# Executive Summary

# 1. INTRODUCTION

**M/s Noble Tech Industries Private Limited** has been engaged in Sponge Iron production and MS Billets & Rolled Steel Products along with Captive Power Plant at Plot No.14/2A2 of Melpakkam Village, Uthiramerur-Taluk, Uthiramerur, Kancheepuram, Tamil Nadu since 2005.

## 1.1 Project Description

The existing plot area of 21.95 ha will be expanded by adding up adjacent vacant land of 15.32 ha, acquired through lease deed executed between M/s. OFBusiness Ltd. and M/.s Noble Tech for a lease period of 25 years; thus the total plot area after expansion will be 32.27 ha. The industry has been engaged in the production of Sponge Iron @ 250 TPD, M.S. Billets & Rolled products @ 300 TPD and Captive Power @ 12 MW, established at a Cost of INR 49.56 Crore, with CTE (Consent to Establish) No. 2944 dated 03.05.2005 and commenced operation with CTO (Consent to Operate) No. 21077 dated 17.08.2007. The plant has since then not increased its production capacity nor changed its products. Latest Consent to Operate (CTO) issued vide TNPCB Consent No. 2404258959544 dated 02.05.2024 (under Air Act) & TNPCB Consent No. 2404158959544 dated 02.05.2024 (under Water Act).

Now the industry proposes expansion in M.S. Billets & Rolled Production from 300 TPD to 1600 TPD retaining existing Sponge Iron production (250 TPD) and Captive Power Plant (12 MW) production. The cost of the expansion project will be INR 80.00 Cr., thus, the total cost of the Project after expansion will be INR 353.17 Cr.

## 1.2 About the Project

As the project is involved in the production of Sponge Iron with a capacity >200 TPD, it falls under Schedule 3(a) of category 'A' of EIA Notification 2006 & its subsequent amendments to date and requires public hearing as a part of EIA appraisal process.

Based on the proposal submitted vide proposal number IA/TN/IND1/455602/2023, the project was granted standard Terms of Reference (ToR) from MoEF&CC vide letter No. IA-J-11011/324/2023-IA-II(IND-I), dated 23.02.2024. The EIA study was carried out in compliance to

the TOR issued, and in compliance to the requirements of the EIA Notification, 2006 and its subsequent amendments as applicable to the project, to identify environmental impacts resulting from the proposed project and to prescribe mitigation measures.

The EIA report along with a compliance statement to the Terms of Reference (ToR) with a request to conduct Public Hearing is being submitted to DEE- TNPCB , Kancheepuram District.

## 1.3 Location & Accessibility

**Location:**

- **Existing Survey Nos.:** 12, 14, 17, 22, 23, 25, 51, 52, 53, 57.
- **Expansion Survey Nos**: 12/1, 12/2, 14/2A2, 15, 17/1, 17/2A1, 17/2A2, 17/2A3, 17/2B, 17/2D, 17/2E, 18/1A, 18/1B, 19/3A, 19/4, 19/5A, 20/1A, 20/2A, 21/3A, 21/4, 21/5, 21/6, 21/7, 22/1, 22/2, 22/3, 22/3, 23, 24, 25, 27/3, 27/4, 27/5, 27/6, 27/7, 27/8, 27/9, 29/1A, 51/1C1, 51/1C2, 51/2A, 51/2B, 52/2, 53/2A, 53/2B, 53/2C, 53/2D, 55/1, 55/2, 55/3, 55/4, 56/1, 56/2, 56/3, 57/1A, 57/1B, 57/2, 57/3, 57/4, 57/5A, 57/5B, 57/6, 57/7, 57/8A, 57/8B, 10/1, 10/3, 11/1, 11/2, 11/3, 13/1, 13/2, 14/1B1, 14/1B2, 14/1B3, 14/2A1, 14/2B, 19/1, 19/2, 19/3B, 19/5B, 20/1B, 20/2B, 21/1, 21/2, 21/3B, 28, 29/1B, 30/2, 5/2, 6/1, 6/2A, 6/2B, 6/2C, 6/2D, 6/3A, 6/3B, 6/4A, 6/4B, 6/4C, 6/4D, 6/4E, 6/5A, 6/5B, 6/6A, 6/6B, 7, 8/1, 8/2, 8/3, 8/4, 9/1.
- **Address:** Plot No: 14/2A2, Melpakkam Village, Uthiramerur Taluk, Kanchipuram District, Tamil Nadu.
- **Latitude:** 12°38'33.67"N
- **Longitude:** 79°41'53.53"E
- **Elevation:** 94.5 m (MSL)

Expansion in M.S. Billets & Rolled Products from 108000 TPA to 576000 TPA along with the existing Sponge Iron (90000 TPA) and Captive Power Plant (12 MW) at Plot No. 14/2A2, Melpakkam Village, Uthiramerur Taluk, Kanchipuram District, Tamil Nadu - 603402 by M/s Noble Tech Industries Pvt. Ltd.

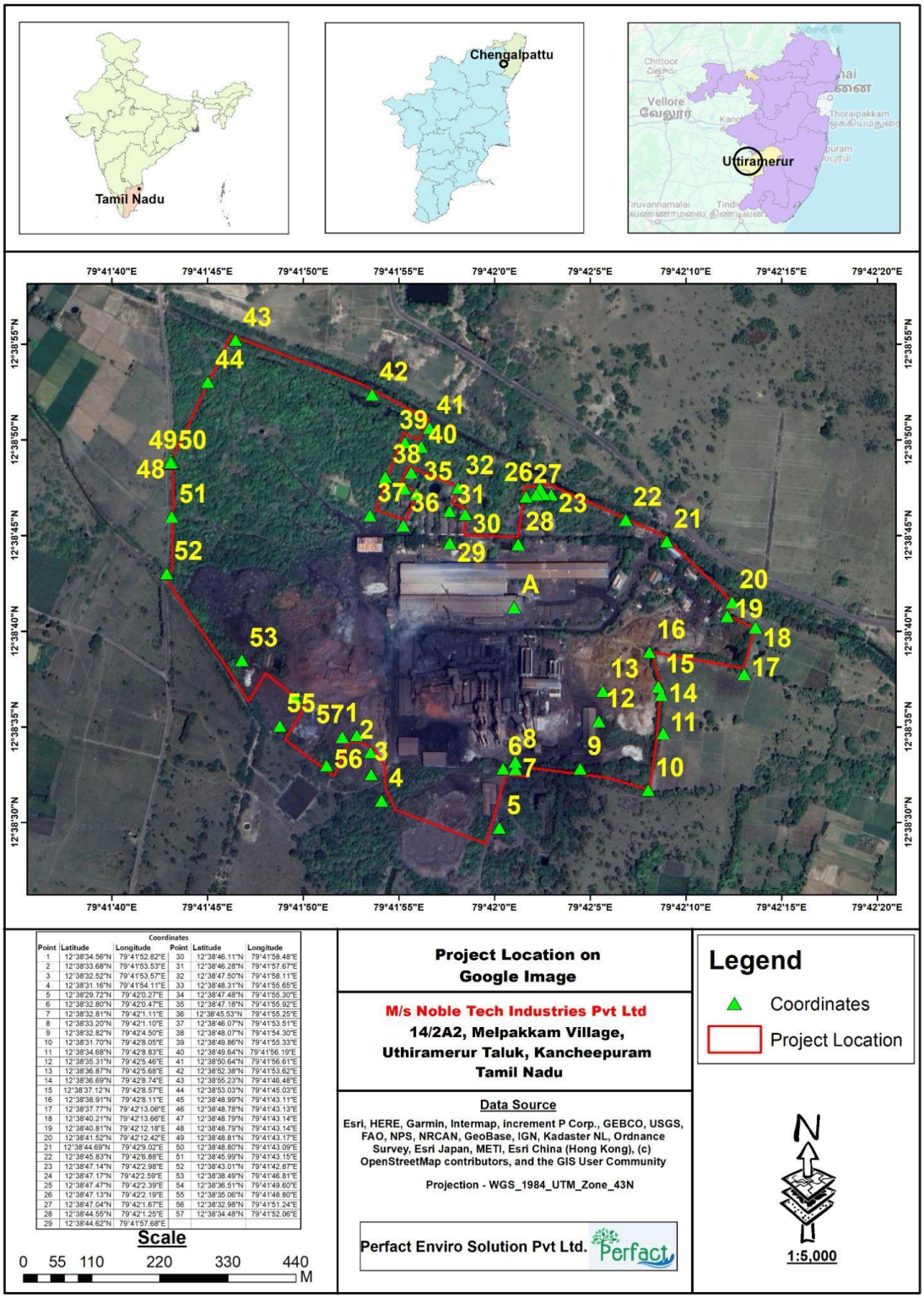


*Figure 1. Google Image of Project Site showing Coordinates*

## Environment Sensitivity

*Table 1. Site Specific Environmental Sensitivity Details*

| Particulars | Distance | Direction |
|---|---|---|
| **Water Bodies** | | |
| Drain near Lease Boundary | 0.01 km | N |
| Lake near Pudur | 0.54 km | NNE |
| Lake near Melpakkam | 0.78 km | SE |
| Elanagar Lake | 0.85 km | W |
| Lake near Ravuttanallur | 1.71 km | SE |
| Lake near Kaliyampundi | 1.81 km | E |
| Drain near Anumantandalam | 2.09 km | N |
| Lake near Silambakkam | 2.19 km | NE |
| Cheyyar River | 2.20 km | NW |
| Uthiramerur Lake | 2.59 km | SE |
| Lake near Perunagar | 2.92 km | WSW |
| Lake near Amaipandalur | 3.42 km | SSE |
| Lake near Ukkal | 3.97 km | NNW |
| Lake near Sethupattu | 4.81 km | WNW |
| Lake near Tirupulliam | 5.48 km | ENE |
| Kannikulam Lake | 5.59 km | NE |
| Drain near Olukarai | 6.15 km | NE |
| Adavapakkam Lake | 7.96 km | NE |
| Big Lake Marudham | 8.06 km | NE |
| Forest lake marudham | 8.84 km | NE |
| Mamandur Tank | 10.45 km | NNW |
| **Forests** | | |
| Marudam Reserved Forest | 9.30 km | NE |
| Perungoli Reserved Forest | 10.52 km | SE |
| **Eco-Sensitive Area** | | |
| Nil | | |
| **Archeological Area** | | |
| Nil | | |
| **Densely Populated Area** | | |
| Elanagar | 0.64 km | NW |

*Table 2. Site Specific Social Infrastructure Details*

| Particulars | Distance | Direction |
|---|---|---|
| **Hospital** | | |
| V2 POLY CLINIC | 6.74 km | SE |

| Particulars | Distance | Direction |
|---|---|---|
| Adhiparasakthi Speciality Clinic Uthiramerur | 6.87 km | SE |
| Sri Sarada Devi Charitable Dispensary | 9.71 km | ENE |
| **School** | | |
| Elanagar Middle School | 0.94 Km | WNW |
| RC Elementary School | 1.62 Km | SSW |
| R.C. Middle School | 1.63 Km | SSW |
| St. Joseph's High School | 1.65 Km | SSW |
| **Post Office** | | |
| Karthik Indian Post | 0.93 km | WNW |
| R.N. Kandigai Post office | 1.54 km | SSW |
| Kaliyampoodi Post Office | 2.10 km | ESE |
| **Place of Worship** | | |
| Sree udayambikai udayapoorisvarar Temple | 1.12 km | WNW |
| Elanagar Sri Srinivasa Perumal Temple | 1.22 km | WNW |
| Udaiyapurisvara | 1.38 km | SSW |
| Arulmigu Shri kanniyamman Temple | 1.63 km | WSW |
| **Bank** | | |
| India 1 ATM | 3.87 km | SW |
| INDIAN BANK | 3.98 Km | W |
| Co-operative Bank Perunagar | 4.44 km | WNW |
| **Road** | | |
| Perunagar-Kaliyampundi Road | 0.03 km | NE |
| Uthiramerur Road | 2.14 km | S |
| State Highway No.-116 | 4.39 km | W |
| State Highway No.-118A | 6.44 km | E |
| Endathur Road | 6.86 km | SE |
| State Highway No.-118 | 7.17 km | SE |
| **Railway Station** | | |
| Walajabad Railway Station | 20.94 km | NE |
| Kanchipuram Railway Station | 22.11 km | N |
| Pazhaya Seevaram Railway Station | 23.92 km | NE |
| **Airport** | | |
| Arakkonam Airport | 46.00 km | N |
| Chennai International Airport | 61.94 km | NE |

## 1.4 Project Description

- **Production Capacity**

*Table 3. Production Capacity*

| Sr. No. | Product | Unit | Capacity | | | End Use of Product |
|---|---|---|---|---|---|---|
| | | | Existing | Proposed | After Expansion | |
| 1 | Sponge Iron | TPD | 250 | 0 | 250 | Ingots |
| 2 | M.S Billets and Rolled Products | TPD | 300 | 1300 | 1600 | Rolled products manufacture |
| 3 | Captive Power | MW | 12 | 0 | 12 | Waste Heat Recovery & Power supply |

- **Water Requirement**

Daily water requirement for the project will increase to 597 KLD from the existing requirement 202.2 KLD, of which Freshwater requirement will be 543 KLD. Freshwater will be sourced from in-house borewells and dug wells, for which already permission is received from TN-WRDvide Certificate No. 305/2024 (R-3) dated 08.05.2024 for drawal of the total quantity of 700 KLD of groundwater for the purpose of "Industry (Steel Manufacturing Industry)" from the ground water structures (05 Nos. of open wells and 02 Nos. of bore well). The renewal certificate is valid from 16.03.2024 to 15.03.2025.

**Break-up Details of Water Requirement:** Domestic water increases from 25 KLD to 36 KLD, Cooling tower and Boiler requirement increases from 69 KLD 205 KLD, and process water (DM, Spray, RM & CCM) requirement increases from 85 KLD to 326 KLD. The domestic sewage is treated in STP of 30 KLD. 23.2 KLD of treated water is used for Gardening and Greenbelt development.

- **Wastewater Generation & Management:**

Wastewater generation from Domestic uses increases from 23.8 KLD to 32.6 KLD, Cooling tower and Boiler wastewater generation increases from 0 KLD 10.5 KLD, and process water (DM, Spray, RM & CCM) wastewater generation from 0 KLD to 15.5 KLD. Thus , the sewage quantity increases from 23.8 to 32.6 KLD and Trade Effluent increases from 0 KLD to 26 KLD.

Existing STP of 30 KLD will be augmented by another STP of 35 KLD. A new ETP of 40 KLD will be installed. The treated sewage @30 KLD will be reused for greenbelt development and treated effluent @24 KLD will be reused within the process.

- **Power Requirement**

***Demand & Source of Power Supply:*** The total power requirement will increase from 30 MW to 47.5 MW and it will be sourced from TANGEDCO by existing 11 KV transformer & installation of a new transformer of 110 KV replacing existing 33 KV transformer.

To meet emergency power requirements, existing 3 Nos. of DG sets of 600 kVA will be added with one D.G. Set of capacity 1500 kVA.

- **Fuel Requirement**

HSD will be used as fuel in DG Sets and material handling equipment, which will increase from 33.25 TPD to 40.0 TPD after the expansion.

Furnace oil is the primary fuel used in the sponge iron plant, with a current consumption of 435.8 TPD.

LPG is used for Scrap Cutting and existing consumption is 3.61 TPD, which will be expanded to 20 TPD after the expansion.

- **Manpower**

Permanent employment will increase from 200 Nos. to 250 Nos. and temporary/contractual employment will increase from 250 Nos. to 350 Nos.

- **Greenbelt Development**

Greenbelt area will increase from 7.21 ha to 13.01 ha. The overall green cover in the project site will be 34.91% of the plot area after the proposed expansion. The No. of trees in greenbelt development will increase from 2755 No. to 32525 No., by planting native trees with different species.

- **RWH**

Rooftop water that is available for collection will be 4837.86 $m^3$/hr. Rooftop Runoff will be directed to 6 Nos. of Rainwater Sump with a capacity of 800 KL each, which will be made during proposed expansion.

Surface runoff will be diverted to the storm water drain/pits with percolation pits (110 Nos. Existing and 45 Nos. proposed) with 1.5 m diameter all along the site boundary wall. The excess water will be drained to the external stormwater drainage system.

# 2. BASELINE ENVIRONMENTAL STUDIES

**Study Period:**

Monitoring was carried out in the **Summer Season from March 2023 - May 2023.**

**Ambient Air Quality:**

**Core zone:** The mean value of $PM_{10}$ at core zone locations ranges from (66.07-70.04 µg/m$^3$) & $PM_{2.5}$ ranges from (36.25-37.34 µg/m$^3$), $SO_2$ ranges from (4.83-5.12 µg/m$^3$), $NO_2$ ranges from (21.43-22.72 µg/m$^3$), CO (0.51-0.54 mg/m$^3$), VOC (0.26-0.28 mg/m$^3$), HC (0.32-0.34 µg/m$^3$), $O_3$ (17.36-18.40 µg/m$^3$) and $C_6H_6$ (0.16-0.17 µg/m$^3$) which are within the limits of National Ambient Air Quality Standards (NAAQS).

As per the Air Quality Index by CPCB, the air quality of the core **zone is found to be Satisfactory** during the sampling period between March 2023 - May 2023.

**Buffer zone:** The mean value of $PM_{10}$ at buffer zone locations ranges from (89.78-106.25 µg/m$^3$) & $PM_{2.5}$ ranges from (39.51-46.76 µg/m$^3$), $SO_2$ ranges from (5.22-6.22 µg/m$^3$), $NO_2$ ranges from (23.36-27.65 µg/m$^3$), CO (0.55-0.65 mg/m$^3$), VOC (0.29-0.34 mg/m$^3$), HC (0.34-0.41 µg/m$^3$), $O_3$ (18.92-22.39 µg/m$^3$) and $C_6H_6$ (0.17-0.20 µg/m$^3$) which are slightly higher than the limits of National Ambient Air Quality Standards (NAAQS).

As per the Air Quality Index by CPCB, the air quality of the buffer zone is found to be **Moderate** during the sampling period March 2023 - May 2023.

**Ambient Noise Quality:**

**Core Zone:** The ambient noise level during day time at the proposed project site varies from 61.8 dB (A) to 62.4 dB (A) which are within the day time standard limit of Industrial area ~75.0 dB (A). During night, the noise level at the project site ranges from 57.9 dB (A) to 58.7 dB (A) which are within the night time standard limit of Industrial area 70.0 dB (A).

**Buffer Zone:**

**Residential Area:**

**N3:** The daytime ambient noise level at Elanagar Village is 53.7 dB (A) which is within the daytime noise standard limit of the Residential area of ~ 55.0 dB (A). During the night the noise level was recorded at 45.2 dB (A) which is slightly above the night-time noise standard limit of ~ 45.0 dB (A).

**N4:** The daytime noise level at Hanumanthandalam is 56.8 dB (A) which is slightly above the day time noise standard limit of ~ 55 dB (A). During the night the noise level was recorded at 46.8 dB (A) which is above the night-time noise standard limit of ~ 45 dB (A).

**N5:** The daytime ambient noise level at Melpakkam is 53.4 dB (A) which is within the daytime noise standard limit of the Residential area of ~ 55.0 dB (A). During the night the noise level was recorded at 46.2 dB (A) which is above the night-time noise standard limit of ~ 45.0 dB (A).

**N6:** The daytime ambient noise level at R.N.kandigai is 54.1 dB (A) which is within the daytime noise standard limit of Residential area ~ 55.0 dB (A). During the night the noise level was recorded at 46.9 dB (A) which is slightly above the night-time noise standard limit of ~ 45.0 dB (A).

**N7:** The daytime noise level at Silambakkam is 54.8 dB (A) which is slightly above the daytime noise standard limit of Residential area ~ 55 dB (A). During the night the noise level was recorded at 45.2 dB (A) which is slightly above the night-time noise standard limit of ~ 45 dB (A).

**N8:** The daytime noise level at Kaliyampoondi village is 55.1 dB (A) which is slightly above the daytime noise standard limit of Residential area ~ 55.0 dB (A). During the night the noise level was recorded at 44.9 dB (A) which is within the night-time noise standard limit of ~ 45 dB (A).

**Commercial Area:**

**N9:** The daytime noise level at Approach Road is 56.8 dB (A) which is within the daytime noise standard limit of Commercial area ~ 65.0 dB (A). During the night the noise level was recorded at 51.5 dB (A) which is within the night-time noise standard limit of ~ 55 dB (A).

**N10:** The daytime noise level Uthirameru Road is 64.7 dB (A) which is slightly lower and within the standard limit of Commercial area ~ 65.0 dB (A). During the night the noise level was recorded at 58.9 dB (A) which is higher than the night-time noise standard limit of ~ 55 dB (A).

**Groundwater Quality:**

**Core Zone:** The water quality at location GW1 shows that all the parameters are within the drinking water standards (IS:10500).

**Buffer Zone:** The water quality of the buffer zone shows that

- The Total Dissolved Solids (TDS) of the sampling locations ranges from 805 mg/l to 1949 mg/l. The TDS of sampling locations are higher than acceptable limits and within the permissible limit i.e. 500 & 2000 mg/l respectively.
- The Total Hardness (TH) of the sampling locations ranges from 400 mg/l to 660 mg/l. The TH of sampling locations are within than the acceptable & permissible limit i.e. 200 & 600 mg/l respectively.
- The Alkalinity of the sampling locations ranges from 128 mg/l to 632 mg/l. The alkalinity of sampling locations are within the acceptable limit & higher than the permissible limit i.e. 200 & 600 mg/l respectively.
- The Chloride Concentration of the sampling locations ranges from 116 mg/l to 290 mg/l. The Chloride concentration of sampling locations are lesser than the acceptable limit & within permissible limits i.e. 250 & 1000 mg/l

**Conclusion:** The groundwater quality parameters (buffer zone) are well within the IS 10500:2012 (Drinking water standard).

**Surface water Quality:**

As per the samples collected and analyzed from locations SW2 & SW4 surface water quality is meeting the criteria defined by class "C" as per the CPCB criteria. It is suitable for Drinking water source after conventional treatment and disinfection.

1. The Surface water quality of the Pond near Hanumanthandalam (SW1) shows that the parameters including Turbidity, TDS, TSS, Nitrate nitrogen, BOD, COD & Iron content are higher as compared with EPA discharge standards.

2. The surface water quality of the Elanagar lake (SW2) shows that the values of the parameters including TDS, nitrate nitrogen, chloride, fluoride, calcium, magnesium, iron and alkalinity are lesser than the IS drinking water quality standards. BOD & DO value indicating that the surface water quality of SW2 can be placed in Class "C" i.e. Drinking water source after

conventional treatment and disinfection as per CPCB surface water quality- Designated Best Use Water Quality Criteria.

3. The surface water quality of the Lake near Melpakkam (SW3) shows that the values of the parameters including TDS, total hardness chloride, fluoride, calcium, magnesium, iron, sulphate, nitrate nitrogen and alkalinity are higher than the IS drinking water quality standards.

4. The surface water quality of the Cheyyar river upstream (SW4) shows that the values of the parameters including TDS, total hardness chloride, fluoride, calcium, magnesium, iron, sulphate, nitrate nitrogen and alkalinity are within the IS drinking water quality standards. BOD and DO value indicating that the surface water quality of SW4 can be placed in Class "C" i.e., Drinking water source without conventional treatment but after disinfection CPCB surface water quality- Designated Best Use Water Quality Criteria.

5. The surface water quality of the Lake near Silambakkam (SW5) shows that the values of the parameters including TDS, total hardness chloride, fluoride, calcium, magnesium, iron, sulphate, nitrate nitrogen and alkalinity are within the IS drinking water quality standards.

6. The surface water quality of the Uthiramerur Lake East (SW6) shows that the values of the parameters including TDS, total hardness chloride, fluoride, calcium, magnesium, iron, sulphate, nitrate nitrogen and alkalinity are within the IS drinking water quality standards.

7. The surface water quality of the Uthiramerur Lake West (SW7) shows that the values of the parameters including TDS, total hardness chloride, fluoride, calcium, magnesium, iron, sulphate, nitrate nitrogen and alkalinity are within the IS drinking water quality standards.

8. The surface water quality of the Cheyyar river downstream (SW8) shows that the values of the parameters including TDS, total hardness chloride, fluoride, calcium, magnesium, iron, sulphate, nitrate nitrogen and alkalinity are within the IS drinking water quality standards.

The surface water quality of the Kaliyampoondi Lake (SW9) shows that the values of the parameters including TDS, total hardness chloride, fluoride, calcium, magnesium, iron, sulphate, nitrate nitrogen and alkalinity are within the IS drinking water quality standards.

**Soil Quality:**

**Core Zone :** After analyzing the samples collected from the site, it shows that the soil texture is Sandy Clay loam, Colour is Brownish Black, pH is 7.56. Amount of primary nutrients like Organic matter is 0.98 %, the available nitrogen 78.4 mg/kg is moderately high and available Potassium 35.7 mg/kg is medium while the available Phosphorus 10.4 mg/kg is in a medium range. Thus it can be concluded that soil is average fertile in the core Zone.

**Buffer Zone:** Colour Brownish Black, pH ranges from 6.94 to 7.91. Amount of primary nutrients like Organic matter 0.61 to 1.48 %, the Available Nitrogen 49 mg/kg to 84 mg/kg is medium in range, the Available Phosphorus 5.4 mg/kg to 12.4 mg/kg is low to medium in range, Available Potassium 14.3 mg/kg to 35.2 mg/kg is low in range, Primary nutrient profile shows that soil is average fertile.

**Biological Environment:**

**A.1 Core Zone:**

**Flora:** Common tree species found within core zone are *Azadirachta indica* (Neem), *Tectona grandis* (Teak), *Cocus nucifera* (Coconut), *Musa acuminata* (*Banana*), *Ficus religiosa* (Pipal), *etc.*

**Fauna:** Mammals like *Bos taurus* (Cow), *Bubalus bubalis* (Buffalo), *Capra aegagrus hircus* (Goat), *Paradoxurus hermaphroditus* (Nevla), *and Felis catus* (cat) are found within core zone.

**A.2 Buffer Zone:**

**Flora:** Tree species found within buffer zone are *Acacia catechu* (Catechu Tree), *Acacia nilotica* (Gum Arabic Tree), *Aegle marmelos* (Wood Apple), *Albizia odoratissima* (Ceylon rosewood), *Ficus benghalensis* (Banyan tree), *Mangifera indica* (Mango), etc,

**Fauna:** In buffer zone, mammals like *Bos taurus* (Cow), *Bubalus bubalis* (Indian Water Buffalo), *Canis aureus* (Jackal), *Felis chaus* (Jungle Cat), *Macaca radiata* (Bonnet Macaque), *Urva auropunctata* (Small Indian Mongoose), *Urva edwardsii* (Indian Grey Mongoose), etc. are found.

**A.3 Endangered Species**

Endangered and threatened animals of India have been listed in **Schedule I of the Wildlife (Protection) Act, 1972 (amended in 2002)**. The schedule status of the animal species as per the WLPA, 1972 and the amendments thereafter are also given in the respective tables along with the list of the species enlisted as Schedule I species. **Thirteen (13)** Schedule I Species are reported in the Buffer zone within a 10 km radius.

*Table 4. Schedule I Species of the Study Area*

| Sr. No. | Scientific Name | Common Name | Family | Schedule |
|---|---|---|---|---|
| **CLASS: MAMMALIAN** | | | | |
| 1. | *Felis chaus* | Jungle Cat | Felidae | I |
| 2. | *Macaca radiata* | Bonnet Macaque | Cercopithecidae | I |
| 3. | *Urva auropunctatus* | Small Indian Mongoose | Herpestidae | I |
| 4. | *Urva edwardsii* | Indian Grey Mongoose | Herpestidae | I |
| **CLASS: AVES** | | | | |
| 5. | *Accipiter badius* | Little Banded Goshawk | Accipitridae | I |
| 6. | *Gallus sonneratii* | Gray Junglefowl | Phasianidae | I |
| 7. | *Pavo cristatus* | Indian Peafowl | Phasianidae | I |
| **CLASS: REPTILIA** | | | | |
| 8. | *Chamaeleo zeylanicus* | Indian Chameleon | Chamaeleonidae | I |
| 9. | *Daboia russeli* | Russell's Viper | Viperidae | I |
| 10. | *Eryx johnii* | Red Sand Boa | Boidae | I |
| 11. | *Naja naja* | Cobra | Elapidae | I |
| 12. | *Ptyas mucosa* | Rat Snake | Colubridae | I |
| 13. | *Varanus bengalensis* | Bengal Monitor | Varanidae | I |

**Socio-Economic Environment:**

The total population of the study area (0 to 10 km) is 158752. Out of which 50.2% are males and 49.8 % are females. The overall literacy rate within the study area 74.36 %,. Male literacy rate is 83.33 % and female literacy rate is 65.37 %.

Drinking water is primarily sourced from hand pumps and bore wells. Essential services like schools, banks, hospitals, and markets are easily accessible to the villagers. All the houses have their own individual toilet followed by a Septic Tank. Other sources of income are animal husbandry, labor wages, Govt. Jobs, Private Jobs & & Self-employment.

The primary sources of income for the residents include agriculture and opportunities in both private and government sectors within the region. The majority of individuals in the surrounding areas are literate.

Industrial establishments play a significant role in the economic landscape, as a considerable number of villagers are employed in these enterprises.

Accessibility to vital services such as schools, post offices, banks, hospitals, and markets is readily available to the residents. The livelihoods of most people hinge on Agriculture, Labors, service,private jobs and private employment opportunities, while a minority is involved in activities like animal husbandry and poultry farming. Diverse employment opportunities exist in various industries, contributing to the economic vibrancy of the region.

## 3. ANTICIPATED ENVIRONMENTAL IMPACT AND MITIGATION MEASURES

**Air Environment**

**During the construction/ installation phase**, impacts on ambient air would be mainly due to dust emissions and movement of vehicles. However, these impacts would be short term in nature and limited only to the construction period. Dust suppression systems (water spray) will be used. Construction materials will be fully covered during transportation to the project site by road.

**During the operational phase** ,there would increase the emission of Volatile Organic Compounds (VOC's), $SO_2$, $CO_2$, PM, $SO_2$, $NO_2$ generation, dust generation which could lead to an increase in ground concentration level (GLC), respiratory problems, damage to flora and fauna and aesthetic properties in the environment and increase the level of toxic chemicals to other aspect of environment indirectly. To check such impacts, APCS like bag filters with adequate stack height, Recuperator with adequate stack height, ESP with adequate stack height, etc., are being installed. Plantation of trees, installation of water sprinkling systems and dust compression systems in the nearby areas, provision of proper nose masks to laborers, Vehicles with valid PUC certificates will be used for transportation etc. shall be done. Vehicles with valid PUC certificates will be used for transportation of construction material, raw material, waste and finished products.

**Water Environment**

**Source of Fresh Water:** Freshwater is being sourced from Groundwater Supply through in-house Open Wells - 5 Nos. and Borewells - 2 Nos. with valid TN-WRD Permission vide certificate No. 305/2024 (R-3) dated 08.05.2024 for the drawal of the total quantity of 700 KLD of groundwater. The renewal certificate is valid from 16.03.2024 to 15.03.2025.

**Construction phase:** The water used for construction purposes will be treated in sedimentation tanks and shall be reused appropriately. The wastewater from domestic activities will be managed in STP. No water shall be released untreated in the environment.

**Operational phase:** The activities which would probably pose an impact on the water environment would be the manufacturing process, operation of machinery & equipment, working & daily activities of staff, visitors, transportation. The aspects of the activities may be the generation of waste water, scarcity of water, depletion of water table and deterioration of water quality which could lead to deterioration of aquatic life, generation of water-borne diseases to nearby populations. The total water requirement for the operational industry is 597 KLD out of which fresh water requirement is 543 KLD & treated water (ETP & STP water combined) is 54 KLD. Fresh water will be used @ 36 KLD for domestic purposes, 45 KLD will be used in DM unit, 110 KLD will be used in spray CT, 205 KLD in cooling tower and boiler, 50 KLD will be used in RM unit and 121 KLD in CCM unit. Treated effluent @24 KLD will be reused in the process. Treated sewage @30 KLD water will be used in greenbelt development.

**Land Use**

- **Agriculture Land:**
  Based on analyzed imagery and ground truth. Cropland and its area extent have been extracted. The Agricultural Land area is about 24265.5 hectares which is 71.20 percent of the total 10 km radius study area.
- **Built up Land :**
  Based on analysis of imagery using GIS and ground truth. The total Built up area is about 2377.3 hectares which is 6.98 percent of the total study area.

- **Waste/Barren Land:**

  The Barren Land area occupies around 1211.1 ha which is 3.55 percent of the study area.

- **Forest:**

  Forest area occupies around 8.9 ha which is 0.03 percent of the study area.

- **Water Bodies:**

  Based on satellite data and ground truth, the total area covered by the inland wetland, river and water bodies is 6217 hectares which is 18.24 percent of the total study area.

**Soil Quality**

The major activities which would negatively impact the soil environment would be loading & unloading of raw material, manufacturing process of product, operation of machinery (Boiler, DG sets, Induction furnace, Rolling Mills, ETP, STP, etc.), handling of raw material, transportation of raw material, finished product and waste. The aspects of the activities would be soil erosion, waste generation and spillage of hazardous wastes or chemical on the soil which could lead to permanent damage to land productivity, destabilization of landscape, decrease in permeability, damage to fertility of soil, chemical degradation and indirect negative impact on other aspects of environment like Air, Water & Ecology and Biodiversity.

Due to construction activity, soil fertility will not deteriorate, however periodically monitoring of soil quality will be conducted. C&D will be either disposed off weekly to the C&D Waste site or utilized in internal road formation for the proposed expansion. Solid waste generated during the installation phase will be treated in existing OWC. Contamination of soil may occur due to Diesel/ petrol seepage into the soil if any spillage occurs or while refueling (Diesel/ petrol) of vehicles transporting construction materials and servicing of vehicles. Procedures for maintenance of vehicles would ensure that this risk is minimized, and clean-up response is rapid if any spill occurs. Lubricating waste oil shall be collected separately in drums and handed over to the authorized outside agency. Vehicles will not be allowed to get fuelled within the site. SOP to that effect will be implemented..

**Noise Levels**

The major activities which would have an impact on the environment would be operation of machinery and transportation. The aspects of the activities would be an increase in noise level and increased noise generation which could lead to physiological and psychological problems to workers and nearby population, increased vibration in the nearby areas and an indirect decrease in the biological diversity in the nearby area. To minimize such impacts, mitigation measures like silencers are checked in the vehicles used for transportation of materials, No honking zone will be maintained, Reverse horn in the transportation vehicles will be banned. Only PUC certified vehicles are allowed for transportation, maintenance of vehicles is done on a regular basis. Machineries of the reputed make and less noise producing will be purchased. Stationary machineries and equipment will be properly enclosed by enclosures and provided with dampeners for minimizing noise generated due to vibration of machineries. Sufficient oiling and lubrication will be done to all the parts of the machineries to ensure that minimal noise is generated. Green belt/greenery will be developed along most of the periphery of the project area as well as along roads. Green area in the plot is 13.01 ha (34.91% of plot area).

**Solid and Hazardous Waste**

Municipal Solid Waste:

Total solid waste generated from the plant is @470 kg/day); out of which @170 kg/day is biodegradable waste (will be treated in an inhouse organic waste convertor (OWC) and use manure for greenbelt development) and @300 kg/day is non-biodegradable waste generated will be given to authorized recycler.

Non-Hazardous Waste:

STP Sludge generated from STP @ 0.35 T/M will be used as manure in greenbelt development, and @12 T/M of slag will be reused in the process, and Ash @75 TPD will be Sent to vendors for manufacturing bricks.

Hazardous Waste:

Hazardous waste @ 2.0 T/Y spent oil and @ 130 T/Y Discarded barrels will be recovered and reused or to CPCB authorized recyclers, @0.95 T/Y ETP Sludge will be sent to common TSDF of

TNWML @1.50 TPM waste or residues containing oil will be sent to common TSDF of TNWML.

**Green Belt Development:**

The green belt area is increasing from 7.21 ha to 13.01 ha (34.91% of total land area) after the proposed expansion, to maintain good air quality. Greenbelt will consist of native tree species that shall be provided inside the plot area. This will also enhance the natural beauty of the project site along with added benefits of noise and air emission reduction.

**Socio-Economic Environment:**

No rehabilitation and resettlement are required. Employment opportunities will be generated for the local population during the construction/installation phase which will lead to a rise in income and improve standard of living. The expansion of existing industry would also generate jobs for the labourers during the construction phase as well as during the operation phase. It will provide direct and indirect employment to local youth.

## 4. ALTERNATIVE ANALYSIS

Proposed project aims to increase production of MS Billets & Rolled products from 300 TPD to 1600 TPD. It is proposed to be realized by expansion of existing Plant area and by installing additional Machineries and utilities within the existing Sponge Iron Plant. However, the assessment for the site is presented below:

- **Land/Site :** Proposed expansion requires installation of 1 No.of 30 T induction furnace, 1000 TPD TMT Mill along with 65 KLD STP and 40 KLD ETP along with additional utilities and facilities. Locating the new TMT Bar Mill and Other Structural steel mill along with the existing Sponge Iron and Structural steel plant will be more advantageous in terms of utilizing existing infrastructure available.
- **Facilities & Utilities:** Already the existing plant has got all the facilities and utilities available for the proposed expansion. There will be 2 Nos. of Pump House, 2 Nos. of Cooling Tower, 1 No. of CCM Machine Stand and 5 Nos. of EOT Cranes to cater the proposed expansion.

- **Power :** There will be addition of 110 KV transformer replacing existing 33 KV transformer and 17.5 MW of power supply from TANGEDCO. Also, there will be addition of 1 No. of DG set of 1500 kVA as a back-up source for power.
- **Water:** The fresh water requirement due to the proposed expansion will increase from 179 KLD to 543 KLD.
- Employment Generation : The project is located in a non-notified industrial area but it is providing 50 Nos. of permanent employment and 100 Nos. of temporary employment for the proposed expansion.
- **Greenbelt:** The green belt area is increasing from 7.21 ha to 13.01 ha (34.91% of total land area) after the proposed expansion, to maintain good air quality.
- The site is well connected with roads and railway networks.
- No Rehabilitation and Resettlement is required.

Considering the above mentioned advantages of the project location the existing site has been considered for the proposed expansion. This would also give benefits in utilizing the existing utilities and infrastructure within the project site to have minimal environmental and social footprints.

## 5. ENVIRONMENTAL MONITORING PROGRAMME

M/s Noble Tech Industries Pvt. Ltd. will ensure that the environmental performances of all the activities are monitored throughout the execution of the various project activities. Monitoring will include all the aspects and parameters related to the process emissions from the manufacturing process, storage area, work zone area, quantities of waste generated, effluent generation and its characteristics, Environmental quality of components like Air, water, Soil, Noise are being verified that they meet the prescribed standards. Occupational health and safety monitoring will include Effective Health and safety management of the workers engaged, periodic health check up, reporting of all the incidents in the plant during the installation and operation phase. All the reports will be periodically submitted to the concerned regulatory authorities as compliance, audit reports.

# 6. ADDITIONAL STUDIES

## 6.1 Public Consultation

Details will be incorporated after Public consultation.

## 6.2 General Safety Measures

The project is situated in the Seismic zone-II area. For synthetic organic chemical and agrochemical manufacturing units, all practicable measures shall be taken to prevent outbreak of fire and its spread, both internally and externally. The chemicals shall be stored in a separate safety storage room, shall be kept away from sources of ignition. All measures shall be taken as per law.

- Occupational health surveillance programmes will be done six monthly & and their records will be well maintained.
- At the project site an emergency First Aid facility will be provided. A room will be provided separately with provision of bed and an experienced doctor.
- Health check-up camps will be organised on a regular basis at company dispensary / nearby locations for nearby people to evaluate exposure of the workers to chemicals during pre-placement and periodic medical monitoring.
- Prior to working with chemicals, workers will be trained on its proper handling & storage and its MSDS.
- Proper medical facility arrangements will be provided in case of any accidental release.
- Label Precautions and First Aid facility will be provided.
- Emergency plans will be prepared and a mock drill of the on-site emergency conducted.
- Employers and employees will be made aware of the hazardous properties of materials in their workplaces, and the degree of hazard each poses.
- Inspection of the industrial activity will be done at least once a year and an annual status report on compliance with the Rules will be submitted.
- An Environment, Health and Safety (EHS) Manager will be available, which handles all the safety issues related to man, machine & materials.

- Exterior refuge or safe areas include parking lots, open fields or streets which will be located away from the site of the emergency and which provide sufficient space to accommodate the employees.

# 7. PROJECT BENEFITS

## 7.1. Environmental Benefits

a. The proposed expansion will only add up an Induction furnace and TMT rolling Mill to the already operational Sponge Iron & MS Billets & Rolled Steel Production Plant, thereby necessitating only very limited Emission control and very lesser fresh water requirement. There will be no increase in process stack, and there will be addition of only 01 Nos. of utility stack for DG set of 1500 kVA and there will be a common stack for existing Induction furnace (1 No.30 T) and proposed Induction Furnace (1 No. 30 T).

b. Freshwater requirements will be met from 02 Nos. of Borewells and 05 Nos. of Open wells within the site. Through a structured RWS scheme, there will be substantial savings in groundwater drawl to an extent 34.5 KL/Day. Aquifer recharging is also planned through collection of Stormwater and all other water from sources into stormwater drain and through percolation of the same through 155 No. percolation pits.

c. Wastewater will be segregated into Sewage and Trade Effluents, and will be treated in a STP/ETP respectively. Treated effluents @ 24 KLD will be reused, treated sewage @ 30 KLD will be used in Greenbelt development.No wastewater will be discharged out of the factory premises, hence maintaining ZLD.

d. The project will continue to operate abiding by the environmental norms by installation and maintenance of APCS. Maximum Ground Level Concentration due to project activities: PM2.5 - 0.85 $\mu g/m^3$, PM10 - 0.71 $\mu g/m^3$, NO2- 2.64 $\mu g/m^3$, SO2 - 2.07 $\mu g/m^3$, CO - 0.007 $mg/m^3$, TVOC - 0.01 $mg/m^3$.

e. Organic Municipal Solid Waste @ 170 kg/day will be managed by in-house OWC and Inorganic waste @ 300 kg/day will be sold to authorized recyclers. Hazardous wastes will be managed via authorised HW recyclers/common TSDF of TNWML.

## 7.2. Economical Benefits

The proposed expansion investment cost is INR 80 Cr. The increased production will bring direct revenue to local panchayats and villages nearby in the form of taxation. Also there will be an increase in small vending activities that will create small economic activities for local people.

## 7.3. Social Benefits

a. Due to the proposed expansion additional employment @ 50 Nos. of permanent and 100 Nos. of contractual employment will be made
b. INR 30 lakhs will be spent on improving the primary health care facilities especially for building up the infrastructure for child care, workers and sanitation facilities.

## 7.4. Other Tangible Benefits

India presently consumes about 100 MTPA steel of which 93 MTPA carbon steel & 7 MTPA alloy & stainless steel. Predicted growth in consumption of carbon steel has shown steady rise over 7% per annum till 2027, with predicted consumptions @ 124 MTPA by 2025-26, 165 MTPA by 2030-31 and 211 MTPA by 2035-36. Initially driven by construction, the industrial sector gradually catches up, overtaking the construction sector's share.

The project will contribute to the Government treasury by way of direct and indirect taxes, like GST, Custom Duty and Income Tax. Noble Tech Industries Pvt. Ltd will contribute funds for undertaking infrastructure development in surrounding villages, including roads, community centers, training centers, traditional activity, health, education under the Corporate Social Responsibility, as prescribed under the Companies Act.

# 8. ENVIRONMENT MANAGEMENT PLAN

The effective management system involves proper and regular monitoring of the environment components for continual improvement. Based on the project descriptions and the activities associated, the Environment Management plan has been prepared for all the valued Components for which the Budget of INR 312.0 lakhs after expansion as capital cost & 54.5 INR Lakhs after expansion as recurring cost has been proposed by M/s Noble Tech Industries Pvt. Ltd. Work zone

monitoring shall be carried out by the HSE department every month for gaseous pollutants and dust. Records will be kept in standard Form as per Factories Rules. Location for sampling shall be identified. Quarterly and half yearly monitoring will be done by 3rd party during the operation phase.

Existing Project Cost: **INR 273.17 Cr.**

Proposed Cost for Expansion: **INR 80.00 Cr.**

So, total cost of the project after expansion- **INR 353.17 Cr.**

**i. Capital Cost**

*Table 1. Capital Expenditure*

| Sl. No. | Particulars | Existing | Proposed | After Expansion |
|---|---|---|---|---|
| | | INR Lakhs | | |
| 1 | Air Pollution Control Systems | 50.00 | 40.00 | 90.00 |
| 2 | Water Pollution Control Systems | 12.00 | 40.00 | 52.00 |
| 3 | Environment Monitoring | 10.00 | 10.00 | 20.00 |
| 4 | Rain water harvesting and Others | 20.00 | 25.00 | 45.00 |
| 5 | Green Belt Development | 15.00 | 15.00 | 30.00 |
| 6 | Solar Power | 0.00 | 55.00 | 55.00 |
| **Total** | | **107.00** | **205.00** | **312.00** |

**ii) Recurring Cost**

*Table 2. Recurring Expenditure*

| Sl. No. | Particulars | Existing | Proposed | After Expansion |
|---|---|---|---|---|
| | | in INR Lakhs/Annum | | |
| 1 | Air Pollution Control Systems | 8.50 | 7.00 | 15.50 |
| 2 | Water Pollution Control Systems | 6.00 | 9.00 | 15.00 |
| 3 | Environment Monitoring | 5.00 | 2.50 | 7.50 |
| 4 | Rain water harvesting and Others | 3.00 | 4.50 | 7.50 |
| 5 | Green Belt Development | 6.00 | 1.00 | 7.00 |
| **Total** | | **28.5** | **24.00** | **52.50** |

**iii) Budgetary Provision for Corporate Environment Responsibility (CER):**

*Table 3. CER Expenditure*

| Sr. No. | Particular | Proposed Cost (In INR Lakhs) |
|---|---|---|
| **1** | Nearby Villages Development- | 50.00 |

| Sr. No. | Particular | Proposed Cost (In INR Lakhs) |
|---|---|---|
| | I. Improvement in Primary Health Care Centres at Elanagar and Melpakkam village<br>II. Improvement in Government Higher Secondary school at Elanagar and Melpakkam village<br>III. Improvement in Government Primary health care centre, Anganwadi, Government Primary School at Hanumanthandalam village | |
| **2** | Provision of Safe Drinking Water Facilities | 10.00 |
| **3** | Improvement of Sanitation Facilities | 15.00 |
| **4** | Provision of Safety Boards, Sign boards at road | 5.00 |
| **Total** | | **80.00** |

## 9. CONCLUSION

The proposed expansion will have positive impacts to the neighborhood by generating 150 No. of employment, increased Tax revenue and also will boost economic activities within the buffer zone. Thus, it can be concluded on a positive note that after the implementation of the mitigation measures and Environmental Management Plan, the operation of the project will have no major impact on the environment.