Executive Summary

For

Regularization and Expansion of Manufacturing of Hot Rolled Stainless Steel Product from 1,95,840 TPA to 22,76,000 TPA

(2,76,000 TPA Hot Rolled Stainless Steel Product and 20,00,000 TPA HRAP/CRAP Sheets, Plates & Coils)

At

Survey No. 24/A, 24/B, 25/1, 25/2, 26 TO 29, 31, 33, 34, 46, 55,58, 60 at Village Maan and Survey Nos. 44, 49, 50, 51, 55, 56, 57/1, 57/2, 58 at Village Warangade, Tal & Dist Palghar Maharashtra

Category A [Schedule 3(a)]

Project Proponent

M/s. Viraj Profiles Private Limited

Environmental Consultant:

Pollution and Ecology Control Services

Near Dhantoli Police Station, Dhantoli, Nagpur

Email: pecsnagpur@gmail.com

Accreditation no.:NABET/EIA/25-2825/RA0474

Valid upto 16th October 2028

1.0 INTRODUCTION

The present Draft EIA/EMP report & executive summary is for the Regularization and Expansion of Manufacturing of Hot Rolled Stainless Steel Product at Survey No. 24/A, 24/B, 25/1, 25/2, 26 TO 29, 31, 33, 34, 46, 55, 58, 60 at Village Maan and Survey Nos. 44, 49, 50, 51, 55, 56, 57/1, 57/2, 58 at Village Warangade, Tal & Dist Palghar Maharashtra. The report was prepared in accordance with the procedure outlined in the Notification of the Ministry of Environment, Forest & Climate Change (MoEF&CC), Government of India on 14th September 2006 and amendments thereto.

2.0 OVERALL JUSTIFICATION FOR IMPLEMENTATION OF THE PROJECT

The proposed regularization and expansion of the Hot Rolled Stainless Steel manufacturing unit is justified to meet the increasing demand for stainless steel in infrastructure, engineering, and industrial sectors. The project will enhance production capacity using improved, energy-efficient technologies within the existing industrial premises, thereby minimizing additional land disturbance.

The site is well supported by existing infrastructure, transport connectivity, and availability of utilities, making it suitable for the proposed activity.

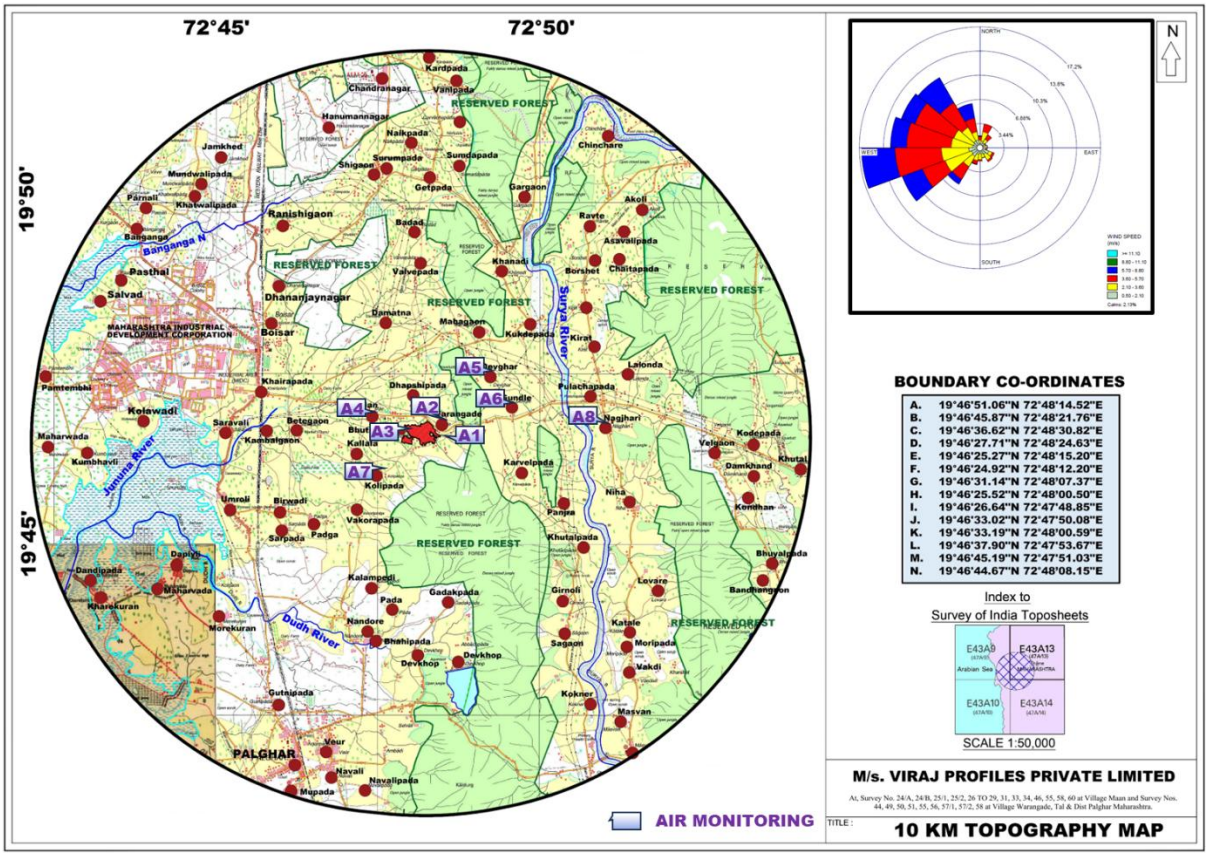
3.0 PROJECT DETAILS

The proposed project and the draft EIA/EMP report is for the Regularization and Expansion of Manufacturing of Hot Rolled Stainless Steel Product from 1,95,840 TPA (16,320 TPM to 22,76,000 TPA (2,76,000 TPA Hot Rolled Stainless Steel Product and 20,00,000 TPA HRAP/CRAP Sheets, Plates &Coils) at Survey No. 24/A, 24/B, 25/1, 25/2, 26 TO 29, 31, 33, 34, 46, 55,58, 60 at Village Maan and Survey Nos. 44, 49, 50, 51, 55, 56, 57/1, 57/2, 58 at Village Warangade, Tal & Dist Palghar Maharashtra. The report was prepared in accordance with the procedure outlined in the Notification of the Ministry of Environment, Forest & Climate Change (MoEF&CC), Government of India on 14th September 2006 and amendments thereto.

Initially the project was Regularization of Hot Rolled Stainless Steel Products for production of 16,320 TPM as per MoEF&CC OM dt. 20/07/2022. The proposal was granted Standard ToR by the Committee vide letter no No.IA-J-11011/313/2022-IA-II(IND I) dated 20/09/2022 with exemption of Public Hearing.

Subsequently, the proponent applied for an amendment in ToR for Regularization and Expansion of the manufacturing capacity from 1,95,840 TPA to 22,76,000 TPA, including the conduction of a Public Hearing. The proposal for amendment in ToR was considered in the 9th meeting of EAC Industry I held on 7.08.2025, and accordingly, the Committee prescribed the amended ToR vide letter No. IA-J-11011/313/2022-IA-II(IND-I) dated 18.09.2025.

The existing plant is in operation since 1995 in 9.7 ha. of land. Additional land available for the proposed expansion is 41.44 ha.



Source: *Survey of India (SOI) Toposheet*

Topographical map (10Km radius)

PROJECT DETAILS

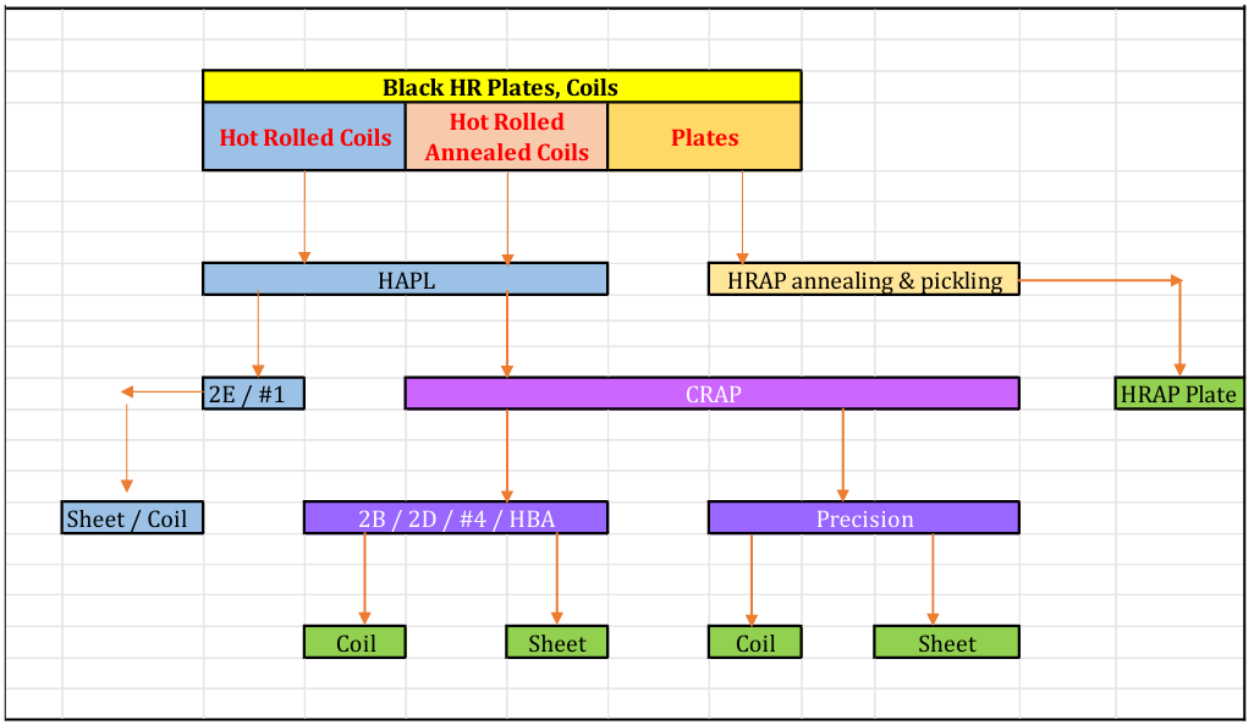
Project at a Glance

Name of the Company	:	Viraj Profiles Pvt. Ltd.
Plant Location	:	Survey No. 24/A, 24/B, 25/1, 25/2, 26 TO 29, 31, 33, 34, 46, 55,58, 60 at Village Maan and Survey Nos. 44, 49, 50, 51, 55, 56, 57/1, 57/2, 58 at Village Warangade, Tal & Dist Palghar Maharashtra
Area	:	51.14 ha.
Geographical Co-ordinates	:	A. 19°46'51.06"N 72°48'14.52"E B. 19°46'45.87"N 72°48'21.76"E C. 19°46'36.62"N 72°48'30.82"E D. 19°46'27.71"N 72°48'24.63"E E. 19°46'25.27"N 72°48'15.20"E F. 19°46'24.92"N 72°48'12.20"E G. 19°46'31.14"N 72°48’07.37"E H. 19°46'25.52"N 72°48’00.50"E I. 19°46'26.64"N 72°47'48.85"E J. 19°46'33.02"N 72°47'50.08"E K. 19°46'33.19"N 72°48’00.59"E L. 19°46'37.90"N 72°47'53.67"E M.19°46'45.19"N 72°47'51.03"E N. 19°46'44.67"N 72°48’08.15"E
Project Cost	:	Rs. 6000 Crores
CPA/SPA/ESZ if any	:	Yes (Within 5km from Tarapur CPA) (The compliance of conditions stipulated in mechanism for environmental management of critically polluted area is being/will be followed.
Water Requirement	:	Existing: 400 KLD Proposed: 3800 KLD Total: 4200 KLD Source: MIDC, Tarapur Industrial Area, Boisar.
Power Requirement	:	Existing: 35 MW Proposed: 150 MW Total: 185 MW Source: State Electricity Board
Manpower Requirement	:	**Operation phase:** Permanent Employment Existing: 700 nos Proposed:2000 nos **Temporary Employment** Existing: 1100 nos Proposed:3000 nos

4.0 PROCESS DESCRIPTION

The technology and process considered for the plant in best available technology. The technology encompasses 1.Rolling Mill, 2. Cont. Rolling Annealing furnace and pickling Line, 3. Horizontal bright Annealing, 4. Cooling/quenching zones and 5. Finishing lines to cut in identified sizes and length/width of finished products, Pickling of finished products of SS will be carried out by Na2SO4 & H2SO4, HNO3, HF acids.

Process Flow Chart is given below.



Process Flow Chart

5.0 DESCRIPTION OF ENVIRONMENT

Air Environment

The baseline environmental quality for the 1st March 2025 to 31st May 2025 was assessed in an area of 10 km radius around the proposed project site. The predominant wind direction is East South East. The ambient air quality monitored at 8 locations selected based on predominant wind direction, indicated the following ranges;

PM_{10}	-	40.3 – 72.2 µg/m^3
$PM_{2.5}$	-	20.5 – 36.3 µg/m^3
SO_2	-	12.6 – 22.9 µg/m^3
NOx	-	17.6 – 28.9 µg/m^3
CO	-	0.12 – 0.93 mg/m^3

The concentrations of PM_{10}, $PM_{2.5}$, SO_2 and NO_x were found within the National Ambient Air Quality Standards (NAAQ).

Water Environment

A total 16 samples including eight surface & eight ground water samples were collected and analyzed. The water samples were analyzed as per Standard Methods for Analysis of Water and Wastewater, American Public Health Association (APHA) Publication.

The data indicates that the ground water as well as the surface water quality are below the stipulated standard for drinking water (IS 10500 – 2012).

Noise Environment

Noise levels measured eight stations are within limit of 55.0 dB (A) for Residential Area or 75.0 dB (A) for Industrial Area as given in MoEF Gazette notification for National Ambient Noise Level Standard.

Land Environment

The characteristics of the soil sample was analysed at eight stations. Samples collected from different land use classifications indicating the soil Sample were neutral in nature. All the major nutrients were present, namely, nitrogen's presence is average in quantity, phosphorus is less in quantity and potassium is in sufficient quantity. The soil analysis report indicates that the soil in the area are capable of supporting plant growth.

Biological Environment

The biological environment of the study area represents a stable and ecologically significant ecosystem supporting diverse flora and fauna, including species protected under various schedules of the Wildlife Protection Act. With appropriate environmental management measures, the proposed project is not expected to cause significant adverse impacts on the biological environment.

Socio Economic Environment

The study area constitutes 49 inhabited villages.

The population is distributed among 52599 households in the study area. The 49 inhabited villages have a population of 224299 comprising of 120206 males and 104093 females.

The local economy will receive a positive impact and a boost due to employee spending capacity and services generated by the proposed project. The overall effect will help in improving the standard of living of the surrounding area viz. better education, improved health and sanitation facilities, etc. This is a major positive benefit, which will be responsible for the sustainable development of the surrounding area.

6.0 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES.

Impact on Air Quality

The major pollutants of air in a proposed plant are the particulate matters from the various stacks and fugitive emissions due to material handling.

Company is presently taking all measures to effectively control the air emissions and periodic monitoring of the stack emissions & ambient air quality is being done to monitor the pollutant concentrations. Same will be continued after the proposed expansion. During operation phase, air emissions both gaseous and fugitive will be on account of process emissions from stack as well as transportation of men and material.

Mitigation Measures

Section Rolling Mill

- Emissions from the rolling mill are primarily fugitive in nature, generated due to rolling oil lubrication at high speed, strip work roll interface and emulsion breakdown at specific temperature.
- Suction hoods, enclosures and exhaust blowers shall be provided at dirty pits, mill stands and sailor area.
- Precipitators shall be strictly followed to prevent accumulation of oil pollutant
- Enclosures and Low VOC synthetic oil shall be used to control fumes.
- All emission sources shall comply with CPCB emission standards.

- Periodic ambient air quality monitoring shall be carried out to ensure compliance with NAAQS.

Annealing Furnace

- The Annealing furnace shall be operated using clean fuel (CNG / Natural Gas) to minimize SO_2 and particulate emissions.
- A heat recuperator shall be installed to lower flue gas temperature and reduced overall emissions per tonne of product.
- Optimized combustion practices shall be ensured through proper air–fuel ratio control, aided by preheated air from the recuperator, to minimize NOx formation.
- The Annealing furnace shall be connected to an adequately designed stack height of 30m.
- Regular inspection and preventive maintenance of the recuperator, burners, and combustion control system shall be carried out to maintain consistent performance.
- Periodic / online monitoring of stack emissions shall be undertaken to ensure compliance with applicable standards.
- Emergency interlocks and shutdown systems shall be provided to prevent abnormal emissions during upset conditions.

Pickling Line

- Fumes generated from pickling operations (acid mist) shall be controlled by installing fume extraction systems connected to wet scrubbers and DeNOX.
- Scrubbers shall be designed to achieve maximum removal efficiency for acid vapors (HF+HNO#3/ H_2SO_4 mist).
- The scrubbed gases shall be discharged through a properly designed stack height (30m) to ensure dispersion.
- Acid tanks shall be covered / hooded to minimize fugitive emissions.
- Regular monitoring of scrubber performance, including pressure drop and scrubbing liquor concentration, shall be ensured.

- Spent scrubber effluent shall be treated in the Effluent Treatment Plant (ETP) before reuse or disposal.
- Continuous stack emission monitoring shall be conducted to ensure compliance with prescribed standards.

In plant, the fugitive dust is emitted primarily from the following:

- Transportation
- Raw Material Handling
- Material Transfer
- Storage of Raw Materials & Finished Product

Action plan to control Fugitive emissions

- All Internal roads are paved to prevent the fugitive dust emission due to vehicular movement.
- Speed limit in plant premises is in control.
- All transportation vehicles carry/ will carry a valid PUC (Pollution under Control) Certificate.
- Flow of vehicles is being/will be maintained.
- Proper traffic management is being/will be undertaken.
- Proper servicing& maintenance of vehicles is being/will be carried out.
- Proper dust masks are being/will be provided to workers coming in direct contact of fugitive emissions
- Adequate greenbelt has already been developed in the plant area. Greenbelt acts as a surface for settling of dust particles and thus reduces the concentration of particulate matter in air.
- Water Sprinkling is being /will be done to reduce fugitive emission in the plant and maintain the ambient air quality within CPCB standard.
- Adequate spares of critical components of dust and gas collection systems will be kept to ensure trouble - free operations and continuous compliance to emission norms.
- Ambient air quality is being/will be regularly monitored, so as to keep a check on the emissions of different pollutants.

- Fugitive emission sources are being /will identified and monitored at regular basis.

Impact on Noise Levels and Mitigation Measures

During operation, the major noise generating sources are crushing mill, auto loading section, electric motors etc. These sources will be located far off from each other. Under any circumstances the noise level from each of these sources will not exceed 85 dB (A).

Noise levels generated in the project site will be confined to the noise generating plant units hence the impact of noise levels on surroundings will be insignificant

Mitigation Measures

The noise levels will not exceed the standards stipulated by Central Pollution Control Board at any point of time. The equipments will have inbuilt noise control devices. The measured noise level produced by any equipment will not exceed 85 dB(A) at a distance of 1.0-m from its boundary in any direction under any load condition. The noise produced in valves and piping associated with handling compressible and incompressible fluids will be attenuated to 75 dB(A) at a distance of 1.0 m from the source by the use of low noise trims, baffle plate silencers/line silencers, acoustic lagging (insulation), thick-walled pipe work as and where necessary. The general mitigation for the attenuation of the noise are given below:

- ❖ Encasement of noise generating equipment where otherwise noise cannot be controlled
- ❖ Providing noise proof cabins to operators where remote control for operating noise generating equipment is feasible.
- ❖ In all the design/installation precautions are taken as specified by the manufacturers with respect to noise control will be strictly adhered to;
- ❖ High noise generating sources will be insulated adequately by providing suitable enclosures;
- ❖ Use of lagging with attenuation properties on plant components / installation of sound attenuation panels around the equipment
- ❖ Other than the regular maintenance of the various equipment, ear plugs/muffs

are recommended for the personnel working close to the noise generating units;

- ❖ All the openings like covers, partitions will be designed properly
- ❖ Inlet and outlet mufflers will be provided which are easy to design and construct.
- ❖ All rotating items will be well lubricated and provided with enclosures as far as possible to reduce noise transmission. Extensive vibration monitoring system will be provided to check and reduce vibrations. Vibration isolators will be provided to reduce vibration and noise wherever possible;\
- ❖ The insulation provided for prevention of loss of heat and personnel safety will also act as noise reducers.

Impact on Water and Mitigation Measures

In the existing scenario, the water requirement is 400 KLD, which is sourced from the MIDC, Tarapur Industrial Area, Boisar. After the proposed expansion additional water requirement will be 3800 KLD. Hence, after proposed expansion total water requirement will be 4200 KLD. In the existing scenario, water is sourced from MIDC and after proposed expansion, additional water requirement will be met through MIDC, Tarapur Industrial Area, Boisar.

100 KLD of wastewater generated from existing plant operation is treated in ETP and recycled the entire treated effluent into the process for various purposes such as for cooling, process & Scrubbing. 124 KLD of domestic wastewater is treated in STP of capacity 150 CMD with MBBR technology and treated sewage shall be recycled for secondary purposes to the maximum extent and remaining shall be discharged on land for gardening within premise. In no case, sewage shall find its way for outside factory premises.

1812 KLD of wastewater will be generated from the proposed plant operation which will be treated in ETP and recycled the entire treated effluent into the process for various purposes such as for cooling, process & Scrubbing. And 150 KLD from Domestic uses will be treated in STP with MBBR technology and treated sewage shall be recycled for secondary purposes to the maximum extent and remaining used for gardening within premise.

A comprehensive ETP system with RO, Mechanical Evaporator and Metal Recovery Units has been provided. All treated water is reused within the plant. No effluent is/will be discharged outside the premises (ZLD).

Industrial effluent will be treated in ETP-1 and ETP-2 through neutralization, chemical treatment, clarification, filtration and RO systems.

Online pH and flow meters will be installed at ETP inlet and outlet with data logging facility. Chemical sludge is/will be dewatered using filter press and disposed of through authorized TSDF.

Solid Waste Generation

During the existing as well as proposed expansion of Hot Rolled Stainless Steel manufacturing, various types of solid wastes are generated primarily from production and finishing operations. The details of solid waste generation and their management practices are summarized below**.**

Table: Solid Waste Generation & Mitigation Measures

S. N.	Solid Waste	Existing Quantity (TPA)	Proposed Quantity (TPA)	Disposal / Utilization
1.	Metal Scrap	8160	40000 TPA	Will be recycled at Steel Melting Shop at G-2 & G-22
2.	Grinding Dust & Mill Scale	1440	10000 TPA	Send to Metal recovery plant at Plot No G1/4, 1/5 and 1/6

Hazardous wastes generated from the project are mainly associated with machinery maintenance, effluent treatment systems and handling of chemicals. The details of hazardous waste generation and management are provided below in accordance with the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and amendments thereof.

Hazardous Waste

S. N.	Hazardous Waste	Existing Quantity	Proposed Additional Quantity	Disposal / Utilization
1.	Used or spent oil (5.1)	3000 Lit/M	CRM oil waste- 6000 ltr/M	Send to Authorized Re cycler

2.	Wastes or residues containing oil (5.2)	2000 Lit/M	Emulsion waste – 3000 Ltr/M	Send to Authorized Re cycler/CHWTSDF
3	Chemical sludge from waste water treatment (35.3)	500 MT/M	310 MT/M	Send to authorized metal recovery unit of VPPL at Plot no. G1/4,1/5 and G1/6 for metal recovery at MIDC Tarapur Boisar / CHWTSDF
4	Empty barrels /containers /liners contaminated with hazardous chemicals /wastes (33.1)	200 Nos/M	300 Nos/M	Send to Authorized recycler
5	Contaminated cotton rags or other cleaning materials (33.2)	5500 kg/Y	6000 kg/Y	Send to Authorized processor/CHWTSDF

7.0 ENVIRONMENTAL MONITORING PROGRAMME

VPPL is carrying out the Environmental Monitoring on regular basis. Environmental monitoring refers to systematic sampling of Air, Water, Soil, Biota in order to observe and study the environmental components. The methodologies adopted for environmental monitoring are in accordance with the CPCB guidelines. The purpose of post project environmental monitoring program is to evaluate the performance of mitigation measures implemented and to check how well the installed pollution control systems are working.

8.0 ADDITIONAL STUDIES

The additional studies as per the ToR issued by MoEF&CC are Public Consultation, Social Impact Assessment, Risk Assessment, & Disaster Management Plan are included in draft EIA report and other required information will be incorporated in the final EIA/EMP report.

9.0 PROJECT BENEFITS

Viraj Profiles Pvt. Ltd. reaffirms its commitment towards a clean, sustainable and continually enhancing environmental performance as an integral part of its business philosophy and values.

Through CSR initiatives in the fields of education, health, infrastructure development, and community development Viraj Profiles Pvt. Ltd. has been working with their neighbouring areas to uplift society in terms of economic, social and environmental principles.

Corporate Environment Responsibility (CER)

For the social development in the area, the company has planned various infrastructural development of the area. Time to time the proponent will also organize various camps and provide the facilities to nearby villages as per their requirements. As per the Office Memorandum No. 22-65/2017-IA.III dated 20th October 2020 based on the need of the local people, Local Gram Panchayat and District authorities, CER will be spent.

10.0 ENVIRONMENTAL MANAGEMENT PLAN

After commissioning of the proposed project, Viraj Profiles Pvt. Ltd. is going to follow all the measures as per EMP in the plant premises that will results in the further improvement in the environmental quality and all the parameters will be maintained within the prescribed limits.

Budget for Implementation of Environmental Management Plan

Sr. No.	Component	Description	Capital Cost Rs. In Crores	Operation & Maintenance Cost Rs. In Crores/Year
1.	Air Pollution Control	DeNOX, Dust Collector and Recuperators	48	5
2.	Water Pollution Control	ETP, ZLD, RO, STP	98	7
3.	Solid wase Management	Metal Recovery unit	112	13
4.	Noise Pollution Control	Enclosures	5	1
5.	Green Belt	-	7	1.2
6.	Online Ambient Monitoring, and Stack Monitoring	-	4	0.36
7.	Environmental Monitoring by NABL/MOEF	-	-	0.25

	approved lab			
8.	Occupation Health and Safety	-	60	3.0
9.	Fund for Social Development Activities	Education, healthcare, drinking water supply, sanitation, skill development, and village infrastructure improvement	10	-
Total			**344**	**30.81**

GREEN BELT DEVELOPMENT

- Avenue plantation within the plant and green belt development shall be done. M/s Viraj Profiles Private Limited will develop green belt in about 35% of the total plant area within the plant premises.
- The greenbelt around the industry will act as an effective barrier between plant and surroundings.
- The development of greenbelt within the plant area will help in capturing the fugitive emissions, attenuate the noise generated thereby maintaining the air quality and noise levels and will also improve the aesthetic beauty of the surrounding.
- The existing green belt area is 9.66 ha. 18750 no. of trees are already planted. 8.24 ha. will also be developed with plantation of 26000 plants inside the plant boundary.
- Plantation started from this Monsoon to further strengthened the green belt. It will be completed within 12-18 months.
- In compliance with the conditions stipulated under the mechanism for environmental management of critically and severely polluted areas, as per MoEF&CC letter No. Q-16017/38/2018-CPA dated 24.10.2019, the project proponent.
- shall develop a green belt covering 40% of the total plant area. To meet this target, 5% of plantation will be undertaken outside the plant boundary within a 5-7 km.
- Total Greenbelt Area : 20.4 ha (17.9 ha. Inside plant boundary and 2.5 ha. outside plant boundary).

CER BUDGET

- The proposed capital budget of Rs. 10.00 Crores will be spent towards CER activities in 3 years.
- The amount will be spent in various activities as per the issues raised in public hearing
- After successful completion of CER activities more villages will be selected for CSR.
- CSR activity shall be regular feature till the life span of project.

Existing CSR

Year-wise CSR Amount Spent

Financial Year	Total CSR Budget (₹ Crore)
2021–22	4.07
2022 -23	1.105
2023–24	2.20
2024–25	7.61
2025-26 (till January 2026)	3.21
Total	18.195

Conclusion

It is clear from the above discussion that the proposed project will not be likely to cause any significant impact on the surrounding area, as adequate mitigative measures will be adopted so that the all the parameters will be within the prescribed standards. More than 40% Greenbelt development in and around the proposed project would also be taken up as an effective pollution control measure.