densification	43 m	PM	Scrubber
5	Sodium Bi-Carbonate Unit	30 m	PM	Bag filter
6	Lime Kiln	Closed system	PM	Scrubber and Wet ESP

14. **Details of Solid Waste/ Hazardous Waste Generation and Its Management**:

Sr. No.	**Type of Waste**	**Category**	**Quantity**	**Mode of Disposal**
1	Settled Sludge from treatment of effluent generated from captive power plant & RO/DM Plant	35.3	1.0 MT/Annum	Collection, storage and disposal at approved TSDF site
2	Used Oil	5.1	12 KL	Collection, storage and used within premises as a lubricant / sold to

				registered recycler
3	Discarded Drums and Bags	33.1	6.45 MT/Annum	Collection, storage & sold to authorized vendor
4	Spent Ion exchange resin	35.2	3000 Lit/Annum	Collection, storage and disposal at approved TSDF site
5	Used Cotton	33.2	5 MT/Annum	Collection, storage and disposal at approved CHWIF site
6	Lead acid Batteries	Schedule-IV (17)	5 MT	Collection, storage & sold to authorized agency through auction
7	E-Waste	Schedule-I of E-Waste (Management) Rules, 2022	5 MT/ Annum	Collection, storage & sold to authorized agency through auction
8	Plastic Waste	-	2295 MT/Annum	Collection, Storage and Disposal to CPCB/SPCB authorized recyclers under EPR of Plastic Waste Management
9	Bio-medical Waste	-	0.035 MT/Annum	Collection, storage and disposal at as per Bio-medical Waste Management Rules, 2016
10	Construction and Demolition Waste	-	20 TPD	Collection, storage and utilize internally for area filling, road making etc.

Non-Hazardous Solid Waste Details

Sr. No.	Type of Waste	Source of Generation	Quantity	Mode of Disposal

1	STP sludge	STP	1152 MT/Annum	Reused as Manure in Greenbelt Development
2	Kitchen Waste	Canteen	0.01 MT/Day	Collected and composted in Composter and further used as manure for gardening in the premises
3	Ash (Fly ash & Bottom Ash)	Boiler	2726.847 TPD	Collection in silos, storage & sold to cement Manufacturing/ Brick Manufacturing
4	Limestone rejects	Desulphurization Process	1,00,000 MT/Annum	Collection and reused in Boiler for desulphurization and as a sweetener in cement industry, road making, pavement etc.

15. The Budget earmarked towards the Environmental Management Plan (EMP) is ₹ **320.73 crore** (capital) and the Recurring Cost (operation and maintenance) will be about ₹ **7.53 Crore** per Annum. Industry proposes to allocate ₹ **20.69 Crore** per annum towards CER. Break-up of capital cost and recurring cost earmarked for implementation of EMP is as given below:

ASPECT OF ENVIRONMENTAL MANAGEMENT	**COST IN CRORE [RS.]**	**RECURRING COST (CRORE /ANNUM) [RS.]**	**REMARKS**
Air Pollution	89.28	1.50	Capital cost would include air pollution control devices like ESPs, Scrubbers, Dust extraction and suppression systems, Stacks, Dry Fog system, Wind screen and the recurring cost would include operation and maintenance of pollution control devices
Water Pollution	14	0.12	Capital cost would include cost of ETP, STP and recurring cost would include operation and maintenance of pollution control

			devices
Noise Pollution	2.9	0.0035	Capital cost would include providing adequate sound enclosures for TG, CO-compressor, DG Set
Hazardous / Solid Waste Management	1.05	1.10	Capital cost would include expense for providing storage area for hazardous waste and membership charges of TSDF/CHWIF Site and recurring cost would be for solid/ hazardous waste disposal charges and Sampling & analysis charges of solid waste.
Environmental monitoring Programme	3.4	1.30	Capital cost would include expense OCEMS, Online weather station, online pH, NH3-N, Temp meter and recurring cost would include monitoring and analysis of noise level., Sample analysis charges & ambient air & fugitive emission sampling & analysis charges etc., Fresh water & wastewater sample analysis charges etc. Soil: recurring cost would be for Soil Sample analysis., Marine area environment monitoring
Green Belt	20	0.5	Capital cost would include development of green belt within the project premises and recurring cost would include maintenance charges and manpower salary etc.
Renewable Energy	113	--	Capital cost would include Installation of Solar and Windmill

Fire safety & Occupational Health & Safety	3.41	0.35	Capital cost would include cost of OHS center, PPEs, fire & safety instruments and recurring cost would include maintenance charges and training, audit & health check-up etc.
Miscellaneous	53	2.66	Miscellaneous activity such as development of rain water harvesting system, Drainage Network for rain water, Environmental laboratory, Environmental Management system, miscellaneous study, statutory application fees, audit, training cost etc. and recurring cost would include biodiversity management plan, hiring of EMC and Conservation Plan for Schedule 1 species.
CER	20.69	--	Capital cost would include cost of CER activities such as promoting renewable energy, skill development Programme, Organic farming, water conservation (like village pond deepening), forestry etc. and develop infrastructure of schools, health facilities, Fishing activities, roads in nearby villages, Installation of additional solar street lights in nearby villages and Installation of a suitable capacity Sewage Treatment Plant with proper consultation with local administration in Bada Village.
Total (EMP + CER)	320.73	7.53	

Break up of CER activities is as given below:

Sr. No.	Type of Activities	Yearly amount to be spent in CER activities (Rs. In Crore)					Total Amount to be spent (Rs. in crore)
		1st Year	2nd Year	3rd Year	4th Year	5th Year	
1.	Provision of Solar light, solar panel and its maintenance in nearby villages within 10 km of study area.	0.10	0.10	0.10	0.10	0.10	0.50
2.	Infrastructure development Such as primary healthcare units and the fulfilment of the basic amenities in PHCs including mobile medical van and Provide Bala-Rasayana to Malnutrition Children in Aanganwadi and PHC of nearby Villages.	0.00	0.27	0.29	0.31	0.35	1.22
3.	Animal husbandry promotion through providing support for breed improvement, animal health care, Veterinary doctor and others as well as provides Fodder for cattle feeding nearby villages.	0.80	0.85	0.90	0.90	0.90	4.35
4.	Infrastructure development for quality of education, which will ultimately upgrade schools in nearby villages.	0.25	0.27	0.29	0.31	0.35	1.47

5.	Development Initiatives for Fishing Communities such as Creation of infrastructure like ice plants, cold storages as well as provide operational inputs such as fishing boats, nets and engines.	0.15	0.15	0.15	0.15	0.15	0.75
6.	Promoting environment friendly and nature-based solutions to enhance productivity of farming (Organic Farming) activities. It covers capacity building on farming techniques, provision of highquality seeds/manure, efficient irrigation solutions, etc.	0.60	0.60	0.60	0.60	0.60	3.00
7.	Promoting activities for skill building to improve employment opportunities and women empowerment in nearby villages.	0.45	0.45	0.45	0.45	0.45	2.25
8.	Development of facilities within nearby villages such as roads.	0.20	0.20	0.20	0.20	0.20	1.00
9.	Activities for water conservation like deepening of nearby village ponds for storage of rainwater for domestic use of villagers.	0.50	0.50	0.50	0.50	0.50	2.50
10.	Promoting plantation activities through Forests by Heartfulness Institute in nearby villages.	0.20	0.20	0.20	0.20	0.20	1.00

11.	Installation of 100 solar street lights in nearby villages, namely Bada, Janakpur, Bhinsara, Panchotiya, Layja Mota, Layja Nana, Bhada, Bayath, Mapar, Bambhadai, Modhkuba and Padamapar. (Already 200 solar lights have been considered in point no. 1)	0.05	0.05	0.05	0.05	0.05	0.25
12.	Installation of a suitable capacity Sewage Treatment Plant with proper consultation with local administration in Bada Village.	-	0.10	2	0.30	-	2.40
Total		**3.30**	**3.74**	**5.73**	**4.07**	**3.85**	**20.69**

16. The PP proposed to set up an Environment Management Cell (EMC) by engaging Environment officials for the functioning of EMC.

17. The PP submitted the Disaster and Onsite and Offsite Emergency Plans in the EIA report.

18. The estimated total project cost is **Rs.3563.08 Crores**. Total Employment will be **1200** persons as direct.

The Committee noted that Terms of reference (TOR) were granted by MoEF&CC on 10 August 2021. Further, PP has carried out various studies required for EIA and CRZ clearance namely (i) EIA Report; (ii) Marine EIA Report prepared by CSIR- NIO (Mumbai, Goa); (iii) Marine EIA Addendum Report prepared by CSIR- NIO (Mumbai, Goa); (iv) CRZ Report prepared by IRS, Anna University, Chennai; (v) CRZ Approved Maps prepared by IRS, Anna University, Chennai; (vi) Conservation Plan of Sea Turtle prepared by ZSI, Kolkata; (vii) Conservation & management plan for the conservation of Significant species prepared by GUIDE, Kachchh (viii) Conservation Plan for Sand Dune by CSIR-NIO, Mumbai etc.

Further, based on EAC recommendations, M/s T R Associates, NABET-accredited consultant has carried out additional 3 months data collection as well as additional 1 month data to valid the existing study and also submitted the undertaking that they have verified the EIA/EMP report and prepared an addendum report describing findings and observations. It was also presented that they have not observed any significant deviation in the EIA report prepared by the national repute organisation NEERI. The Committee also noted that PP has obtained CRZ Recommendation letter from GCZMA; Approval for Conservation Plan of Significant Species from PCCF, Gandhinagar as well as Stage-I and Stage-II Forest Clearances. The Committee noted that PP has submitted the relevant information in compliance to the OM dated 7th October, 2014 for status of land acquisition w.r.t. project site while considering the case for environment clearance under EIA Notification, 2006.

19. Intake pipeline and outfall pipeline fall in CRZ 1A, 1B and IV area as per demarcation. It was reported that construction of process plant and utilities fall outside the CRZ area. SCZMA recommendation has been obtained for Laying of Seawater Intake and effluent disposal underground pipeline through tunnel from unclassified Forest area, Sand dune area, intertidal area outside project boundary.

20. Public hearing was conducted by Gujarat Pollution Control Board on 17.10.2022, which was presided by SDM/Dy Collector. Major issues raised during public hearing were related to the Conservation of sand dunes, Environmental management plan, proximity to Vipassana meditation centre, Conservation of Ecology and Biodiversity, Accreditation of Consultants, environmentally sensitive receptor distances, employment, etc and PP submitted action plan to address the issues.

21. The proposal was considered by the Expert Appraisal Committee (Industry-3 sector) in its **72nd EAC Meeting held on 2nd January, 2024**, **74th EAC meeting held on 6th Februay,2024, 78th EAC meeting held on 30th April, 2024, wherein the proposal was deferred for want of requisite information now the proposal is placed in this 80th EAC meeting held on 7th June, 2024** where project was wherein the PP and an accredited Consultant, M/s. T. R Associates [NABET accreditation till **NABET Accreditation Number: NABET/EIA/2326/RA 0293 valid till 8th April, 2026**], made a detailed presentation on the salient features of the project. The minutes of the meeting are available on PARIVESH.

22. After, recommendation of the 80th EAC meeting held on 7th June for grant of EC, matter was examined in the Ministry and observed that the large number of written representations received in the ministry and the issues involved. Accordingly, it was decided to undertake site visit by the sub-committee of EAC (Industry -3) to

understand the ground situation. Based on the outcome of the same, project may be reconsidered by the EAC for further decision.

23. In the 84th EAC held on 21-22 August, 2024, the EAC constituted a sub-Committee to undertake a site visit and submit the report to the Committee for further consideration of the proposal. Further, the Sub-Committee visited the site of "Greenfield Chemical Complex" of M/s GHCL Ltd. on 09.10.2024.

24. Based on the site visit report, the proposal was again placed in the 87th EAC (Industry-3) meeting held on 21.10.2024. The proposal was considered by the EAC in its meeting held on 21st October, 2024 and the Committee discussed the site visit report undertaken by the Sub- Committee. Further the following issues were also discussed with project proponent.

PP informed the following :

(i) M/s. GHCL Limited will acquire a total of **546.3200 hectares** for the proposed project. In alignment with this requirement, steps have been initiated in accordance with the terms outlined in a Memorandum of Understanding (MOU) with consolidators. While the acquisition process is progressing, advances related to this have been planned and are being executed to ensure the necessary land acquisitions are in place prior to the commissioning of the project. Furthermore, 33% of the total identified area will be allocated for the development of a dedicated greenbelt, reinforcing our environmental commitment.

(ii) That M/s. GHCL Limited is committed to developing and maintaining an average **100 m wide greenbelt** (towards Vipassana centre/Bada village) in NW and North direction facing the entrance road. Also approximately an average **30-50 m wide greenbelt** in NE direction within the plant boundary, as per its environmental responsibility, which will be a part of total 33% greenbelt area.

(iii) That M/s. GHCL Limited will provide a Continuous Ambient Air Quality Monitoring Station (CAQMS) within the plant, towards the Vipassana Center, to ensure continuous monitoring and compliance.

(iv) That the M/s. GHCL Limited will provide an intermittent sprinkling system on both sides of the road and transportation route within plant, extending up to the storage yard, to effectively mitigate and control fugitive emissions during the transportation.

(v) That the M/s. GHCL Limited ensures that paghadiya fishing activities will not be disrupted due to the project activities, during both the construction and operation phases due to micro tunnelling operation in inter-tidal zone. The company commits to taking all necessary measures to prevent any interference with local paghadiya fishing practices.

(vi) That the M/s. GHCL limited will install flow meters at the effluent discharge system. Also, SS monitoring system shall be installed if reliable system is available.

(vii) PP informed that the depth of micro-tunnelling depends on the topography. It will be approximately 14-15 meters below MSL and 5-6 meters below the seabed, extending beyond the intertidal zone.

(viii) The PP informed that local employment will be provided for the project as per the norms of State Government .

(ix) PP submitted the revised CER activities.

(x) PP submitted the revised capital cost and recurring cost earmarked for implementation of EMP.

The committee was satisfied with the response provided by PP on above information.

25. The EAC (Industry -3) in its 87th meeting held on 21st October, 2024, after detailed deliberations, recommended the project for the grant of environmental clearance and CRZ Clearance.

26. The EAC constituted under the provisions of the EIA Notification, 2006 comprising expert members /domain experts in various fields, examined the proposal submitted by the PP in desired format along with the EIA/EMP reports prepared and submitted by the Consultant accredited by the QCI/ NABET on behalf of the PP.

27. The EAC noted that the PP has given an undertaking that the data and information given in the application and enclosures are true to the best of his knowledge and belief and no information has been suppressed in the EIA/EMP reports. If any part of data/information submitted is found to be false/ misleading at any stage, the project will be rejected and Environmental Clearance given, if any, will be revoked at the risk and cost of the PP.

28. The EAC noted that the EIA reports are in compliance with the ToR issued for the project, reflecting the present environmental status and the projected scenario for all the environmental components. The EAC deliberated on the proposed mitigation measures towards Air, Water, Noise and Soil pollutions. The EAC advised that the storage of toxic/explosive raw materials/products shall be undertaken with utmost precautions and following the safety norms and best practices.

29. The EAC deliberated on the Onsite and Offsite Emergency plans and various mitigation measures to be proposed during the implementation also of the project and advised the PP to implement the provisions of the Rules and guidelines issued under the Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rules, 1989, as amended time to time, and the Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996.

30. The EAC deliberated on the proposal with due diligence in the process as notified under the provisions of the EIA Notification, 2006, as amended from time to time and accordingly made the recommendations to the proposal. The expert members of the EAC found the proposal in order and recommended for grant of environmental clearance.

31. The EAC is of the view that its recommendation and grant of environmental clearance by the regulatory authority to the project/activity is strictly under the provisions of the EIA Notification 2006 and its subsequent amendments. It does not tantamount/construe to approvals/consent/permissions etc. required to be obtained or standards/conditions to be followed under any other Acts/ Rules/ Subordinate legislations, etc., as may be applicable to the project. The PP shall obtain 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, from the State Pollution Control Board, prior to construction & operation of the project.

32. Based on the proposal submitted by the project proponent and recommendations of the EAC (Industry-3), Ministry of Environment, Forest and Climate change hereby accords Environmental and CRZ clearance to the project for proposed **project to produce Light Soda Ash (LSA) of 11,00,000 TPA capacity, 5,00,000 TPA of Dense Soda Ash (DSA) and 2,00,000 TPA Sodium Bicarbonate (SBC) located at near village Bada, Taluka - Mandvi, District - Kutch in the Gujarat by "Greenfield Chemical Complex" of GHCL Ltd**. under the provisions of the EIA Notification, 2006, subject to the compliance of terms and conditions as under:-

A. Specific Conditions:

(i) PP shall ensure that recommendations of SCZMA issued vide letter dated ENV/10/2021/187/T-Cell, dated 26/12/2023 for proposed greenfield chemical complex, sea water intake and effluent disposal facilities shall be implemented. Recommendations mentioned in Marine EIA Report; Conservation Plan of Sea Turtle report; Conservation & management plan for the conservation of Significant species prepared by GUIDE, Kachchh; Conservation Plan of Sand Dune by CSIR-NIO, Mumbai shall be implemented.

(ii) PP shall ensure that conditions stipulated in letter dated 18.07.2023 for diversion of 0.96ha unclass forest and letter dated 4.01.2024 for final stage II are implemented.

(iii) ESP alongwith Stack height of 130 m shall be provided to Imported

Coal/Lignite/ Pet coke fired with flue gas desulphurization 150TPH CFBC Boiler (6 Nos.) to control the particulate emission as per CPCB norms. Stack height of 30 m shall be provided to 5 MvA DG set(2/3 nos). Scrubber and Dust Collector system alongwith stack height of 68 m shall be provided to Coke or Briquette or Anthracite fired lime kiln to control the particulate emission as per CPCB norms. Water scrubber system alongwith stack height of 42m shall be provided to ammonia recovery system. Bagfilter alongwith adequate stack height shall be provided to lime grinding system/slaker. Scrubber, Bag filter shall be provided to Calciner unit. Scrubber shall be provided to Densification. Bagfilter shall be provided to Sodium bicarbonate unit. Scrubber and wet ESP shall be provided to lime kiln.

(iv) PP shall install continuous ambient air quality monitoring station towards Vipasana Centre to monitor real time ambient air quality status of the area.

(v) 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 servers. 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.

(vi) Total fresh water requirement from sea water shall not exceed 14,61,038 m3/day.

(vii) NOC from the Concerned Local authority shall be obtained before start of the construction of plant and drawing of the ground water for the project activities, State Pollution Control Board / Pollution Control Committees shall not issue the Consent to Operate (CTO) under Air (Prevention and Control of Pollution) Act and Water (Prevention and Control of Pollution) Act till the project proponent shall obtain such permission.

(viii) Total Effluent generation shall not exceed 14,48,508m3/day [Domestic - 160 m3/day + Industrial – 14,48,348m3/day (fresh seawater for dilution – 5,14,678 m3/day + effluent generation from soda ash & CPP plant – 1,26,830 m3/day + once through cooling – 8,07,000 m3/day]. The industrial effluent generated i.e. from RO/DM rejects, brine purification reject, distiller waste and boiler blowdown shall be mixed with fresh seawater for dilution and wastewater from once-through cooling and treated and disposed into the Arabian Sea as per the recommendation of NIO and after achieving the prescribed norms of CPCB/SPCB. Domestic effluent (160 m3/day) shall be treated in sewage treatment plant and treated sewage will be reused in landscaping & gardening purposes.

(ix) The Pipeline of seawater intake and effluent disposal shall be laid in a safe manner (using tunnelling) so that the sand dunes stretch between the plant boundary and respective land fall points are protected without any disturbance to their natural appearance and stability.

(x) GHCL Limited shall ensure that paghadiya fishing activities shall not be disrupted due to the project activities, during both the construction and operation phases due to micro tunnelling operation in inter-tidal zone. The company commits to taking all necessary measures to prevent any interference with local paghadiya fishing practices

(xi) PP shall ensure that no /untreated/treated water from the project site shall be discharged into seasonal water stream.

(xii) PP shall ensure the implementation of conservation plan of Rs. 136.50 Lakhs for schedule – I species as approved by Chief Wildlife Warden, Gujarat vide letter no WLP/32/A/50-52/2023-24 dated 24.04.2023 for greenfield project of M/s GHCL at Bada Village, Mandavi, Kutch, Gujarat.

(xiii) The PP shall develop greenbelt of at least 30-50 m width over an area of 18,02,856 m2(33%) within the project site mainly along the plant periphery, preferably within a year of the grant of EC. PP shall develop and maintain an average **100 m wide greenbelt** (towards Vipassana centre/Bada village) in NW and North direction facing the entrance road. Also approximately an average 30-50**m wide greenbelt** in NE direction within the plant boundary, as per its environmental responsibility, which will be a part of total 33% greenbelt area. The tree saplings selected for the plantation should be of sufficient height, preferably 6-ft shall be planted in greenbelt area. The budget earmarked for the plantation shall be kept in a separate account and should be audited annually. The PP shall annually submit the audited statement along with proof of activities viz. photographs (before & after with geo-location date & time), details of expert agency engaged, details of species planted, number of species planted, survival rate, density of plantation etc. to the Regional Office of MoEF&CC before 1st July of every year for the activities carried out during previous year.

(xiv) Plantation of saplings shall be carried out as a part of tree plantation campaign "EK PED MA ke NAAM" and details of the same to be uploaded in the MeriLiFE portal (https://merilife.nic.in) in respect to this Ministry's OM No. IA3-22/3/2024-IA.III(E-241594) dated 24th July 2024.

(xv) A separate Environmental Management Cell (having qualified persons with Environmental Science/Environmental Engineering/specialization in the project area) equipped with full-fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions and shall also engage Environment Officials. IN addition to this one safety & health officer as per the qualification given in Factories Act 1948 shall be engaged within a month of grant of EC. PP should annually submit the audited statement of amount spent towards the engagement of qualified persons in EMC along with details of person engaged to the Regional Office of MoEF&CC before 1st July of every year for the activities carried out during previous year.

(xvi) 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 relating to the project shall be implemented. The budget proposed under EMP is ₹320 crore (Capital cost) and ₹ 7.53 Crore per annum (Recurring cost) shall be kept in separate account and should be audited annually. The PP should submit the annual audited statement along with proof of implementation of activities proposed under EMP duly supported by photographs (before & after with geo-location date & time) and other document as applicable to the Regional Office of MoEF&CC before 1st July of every year for the activities carried out during previous year.

(xvii) PP shall ensure the time bound implementation of CER activities of Rs. 20.69 Crores

(xviii) M/s GHCL shall take up initiatives to restore the water quality of the water pond located near Vipasna Centre. M/s GHCL shall carry out tree plantation drive along road of Bada Village in consultation with Village Administration.

(xix) No banned chemicals shall be manufactured by the project proponent. No banned raw materials shall be used in the unit. The project proponent shall adhere to the notifications/guidelines of the Government in this regard.

(xx) The project proponent shall utilize modern technologies for capturing of carbon emitted and shall also develop carbon sink/carbon sequestration resources capable of capturing more than emitted. The implementation report shall be submitted to the IRO, MoEF&CC in this regard.

(xxi) All the hazardous waste shall be managed and disposed as per the HWM Rules

2016. Hazardous waste such as Distillation Residue and Off Specification Products shall be either sent to common incineration site or sent for coprocessing. Solid waste shall be segregated into dry and wet garbage at site in accordance to the Solid Waste Management Rules, 2016. Wet waste shall be converted into compost and used as manure for greenbelt development. 570 MT/A Fly ash shall be stored under covered silos handed over to the Cement manufacturers/ Cement Industry.

(xxii) Storage of raw materials shall be either in silos or in covered areas to prevent dust pollution and other fugitive emissions. All stockpiles should be constructed over impervious soil and garland drains with catch pits to trap runoff material shall be provided. coal shall be stored in covered sheds and wind breaking walls/curtains shall be provided around biomass storage area to prevent its suspension during high wind speed. Fly ash shall be collected in Silo. All Internal roads shall be paved. Industrial vacuum cleaner shall be provided to sweep the internal roads. The Air Pollution Control System shall be interlocked with process plant/machinery for shutdown in case of operational failure of Air Pollution Control Equipment.

(xxiii) There shall be adequate space inside the plant premises earmarked for parking of vehicles for raw materials and finished products and no parking to be allowed outside on public places. Out of the total project area, 15% shall be allotted solely for parking purposes with facilities like rest rooms with full fledge infrastructure for truck drivers etc. Parking area should be paved to avoid fugitive dust emissions. There should be a learning centre over road behaviour for the drivers.

(xxiv) All necessary precautions shall be taken to avoid accidents and action plan shall be implemented for avoiding accidents. The project proponent shall implement the onsite/offsite emergency plan/mock drill etc. and mitigation measures as prescribed under the rules and guidelines issued in the Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rules, 1989, as amended time to time, and the Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996. The occupier of new as well as expansion projects shall be required to comply with the provisions of the MSHIC Rules, 1989 including notifying their activities or seeking site approval from the concerned authorities, to address operational safety aspects. In doing so, various schedule, particularly Schedule-5 of the said rules may be referred.

(xxv) The volatile organic compounds (VOCs)/Fugitive emissions shall be controlled at 99.97 % with effective chillers/modern technology. Regular monitoring of VOCs shall be carried out.

(xxvi) The storage of toxic/hazardous raw material shall be bare minimum with respect to quantity and inventory. Quantity and days of storage shall be submitted to the Regional Office of Ministry and SPCB along with the compliance report.

(xxvii) PP should establish in house (at project site) environment laboratory for measurement of environment parameter with respect to air quality and water (surface and ground. A dedicated team to oversee environment management shall be setup which should comprise of Environment Engineers, Laboratory chemist and staff for monitoring of air, water quality parameters on routine basis. Any non- compliance or infringement should be reported to the concerned authority

(xxviii) PP shall set up occupational health Centre for surveillance of the worker's health within and outside the plant on a regular basis. The health data shall be used in deploying the duties of the workers. All workers & employees shall be provided with required safety kits/mask for personal protection.

(xxix) Training shall be imparted to all employees on safety and health aspects for handling chemicals. Safety and visual reality training shall be provided to employees. Action plan for mitigation measures shall be properly implemented based on the safety and risk assessment studies.

(xxx) PP shall provide training to 10 local youth every quarter on environment management including air pollution control device, ETP, solid waste management, fly ash based brick manufacturing, green belt development as part of skill development programme.

(xxxi) Comprehensive water audit to be conducted on annual basis and report to the concerned Regional Office of MEF&CC. Outcome from the report to be implemented for conservation scheme.

(xxxii) 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.

(xxxiii) The 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) Solvents shall be stored in a separate space specified with all safety measures. (d) Proper earthing shall be provided in all the electrical equipment wherever solvent handling is done. (e) Entire plant shall be fire proof. The solvent

storage tanks shall be provided with breather valve to prevent losses. (f) All the solvent storage tanks shall be connected with vent condensers with chilled brine circulation.

(xxxiv) The storm water from the roof top shall be channelized through pipes to the storage tank constructed for harvesting of rain water in the premises and harvested water shall be used for various industrial processes in the unit. No recharge shall be permitted within the premises. Process effluent/ any wastewater shall not be allowed to mix with storm water.

(xxxv) The PP 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 vapor recovery system. (f) Use of high pressure-hoses for equipment cleaning to reduce wastewater generation.

(xxxvi) PP shall sensitize and create awareness among the people working within the project area as well as its surrounding area on the ban of Single Use Plastic in order to ensure the compliance of Notification published by MOEFCC on 12th August, 2021. A report along with photographs on the measures taken shall also be included in the six-monthly compliance report being submitted to concerned authority.

(xxxvii) The activities and the action plan proposed by the project proponent to address the issues raised during the public hearing as well as the related socio-economic issues in the study area shall be completed as per the schedule presented before the Committee and as described in the EIA report in letter and spirit.

B. General Conditions:

(i) No further expansion or modifications in the plant, other than mentioned in the EIA Notification, 2006 and its amendments, shall be carried out without prior approval of the Ministry of Environment, Forest and Climate Change/SEIAA, as applicable. 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/SEIAA, as applicable, to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.

(ii) The Project proponent shall strictly comply with the rules and guidelines issued under the Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rules, 1989, as amended time to time, the Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996, and Hazardous and Other Wastes (Management and Trans-Boundary Movement) Rules, 2016 and other rules notified under various Acts.

(iii) The energy source for lighting purpose shall be preferably LED based, or advanced having preference in energy conservation and environment betterment.

(iv) 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 Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).

(v) The company shall undertake all relevant measures for improving the socio-economic conditions of the surrounding area. The activities shall be undertaken by involving local villages and administration. The company shall undertake eco-developmental measures including community welfare measures in the project area for the overall improvement of the environment.

(vi) 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.

(vii) A copy of the clearance letter shall be sent by the project proponent to concerned Panchayat, Zilla Parishad/Municipal Corporation, Urban local Body and the local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal.

(viii) The project proponent shall also upload/submit six monthly reports on Parivesh Portal on the status of compliance of the stipulated Environmental Clearance conditions including results of monitored data to the respective Integrated 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.

(ix) 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 Integrated Regional Office of MoEF&CC by e-mail.

(x) 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 and at **https://parivesh.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.

(xi) The project authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of start of the project.

(xii) This Environmental clearance is granted subject to final outcome of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, if any, as may be applicable to this project.

33. 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.

34. 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 the Environment (Protection) Act, 1986.

35. 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.

36. The above conditions shall be enforced, *inter-alia* under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (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 and any

other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.

37. This issues with approval of the competent authority.

(A. N Singh)
Scientist 'F'

Copy to: -

1. The Principal Secretary, Forests & Environment Department, Government of Gujarat, Sachivalaya, 8th Floor, Gandhi Nagar - 382 010 (Gujarat)
2. Deputy Director General of Forests (C) Ministry of Env., Forest and Climate Change, Integrated Regional Office, Gandhi Nagar, A-Wing – 407 & 409, Aranya Bhawan, Near CH-3 Circle, Sector-10A, Gandhi Nagar - 382010
3. The Chairman, Central Pollution Control Board Parivesh Bhavan, CBD-cum-Office Complex, East Arjun Nagar, Delhi -32
4. The Member Secretary, Gujarat State Pollution Control Board, Paryavaran Bhawan, Sector 10 A, Gandhi Nagar-382 043 (Gujarat)
5. The Member Secretary, Central Ground Water Authority, Jamnagar House, 18/11, Man Singh Road Area, New Delhi, Delhi 110001
6. The District Collector, District **KUTCH**, Gujarat.
7. Guard File/Monitoring File/Website/Record File/Parivesh portal

(A. N. Singh)
Scientist 'F'

Signature Not Verified
Digitally signed by: A N Singh
Designation: Scientist F
Date and Time: 12/12/2024 11:51:13 AM