

January

2025

Executive Summary for Conducting Public Hearing

FOR

Proposed Expansion of existing steel melting plant

At

Plot No. E - 39-52, B-1/S, B1 Part, SIPCOT Industrial Complex, Pappankuppam Village, Gummidipoondi Taluk, Tiruvallur District, Tamil Nadu.

Project Proponent:

**M/s. ARS Steels and Alloy International Private Limited
D- 109, 2nd Floor LBR Complex
Chinthamani Anna Nagar East
Chennai-600 102**

Project termed under schedule 3(a) Category B₁

Prepared By:

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Chennai -600100**

1.0 BRIEF DESCRIPTION OF THE PROJECT

ARS Steels and Alloy International Private Limited have been established with the objective of building long-term profitable and mutually valued partnerships with stakeholders. Known to have a unique distribution network that ensures the fulfilment of all client requirements, ARS provides easy access through authorized distributors, across South India. The existing steel rolling mill of M/s. ARS Steels & Alloy International Private Limited is located at Plot No. E - 39-52, B-1/S, B1 Part, SIPCOT Industrial Complex, Pappankuppam Village, Gummidipoondi Taluk, Tiruvallur District, Tamil Nadu. The proposed project involves expansion of existing Steel Melting Shop from 2,88,000 TPA to 6,00,000 TPA and existing Steel Rolling Mill having capacity of 2,50,000 TPA to 5,70,000 TPA. The proposed project will be established with an estimated investment of Rs. 196.712 crores.

As per the latest Environmental Impact Assessment Notification dated 14th September 2006, the proposed plant (secondary metallurgy industry) falls under 'Category B' for which Environmental Clearance (EC) from State Level Impact Assessment Agency (SEIAA) is necessary. Inline with EIA Notification dated 14.09.06, a TOR meeting was held for determining Terms of Reference (TOR) on 13th June 2024 for the preparation of EIA report for the proposed project. Based on TOR conditions given by State Environmental Impact Assessment Authority vide Identification No. TO24B1010TN5601831N dated: 04/07/2024, this EIA report has been prepared.

1.1 Land Requirement

The total land area available for the proposed steel plant is 4.51 ha which is leased from SIPCOT and the land use classification is Industrial use. The land-use breakup of the site area is given in **Table-1**.

TABLE - 1: LANDUSE BREAK-UP OF PROJECT SITE

S. No.	Description	Existing		After Expansion	
		Area (Ha)	Percentage (%)	Area (Ha)	Percentage (%)
1.	Factory shed area	1.02	22.6	1.24	27.5

2.	Scrap yard	0.68	15.1	0.46	10.2
3.	Product storage area	0.32	7.1	0.32	7.1
4.	Solid waste storage area	0.30	6.7	0.30	6.7
5.	Greenbelt development	1.52	33.7	1.52	33.7
6.	Road	0.60	13.3	0.60	13.3
7.	Open space area	0.07	1.5	0.07	1.5
	Total	4.51	100.0	4.51	100.0

1.2 Power Requirement

The total power requirement of the plant will be 55000 KVA. For its existing power requirement, the plant is currently procuring around 50% electricity from renewable energy such as wind and by entering into long-term purchase agreements. The plant will also source renewable energy for its proposed expansion by entering into similar Power Purchase agreements. Out of total power requirement, the plant aims to consume around 90% power from renewable energy (green) and the balance from TANGEDCO after proposed expansion. However, to meet the emergency power requirement during the grid failure 1 No. of 500 KVA & 1 No. of 750 KVA will be installed.

1.3 Raw Materials Requirement

The raw materials required for the production of MS Billets will vary based on the furnace used for melting ie. Induction Furnace (IF). Required raw materials in both the options are tabulated in **Table 2(a)**. The raw materials required for the production of Steel Rods, Angles, Squares, Flats, Channels & Rounds are MS Billets produced in-house or outsourced and its requirement details are tabulated in **Table – 2(b)**. The raw materials are being brought in to the plant through trucks by road.

TABLE – 2(a): RAW MATERIAL REQUIREMENT (MS BILLETS)

EXISTING:

S. No.	Raw Material	Requirement (Tons/Annum)
1	Virgin Scrap	2,82,412
2	Sponge Iron	15,102

3	Ferro Alloys	4,531
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PROPOSED:

S. No.	Raw Material	Requirement (Tons/Annum)
		After Expansion
1	Cold Rolled Cuttings	261940
2	Non-Tin Plated	77705
3	Sponge Iron	10653
4	Turning and Boring	72691
5	MS Scrap	203035
	Total	626650

TABLE – 2(b): RAW MATERIAL REQUIREMENT (STEEL RODS & STRUCTURAL COMPONENTS)

S. No.	Raw Material	Requirement (Tons/Annum)	
		Existing	After Expansion
1	MS Billets	2,88,000	6,00,000

1.4 Water Requirement

Water is required in the plant for Induction Furnace Cooling, Concast Cooling, TMT Bar Cooling and domestic purposes. The total water requirement of the plant is 136 KLD with freshwater requirement of 53 KLD and recycled water requirement of 83 KLD after the proposed expansion proposal. Water requirement in the plant is for Induction Furnace Cooling, Concast Cooling, TMT Bar Cooling, and domestic purposes. The entire water requirement will be sourced from SIPCOT bore wells. Water requirement details are provided in **Table - 3**.

TABLE – 3: WATER REQUIREMENT

S. No.	Activity	Fresh Water Requirement (KLD)
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		Existing	After Expansion
1	Cooling Tower make-up	87.08	106
2	Scrubber make-up	0.42	-
3	Domestic requirement	22.25	16
4	Plantation & Water sprinkling	22.25	14
	Total	132.0	136

1.5 Man Power Requirement

The proposed project will provide direct employment to about 350 persons. The man power requirement will be mostly fulfilled by the region of 10 – 15 km radius.

2.0 DESCRIPTION OF THE ENVIRONMENT

2.1 Location and description of the site

The terrain of the land in the plant site is plain and no water streams present in the plant site area. The environmental setting of the proposed plant site is given in **Table - 4**. Study area of 10-km radius around the project site is shown in **Figure - 1**.

TABLE – 4: ENVIRONMENTAL SETTING IN 10-KM RADIUS

S. No.	Particulars	Details
1	Latitude	13°25'20.55"N
2	Longitude	80° 6'29.32"E
3	Elevation above MSL	28 m
4	Topography	Plain Terrain
5	Nearest Highway	NH- 5 (0.7 km, East)
6	Nearest Railway station	Gummidipoondi R.S. (2.2 km, SE)
7	Nearest Air Port	Chennai Intl. Airport (46.7 km, S)
8	Nearest Habitation	Kayalamedu (0.4 km, NE)
9	Nearest Town	Gummidipoondi (1.7 km, S)
10	Reserve Forests	Puliyur forest R.F (6.8 km, W) Manali R.F (9.8 km, SW)
11	Nearest Waterbody	Thamarai Eari (1.7 km, ESE)

S. No.	Particulars	Details
		Sri Amman Temple pond (2.2 km, SSE) Murugan Temple pond (2.4 km, SE) Siva Temple pond (2.6 km, SSE) Edappalayam lake (6.2 km, SE) Pulicat lake (6.4 km, NNW) Rakkampalayam lake (7.1 km, NE) Arani River (7.2 km, S) Paatupalli lake (7.6 km, E) Poo-Vilambedu Pond (8.5 km, W) Kattavour Eari (9.5 km, SE)
12	Ecologically sensitive sites	Thamarai Eari (1.7 km, ESE)
13	Defence Installation	Sri Amman Temple pond (2.2 km, SSE)
14	Historical places	Murugan Temple pond (2.4 km, SE)

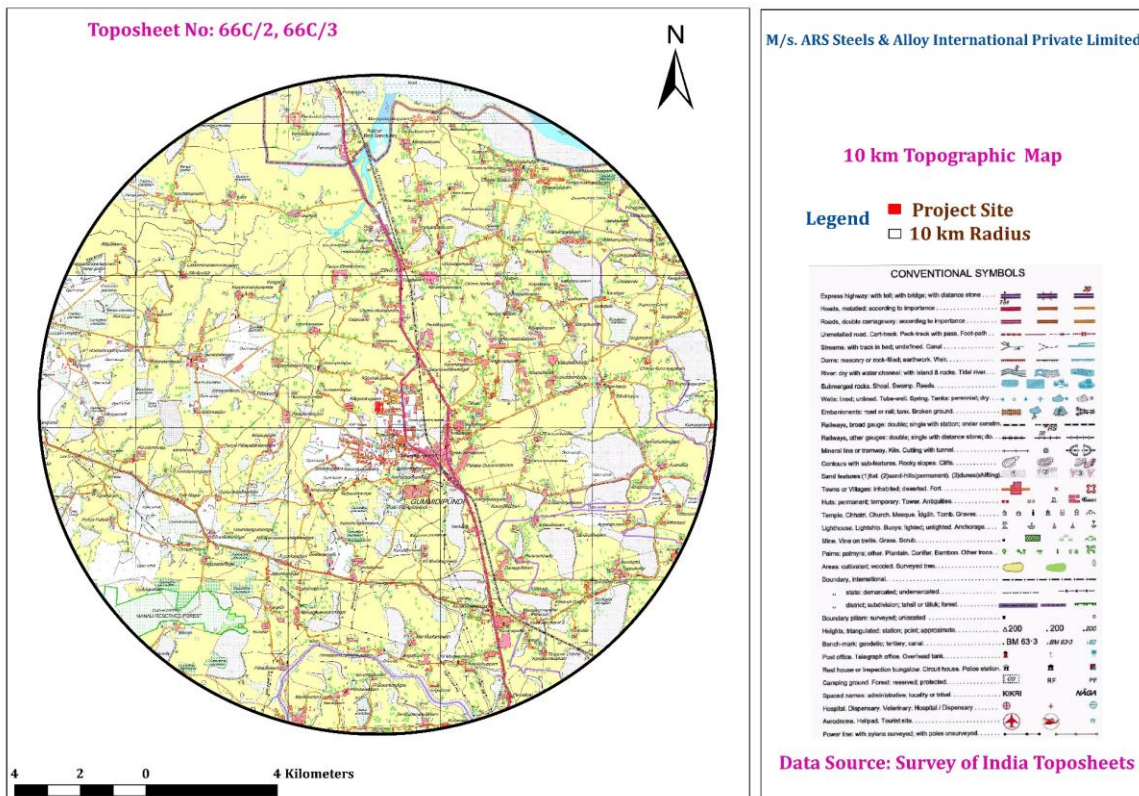


FIGURE-1: STUDY AREA MAP – 10-KM RADIUS

2.2 Baseline environmental monitoring

Baseline environmental monitoring studies for the various environmental attributes were carried out during summer season beginning from the month of June 2024 to August 2024. The details of the base line study are presented as follows:

2.2.1 Meteorology

The predominant wind direction observed during the study period is North. The mean maximum and mean minimum temperatures recorded at site during study period were 38°C and 22°C. The maximum and minimum relative humidity was observed to be 100% and 29% respectively during the study period.

2.2.2 Air Quality

Ambient Air Quality Monitoring (AAQM) stations were set up at five locations. The air samples were analyzed as per standard methods specified by Central Pollution Control Board (CPCB), IS: 5184 and American Public Health Association (APHA). The maximum and minimum concentrations for PM₁₀ were recorded as 69 µg/m³ and 31 µg/m³ respectively. The maximum concentration was recorded at Gumidipoondi and the minimum concentration was recorded at Theruli. The average concentrations were ranged between 37.8 – 63.4 µg/m³. The maximum and minimum concentrations for PM_{2.5} were recorded as 34 µg/m³ and 12 µg/m³ respectively. The maximum concentration was recorded at Gumidipoondi and the minimum concentration was recorded at Theruli. The average values were observed to be in the range of 15.8-28.7 µg/ m³. The maximum and minimum concentrations for SO₂ were recorded as 25 µg/m³ and 4 µg/ m³ respectively. The maximum concentration was recorded at MTC Business Pvt Ltd Unit-3 - Pappankuppam and the minimum concentration was recorded at Theruali. The average values were observed to be in the range of 5.8 – 22.5 µg/m³. The maximum and minimum NO₂ concentrations were recorded as 42 µg/m³ and 6 µg/m³. The maximum concentration was recorded at Gumidipoondi and the minimum concentration was recorded at Theruali. The average values were observed to be in the range of 11.2 – 35.3µg/m³. The concentrations of other parameters like Ozone, Ammonia, Benzene, BaP, Lead, Arsenic and Nickel were observed below detection limit. The concentrations of PM₁₀, PM_{2.5}, SO₂ and NO₂ are observed to be well within the

standards prescribed by Central Pollution Control Board (CPCB) for Industrial / Rural / Residential zone.

2.2.3 Water Quality

Ground water

The pH value of the collected ground water in the study area varies between 6.67 to 8.08 and conductivity varies from 239 to 1439 $\mu\text{S}/\text{cm}$. TDS values were found to be from 131 to 93 mg/L. The Total alkalinity varies from 55.4 to 474 mg/L and Total Hardness varied from 74.1 to 661 mg/L.

The chloride values were found to be in the range 20.1 mg/L to 225 mg/L and Sulphate values varies from 5.41 mg/L to 149 mg/L. The Calcium and Magnesium values range from 22.4 to 169 mg/L and 4.44 to 63.8 mg/L respectively.

Surface water

The pH value of the collected Surface water in the study area is 7.8 & 8.56 and conductivity 574 & 2710 $\mu\text{S}/\text{cm}$. TDS values were found to be 346 & 1491 mg/L. The Total alkalinity is 127 & 389 mg/L and Total Hardness is 146 & 445 mg/L.

The chloride values were found to be 79.4 & 374 mg/L and Sulphate values is 56.5 & 252 mg/L. The Calcium and Magnesium are 28.3 & 128 mg/L and 18.3 & 30.5 mg/L respectively.

2.2.4 Soil Quality

Eight locations within 10-km radius of the project site were selected for soil sampling. At each location, soil samples were collected from three different depths viz. 30 cm, 60 cm and 90 cm below the surface and homogenized. The homogenized samples were analyzed for physical and chemical characteristics. It has been observed that the pH of the soil was ranging from 5.81 to 8.01 indicating the soils are neutral to slightly alkaline in nature. Conductivity of the soil ranges from 0.09 to 2.86 mS/cm indicating the soil in the study area is non-saline in nature. Soil organic content varied from 0.3 to 3.64% which indicates average to more than sufficient quantities of organic matter. The

available nitrogen content ranges between 0.04 to 0.33 kg/ha, indicate in the soil has better quantity of Nitrogen in the locality. The value of phosphorus content varies between 165 to 193 kg/ha indicates that the soil has average sufficient quantities of Phosphorus. The potassium content varies from 22.3 to 787 kg/ha which indicates that the soils have sufficient quantities of potassium.

2.2.5 Noise Levels

The noise monitoring has been conducted for determination of ambient noise levels at five locations in the study area. The Average Noise levels during day time were found to be in the range 48 to 64 dB(A). The maximum noise level was observed to be 64 dB(A) at Viki Steel, SIPCOT and a minimum of 48 dB(A) was observed at Theruli. Noise levels observed to fall in the range 39 to 51 dB(A) during the night time. The maximum of 51 dB(A) was observed at Viki Steel, SIPCOT and a minimum of 39 dB (A) was observed at Theruli.

2.2.6 Ecology

Field survey concluded that the forests in the study area are under anthropogenic pressure and show signs of degradation in the form of tree cutting, lopping, grazing and collection of Non timber forest products (NTFPs) and habitat fragmentation. As per MoEF and Forest Department of Tamil Nadu state, there are no National parks/biosphere reserves in 10 km radius from the plant boundary. The Pulicat Sanctuary is located at distance of 7.8 km from project site. We obtained NBWL clearance for Pulicat Sanctuary. As per the records of the Botanical Survey of India, there are no plants of conservation importance in the study area. It can be concluded that there are no species belonging to Sch- I, two Sch-II species present in the study area and rest of the species belongs to Sch-III, Sch-IV and Sch-V of Wildlife Protection Act, 1972.

3.0 ANTICIPATED ENVIRONMENTAL IMPACTS & MITIGATION MEASURES

The anticipated environmental impacts and mitigation measures are presented in **Table-5**.

**TABLE – 5: ANTICIPATED ENVIRONMENTAL IMPACTS & MITIGATION
MEASURES**

Discipline	Potential Negative Impacts	Probable Source	Mitigative Measures	Remarks
Constructional Impact				
Water Quality	Increase in suspended solids due to soil run-off during heavy precipitation	Loose soil at construction site	During monsoon season run off from construction site will be routed to a temporary sedimentation tank for settlement of suspended solids.	---
Air Quality	Increase in dust and NO ₂ concentration	Leveling activity and Vehicular movement	Sprinkling of water in the construction area and unpaved roads. Proper maintenance of vehicles will be done.	The impact will be low, as the main approach road is tarred.
Noise	Increase in noise level	Construction equipment	Equipment will be kept in good condition to keep the noise level within 85-dB (A).	Workers will be provided with necessary protective equipment e.g. ear plug.
Terrestrial Ecology	Depression of plant growth	Dust emission from construction	Landscaping and extensive plantation will be done.	Plantation will be done in consultation with the local forest department.
Operational Impact				
Air Quality	Increase in PM, SO ₂ and NO ₂ levels in ambient air.	Stack emissions and material handling	Adequate APC measures like Bag filter will be provided to reduce the emissions from induction furnaces / electrical arc	The resultant air quality will confirm to the stipulated standards.

Discipline	Potential Negative Impacts	Probable Source	Mitigative Measures	Remarks
			<p>furnace & reheating furnace.</p> <p>Adequate stack height will be provided for the proper dispersion of gaseous pollutants.</p> <p>Motorable roads in the plant area will be paved to reduce dust emission.</p> <p>Plantation programs will be undertaken around the plant area.</p> <p>Dust suppression measures will be implemented material handling area.</p>	<p>Particulate emission from the proposed furnaces stack will be kept below 150 mg/Nm³.</p>
Noise	Increase in noise levels in the plant area.	Equipment in main plant and auxiliaries	<p>Equipment will be designed to conform to noise levels prescribed by regulatory agencies.</p> <p>Providing acoustic enclosure as source control. Provision of green belt and plantation would further help in attenuating noise.</p>	<p>Employees working in high noise areas would be provided earplugs as protective device.</p>
Water Quality	Deterioration of surface water quality.	Discharge from domestic usages.	<p>Adequate capacity of Sewage Treatment Plant is proposed for treatment of sewage.</p> <p>No waste water will be disposed to the outside of the plant premises.</p>	---
Solid waste	Furnace slag, dust from APC measures, Scraps & Fly Ash	Furnaces, Rolling and APC measures	All sort of solid waste will be disposed suitably.	Efforts will be made to utilize the solid waste

Discipline	Potential Negative Impacts	Probable Source	Mitigative Measures	Remarks
				to the extent possible.
Ecology				
a. Terrestrial	Impact on plant species	Emissions from stack	Emission will be controlled as well as dispersed through appropriate design.	As ambient air quality will be within limits, no active injury to the vegetation is expected.
b. Aquatic	Impact on aquatic life of the water bodies	Domestic Sewage	The domestic wastewater will be treated with adequate treatment facilities (STP)	As the sewage water will be treated properly no significant impact on aquatic life is expected.
Demography and Socio-economics	Strain on existing amenities like housing, water sources and sanitation, medical and infrastructure facilities.	Influx of people due to proposed employees as well as contractor employees/labourers.	Most the worker requirement will be fulfilled by local people. No significant impact is envisaged	Overall socio-economic status of the area is expected to improve.

4.0 ENVIRONMENTAL MONITORING PROGRAM

Environmental monitoring will be conducted on regular basis by M/s. ARS Steels & Alloy International Private Limited to assess the pollution level in the surrounding area. A comprehensive monitoring program is suggested in **Table – 6**.

TABLE – 6: SCHEDULE FOR ENVIRONMENTAL MONITORING

S. No.	Component	Parameter	No of Locations	Frequency/ Duration
1	Ambient Air Quality	PM10, PM2.5, SO2, NO2, CO, Pb, As, Ni, NH3, O3, C2H6 & BAP.	4	Once in a month
2	Fugitive Emission	PM10, PM2.5, SO2, NO2 & CO	4	Once in a month
3	Stack Emission Monitoring	PM, SO2, NO2, CO & HC	4	Once in a month
4	Source Noise	Instantaneous Noise level in dB(A)	6	Once in a month
5	Ambient Noise Quality	Ambient noise level (Leq, LDay & LNight)	4	Once in a month
6	Ground water Quality	Parameters specified under IS:10500, 1991	2	Once in 3 months
7	Soil Quality	Parameter for soil quality: pH, texture, EC, Organic Matter, N, P, K, Na, Ca & Mg	2	Once in 6 months

5.0 ADDITIONAL STUDIES

A preliminary risk assessment study, disaster management plan & occupational health & safety has been carried out for the proposed project and associated facilities like HSD storage and it is concluded that there will be no significant community impacts or environmental damage consequence.

The hazardous event scenarios and risks in general at this facility can be adequately managed to acceptable levels by performing the recommended safety studies as part of detailed design, applying recommended control strategies and implementing a Safety Management System.

6.0 PROJECT BENEFITS

The basic requirement of the community needs will be strengthened by extending health care, educational facilities to the community, strengthening of existing roads in the area. M/s. ARS Steels & Alloy International Private Limited will initiate the above amenities

either by providing or by improving the facilities in the area, which will help in uplifting the living standards of local communities. Medical facilities will be augmented in dispensaries located near to the area. These medical facilities would also be available to local people in the surrounding in case of emergencies. The proposed project will result in improving the social infrastructure in following manner:

- Generation of employment and improved standard of living;
- Establishment of small-scale ancillary & supply industries;
- Increased revenue to the state by way of royalty, taxes and duties;
- Improved communication and transport facilities etc.

The total manpower required for the proposed project during the operation phase is about 350 persons which would be mainly sourced from local community in and around the Project site and few technical persons will be employed from outside area. In addition to the above, indirect employment opportunities shall arise after the proposed project existed.

7.0 EMP - ADMINISTRATIVE ASPECTS

A permanent organizational set up will be formed to ensure the effective implementation of mitigation measures and to conduct environmental monitoring. The major duties and responsibilities of Environmental Management Cell will be as follows:

- To implement the environmental management plan;
- To ensure regular operation and maintenance of pollution control devices;
- To assure regulatory compliance with all relevant rules and regulations;
- To minimize environmental impacts of operations by strict adherence to the EMP;
- To initiate environmental monitoring as per approved schedule;
- Review and interpretation of monitored results and corrective measures in case monitored results are above the specified limit;
- To report the non-compliances / violations of the environmental norms to the board directors of the company.

The activities of the EMP cell will be supervised by Environmental Manager of the unit who will report to the Vice President of the proposed project. Engineer & Technicians will report the issues to the Env. Manager to make the possible preventive actions.

8.0 CONCLUSIONS

The proposed project will have certain level of marginal impacts on the local environment. However, development of this project has certain beneficial impact/effects in terms of providing the employment opportunities that the same will create during the course of its setting up as well as during operational phase of the project. Thus, it can be concluded that with the judicious and proper implementation of the pollution control and mitigation measures, the proposed project will be beneficial to the society and will help reduce the demand – supply gap of steel products and will contribute to the economic development of the region in particular and state in general.