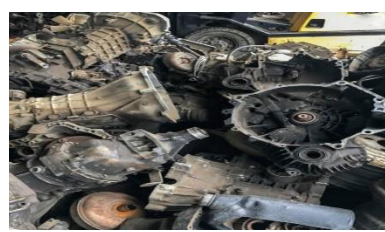


ENVIRONMENTAL IMPACT ASSESSMENT (EIA)
ITTEFAQ METAL RECYCLING
(Sher Rabbani, Industrial Estate, 14 Km near Uni Foam FACTORY, Multan Road, Lahore)

May 2023



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DISCLAIMER

The data was based on the originality of project site shown by the project proponent/ stakeholders/ promoters, provided maps, verbal communications and all other related documents. The authenticity of supra-mentioned relies with the proponent/ stakeholders/ promoters, not with the environmental consultant. The EIA report can't be negotiated in any court of law.

Author:

Environmental Consultant

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EXECUTIVE SUMMARY

Title and location of project

This document forms the Environmental Impact Assessment for M/S Ittefaq Metal Recycling. The purpose of this subject project is to full fill the requirement of non-ferrous metals as the use of non-ferrous metals has continued to increase over the years. The amount of aluminum in production alone is astonishing! It is estimated that world primary production of aluminum is around 66 million tons on average per year, of which China, Australia, and Brazil are the largest producers. With metal production in general on the rise, and the valuable resources necessary for their production dwindling, it is more important than ever to find ways to find further value out of scrap metal reuse. The recovery of non-ferrous metals for recycling provides both environmental and economic benefits.

As our country is facing energy crises and to minimize this crises metal recycling project seems one of the most sought-after commodities in recycling, and the reason is much energy is saved when we recycle metal versus mining new metal ores.

When it comes to aluminum, for example, recycling scrap aluminum requires just five percent of the energy needed to produce virgin aluminum, and copper recycling is almost as efficient, with the copper recycling process requiring just 15 percent of the energy needed to mine the earth for new copper ore.

The production of non-ferrous metal by recycling process from non-ferrous scrap under environmentally controlled system where non-ferrous metals, especially nickel, silver, copper, aluminum, and tin all share the property of being able to undergo an unlimited number of instances of recycling without losing any of their original properties.

The subject project for which this Environmental Impact Assessment has been conducted is the establishment of M/S Ittefaq Metal Recycling at Sher Rabbani, Industrial Estate, 14 Km Near Unifoam Factory, Multan Road, Lahore-Pakistan.

Under the Pakistan Environmental Protection Act 1997 (PEPA-97), clause 12, it is required that the proponent of any development project will have to submit an IEE report to the concerned Environmental Protection Agency/Department to obtain approval prior to start of construction or operation of the project.

Project Proponent

Mr. Javed Ahmed Bhatti proponent of proposed project needs to get NOC for compliance of Section 12 to establish its metal recycling business.

Name	Javed Ahmed Bhatti
CNIC	35202-2253510-5
Mobile No	0300-8402665
Address	H.No. 10 C, Sector EME, DHA, Multan Road Lahore
Mailing Address	Ittefaq House, 369/D-2 Johar Town Lahore 54782 Pakistan.
E mails	info@ittefaqmetals.com

Table 1: Detail of Proponent

The EIA Study Consultant

To comply with IEE/EIA regulations 2022 as per Punjab Environmental Protection (Amendment) Act (PEPA) 2012, M/S Ittefaq Metal Recycling has engaged *TQMI* Environmental Consultants with the assignment of carrying out an Environmental Impact Assessment (EIA) for “establishment of M/S Ittefaq Metal Recycling at Sher Rabbani, Industrial Estate, 14 Km Near Unifoam Factory, Multan Road, Lahore-Pakistan.

TQMI Environmental Consultants Office: 224 G-III Sector, Wapda Town Lahore.
Ph: + 92-42-35069177 Cell: 0309-4038442, 0300-9459032 E-mail: tqmi_749@hotmail.com

Brief Description of the Project

The project is proposed to be located at Sher Rabbani, Industrial Estate, 14 Km Near Unifoam Factory, Multan Road, Lahore-Pakistan. M/S Ittefaq Metal Recycling will deal with varieties of non-ferrous metal scrap, i.e., aluminum, copper, brass, lead, etc. In addition, Ittefaq Metal Recycling will manufacture several types of aluminum alloy ingots in accordance with the necessary criteria and specifications and ship them internationally. These are permanent, engineered structures, in which a modern facility where IMR high-quality goods will be processed. With its innovative and completely automated mechanism, IMS rotary furnace plant, with a capacity of 8 tons per heat and 8000 tons per year, will be the state of the art. IMR laboratory will be equipped with an Italian-brand metal analyzer, the "GNR," to ensure quality requirements.

The proposed site located at latitude of 31°36'45.7"N and longitude of 74°18'25.2"E with elevation of around 217 meters 712 ft.

For further details, Location & Site Layout plan of the project is attached as Annexure-D with this report.

Location of the Project

Project site is located at Sher Rabbani, Industrial Estate, 14 Km Near Unifoam Factory, Multan Road, Lahore-Pakistan. Land coordinates of the project site are given below:

Front Side ----- 20ft Road
Back Side ----- Residence
Right Side ----- Warehouse
Left Side ----- Open Land



Figure 1: Picture of Project Site

Major Impacts and Recommendations for Mitigation Measures

The following major impacts associated with the project location of the project have been identified and mitigation measures proposed:

Table 2: Summary of Major Impacts & their Proposed Mitigation during project location

Potential Impact	Criteria for determining Significance	Key Mitigation Measures
Acquisition of land/Resettlement	Social problems	Proper resettlement planning and budgeting, community consultation.
Interference of sewage/drainage facilities with other utilities/street, land value changes.	Nuisances/disturbances to public, social problems	Proper compensation allowances for losses in project budget.
Loss/damage historical/cultural/monuments/values	Loss of irreplaceable values	Careful planning/design to minimize losses by providing offset, follow minimum distances chart.
Encroachment on ecological areas	Loss of ecology	Careful silting to minimize problem, follow minimum distances chart.
Acquisition of land	Loss of land, livelihood, assets,etc.	Consultations with affected people in the issues of land acquisition, or loss of livelihood, if any.

Table 3: Summary of Major Impacts & their Proposed Mitigation during project design.

Potential Impact	Criteria for determining Significance	Key Mitigation Measures
Environmental Impacts/hazards	Contamination of environment	Competent design
Inadequate attention/services to people	Social problems	Appropriate distribution of services through community consultation.
Temporary accommodation for construction workers - slum hazards/for storage of project equipment, materials, etc.	Unnecessary increase in social problems/Impact on soil and water and soil/Health Risks/Chances of spread of transmittable diseases like COVID-19.	Appropriate planning by effective community consultation, the equipment and construction material shall be placed at least 500m away from water bodies, Equipment and materials shall be stored at designated areas with concrete flooring to avoid any spillages which may lead to soil or ground water contamination, The domestic effluent shall be properly disposed of in soak pits. Contractor shall provide garbage bins to all workers 'accommodation for dumping wastes regularly in a hygienic manner in the area, Awareness programs to be conducted regularly for workers on COVID-19, and other health related issues, Health checkup facilities for employees and contract workers.
Site Clearing and Leveling	Soil erosion, Air pollution	Planning and designing the development within the natural constraints of the site, Avoiding the unnecessary clearing of the site, Water sprinkling shall be practiced Construction machinery shall be properly maintained to minimize exhaust emissions of CO, SPM and Hydrocarbons.
Hazardous materials thrown illegally in sewers e.g., any chemical	danger to workmen	Careful planning and design, separate treatment for hazardous materials disposal.
Inadequate methods for waste disposal	Environmental pollution	Careful planning and design.
Inadequate management of industrial wastes discharge to sewers	Damages to pipes	Careful planning and design.
Water/sewer/pipes in same trench	Health hazard if not properly designed and constructed	Careful design

Table 4: Summary of Major Impacts & their Proposed Mitigation during Construction Phase.

Potential Impact	Criteria for determining Significance	Key Mitigation Measures
Dust Emissions: Dust and PM may be generated during road construction and excavation activities. Gaseous emissions from site generators and transportation vehicles may affect ambient air quality in the vicinity of the project site which causes contamination of environment	An increase in visible dust beyond the boundaries of the construction site or Concentration of PM10 in excess of 150 ($\mu\text{g}/\text{m}^3$) PEQS for Ambient Air	Sprinkling of water on dusty roads, tracts and surfaces is recommended; During excavation works drop heights will be minimized to control the fall of materials reducing dust escape. Use of wind shield around stockpiles is recommended Vehicle speed restrictions should be applied in the project area; Raw materials should be transported in covered trucks.
Solid waste Management: If solid waste will not be managed properly, it may cause negative impacts.	Generation of excessive waste; Recyclable waste and reusable waste is discarded, Littering, Improper disposal.	Constructional waste should be utilized for road filling and maintenance purposes. Domestic waste should be disposed of properly, handed over to contractors, placed in bins. Proper solid waste management plan should be devised and implemented.
Waste water: water used in construction process and excessive water generate as wastewater and it also produced from campsite domestic activities.	PEQS parameters	Waste water after treatment should be drain out in nearby drain
Construction Noise: Noise may be generated during landscaping activities and from generators and transportation.	OSHA standards	Activities generating high levels of noise should be minimized at the project site. If the noise level will exceed the permissible limits with reference to national standards, following recommendations are suggested to take action against the high noise levels: - Proper tuning of construction machinery and vehicles is recommended. - Ear muffs and ear plugs are recommended in case of high noise levels. - Rubber wounds should be placed underneath the generator to avoid the vibration (if any).

Vegetation Loss/ Soil erosion: Minor negative impact may arise as if only some weeds and grasses will present at the project site which will be cleared for the purpose of construction.	Unnecessary or excessive removal of trees and shrubs.	No tree cutting/ vegetation loss issue will be involved in the subject project. Preparation of a Reinstatement Plan to restore the land after the constructional activities is recommended.
Soil Contamination: Oil and Chemical spills can contaminate the soil.	Presence of visible amount of hydrocarbon in soil.	Provision of spill prevention and control kits Use of impermeable surfaces in workshops, and storage areas; Contaminated soil will be collected and incinerated (if any).
Traffic issues: Traffic issues may arise due to the constructional activities at the project site if traffic will not be managed properly.	Traffic rules and Regulations	Speed limit of 10 km/h should be maintained on the access road. Ample parking area must be allocated at the project site. Guards should be hired to manage the traffic at the project site.
Socioeconomic impacts: Inter-cultural differences between the project staff from other areas and the local community may arise due to the subject project. Positive socioeconomic impacts due to increased infrastructure, employment opportunities and economic growth.	No community complaints. Increased employment facilities in the area; Increased infrastructure	Training of the non-local project staff on local culture and norms. Avoidance of unnecessary interaction of local population with the non-local project staff. Employment opportunities should be provided to the local people.

Table 5: Summary of Major Impacts & their Proposed Mitigation during Operational Phase

Potential Impact	Criteria for determining Significance	Key Mitigation Measures
Fire, explosion and excessive contaminant sources	PEQS for Ambient Air Ecosystem destruction and biodiversity loss Receipt of unacceptable materials. Presence of flammable and combustible materials.	IMR should ensure the PEQS compliance and should not be allowed to emit hazardous pollutants. Air Emission Control Measures are recommended to control the air emissions (if any) No storage of unacceptable materials on site. Return unacceptable materials to provider. Remove unacceptable materials off site for disposal at licensed facility. Conditions of entry including material acceptance requirements located at site entry. Develop and implement a Fire Emergency Plan (FEP).
Noise, vibration and/or air quality (dust and other airborne contaminants) Noise and light nuisance Odor and air quality nuisance	OSHA Standards Bulk loads of scrap metal are transported and unloaded (dumped from trucks) and from fire and explosion. Equipment operation during product sorting. Nuisance from generation of dust and other airborne contaminants. Odor nuisance associated with storage of open piles of waste material. Generation of noise and light through operation of equipment during feed stockpile material transfer, trucks, alarms, pumps, fragmentizer operation, reverse warning devices and explosions. Odor associated with storage of open piles of waste material during processing, and fragmentizer operation (for example, hot materials).	Activities generating high levels of noise should be minimized at the project site. Personal Protective Equipment PPEs including Ear muffs, Ear plugs and other noise abating equipment will be provided to the workers and other staff in case of noise at the project site. Generator should be covered with canopy (if any). Proper maintenance and tuning of the vehicles should be done. Keep roads free from combustible materials such as hydrocarbons and vegetation at all times. Fragmentizer designed to minimize risk and impact of fire and explosion. Develop and implement a Fire Emergency Plan. Processing activities should be undertaken only by staff trained and competent in the identification of acceptable and unacceptable material to be processed. Develop and implement site procedures regarding waste processing. Conduct visual inspections at regular intervals to assess adequacy of control measures and implement corrective action as required.

	Generation of airborne contaminants (for example, dust, smoke, odor, fumes, paint, paper, plastics, adhesives) through operation of the fragmentizer and associated activities, fire and explosions, wind through processing areas, stockpiling and product / floc transfer.	
Surface water, groundwater and soil contamination	Contaminant leakage during transport and unloading. Sediment laden runoff as a result of dirt and mud build up on internal access roads including entry and exit points. Over supply from suppliers requiring long term storage of excessive volumes of product. Spills and leaks from product and equipment operation leading to the leaching of contaminants. Contaminant spills and subsequent contaminant leaching and runoff. Spills during equipment operation and from fluids released during fragmentizer operation.	Install and maintain sediment collection and removal controls. Controls may include: All site area drain to dirty water containment area (collection pit) for treatment to ensure all liquid contaminants, such as hydrocarbons and dirty water released during processing are contained and treated. Treat spills immediately using appropriate methods. Sort materials in designated product sorting areas only.
Introduction of exotic pests and disease	Contaminated materials from international sources.	Import, store and handle internationally sourced material in accordance with legislated quarantine restrictions.
Loss of recyclable non scrap metal products	Ineffective product sorting at non-scrap metal recycling facilities.	Recycle by products where possible. Provision of adequate recyclable material bins correctly and clearly labelled.

	Ineffective product sorting and non-scrap metal recycling facilities.	
Loss of visual amenity	Large stockpiles Large processing facilities and associated equipment.	Install lighting so as not to cause nuisance to neighboring sensitive receptors.
Damage to personnel and property	Airborne scrap metal materials that may re-deposit off site during storm events.	Minimize stockpile dimensions for light materials scrap and post shredding to reduce risks associated with storm events. Undertake regular housekeeping on site.
Discharge of wastewater: The discharge of untreated municipal wastewater may be a negative impact of the subject project.	PEQS for Municipal Effluents (mg/l, unless otherwise defined)	Wastewater must be treated before its discharge. Compliance of PEQS for effluents should be ensured. Monitoring should be conducted as per PEQS and reports should be submitted to EPA.
Health & Safety Issues: different constructional and operational activities at the project site may cause health and safety issues for workers/caretakers if precautionary measures will not be adopted.	OSHA Standards	Proper training of workers and staff should be conducted to avoid the accidents. Use of PPEs should be implemented at workplace. First aid measures/medical facility should be provided at the project site. Safe drinking water must be provided to workers, staff, and poor people of the area. Safety signs & boards should be placed.
Solid waste management: If solid waste will not be managed properly, it may cause negative impacts.	Exposure to potentially hazardous waste; Generation of excessive waste; Recyclable waste and reusable waste is discarded; Littering	A solid waste management plan should be formulated to deal with the proper disposal of solid waste, supervised by HSE Manager and other related personnel.

Proposed Environmental Monitoring

To oversee the environmental performance of the project through its lifecycle enforcing the PEQS an Environmental Monitoring Program should be formulated which ensures effective surveillance of the environmental parameters at various stages of the project development and compliances with PEQS and legal obligations. Monitoring for following Environmental Parameters is recommended:

Sr. No.	Parameters	Monitoring Schedules	Monitoring Duration
1.	Ambient Air Monitoring (NO _x , CO _x , SO _x , PM ₁₀)	Quarterly	Instant
2.	Noise Level	Quarterly	Instant
3.	Water quality	Quarterly	Some parameters on site, Others in lab

Table 6: Environmental Monitoring

Type and category of the project

According to nature of project, cost of project (Project cost Rs:85 million) and by also reviewing the IEE/ EIA Regulation 2022, M/S Ittefaq Meta Recycling falls under Category **B Manufacturing and Processing** serial no 19 (**Smelting Plant**) of Schedule II of PEPA Regulations, which requires EIA for environmental approval prior to any construction/operation.

CHAPTER No: 01

Introduction

1.1 Purpose of the report

The development of any Project brings about changes, both positive and negative, in the environmental and social settings of the Project Area. The intensity and level of change, however, depends upon the nature of the Project and the baseline environmental conditions of the area. For the last four decades, this aspect has gained momentum both at official and public level. Because of this, official regulations and laws have been promulgated for the protection and conservation of the physical, biological and social environment. The law makes it mandatory to carry out Environmental Impact Assessment (EIA) of the development Projects depending upon the nature and magnitude of the impacts.

Section 12 of Punjab Environmental Protection Act, 1997 (Amended 2012) states that “No proponent of a project shall commence construction or operation unless he has filed with the Environmental Protection Department Punjab an Environmental Impact Assessment (EIA), and has obtained from the EPD Punjab approval in respect thereof.” Environmental Impact Assessment (EIA), report is being submitted to the Environmental Protection Agency (EPA), Government of the Punjab for the compliance of Section 12 of Punjab Environmental Protection Act, 1997 (Amended 2012) for obtaining No Objection Certificate (NOC) before starting the construction activity at the project site.

1.2 Identification of Project and Proponent

According to nature of project, cost of project (Project cost Rs:85 million) and by also reviewing the IEE/ EIA Regulation 2022, M/S Ittefaq Meta Recycling falls under Category **B Manufacturing and Processing** serial no 19 (**Smelting Plant**) of Schedule II of PEPA Regulations, which requires EIA for environmental approval prior to any construction/operation.

Project Proponent

Mr. Javed Ahmed Bhatti proponent of proposed project needs to get NOC for compliance of Section 12 to establish its metal recycling business.

Name	Javed Ahmed Bhatti
CNIC	35202-2253510-5
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E mails	info@ittefaqmetals.com

Table 1: Detail of Proponent

1.3 The IEE Study Consultant

To comply with IEE/EIA regulations 2022 as per Punjab Environmental Protection (Amendment) Act (PEPA) 2012, M/S Ittefaq Metal Recycling has engaged *TQMI* Environmental Consultants with the assignment of carrying out an Environmental Impact Assessment (EIA) for “establishment of M/S Ittefaq Metal Recycling at Sher Rabbani, Industrial Estate,14 Km Near Unifoam Factory, Multan Road, Lahore-Pakistan.

TQMI Environmental Consultants Office: 224 G-III Sector, Wapda Town Lahore.
Ph: + 92-42-35069177 Cell: 0309-4038442,0300-9459032 E-mail: tqmi_749@hotmail.com

List of names, qualifications and roles of team members carrying out IEE study.

S.No	Name	Designation/Qualification	Roles and Responsibilities
1.	Engr.M.Akram Khan	Environmental Consultant/ BSc Met Engg UET LHR BSc Elect Engg UET LHR Lead Editor Environmental Management System.	To frame all environmental related reports IEE/EIA etc. To train the Management staff, to perform the environmental monitoring functions during the construction and operation stage.
2.	Muhammad Ali	Environmental Manager/MBA.	Stakeholders and Public Consultation
3.	Muhammad Asim	Analyst/ B.Com.	Project Coordinator

1.4 Brief Description the Project

1.4.1 Nature and size of the Project

The said project is proposed for the establishment of M/S Ittefaq Metal Recycling at Sher Rabbani, Industrial Estate, 14 Km Near Unifoam Factory, Multan Road, Lahore-Pakistan. The total area of the project is 77046.753-SFT. Total cost of the project is 85 Million.

1.4.2 Project Cost Budget

The cost which is required to effectively implement the mitigation measures is important for the sustainability of the Project in operation stage of the Project. Management will allocate 2% of total cost (Rs: 85,000,000/-) of the project as Environmental Budget.

Table 7: Budgeted Project Cost

Land and infrastructure	Rs.60000000/-
Electricity Installation	Rs.6000000/-
Rotary Furnace of Capacity 8 MT per Heat (Complete Plant)	Rs.12500000/-
Conveyor	Rs.3500000/-
Overhead Crane	Rs. 500000/-
Metal Analyzer	Rs.1000000 /-
Smoke Process Plant	Rs.1000000/-
Generator	Rs.500000/-
Total	Rs. 85,000,000/-

1.4.3 Location of the Project

Project site is located at Sher Rabbani, Industrial Estate, 14 Km Near Unifoam Factory, Multan Road, Lahore-Pakistan. Land coordinates of the project site are given below:

Front Side ----- 20ft Road
Back Side ----- Residence
Right Side ----- Warehouse
Left Side ----- Open Land



Figure 1: Picture of Project Site

CHAPTER No: 02

2 Description of the Project

This chapter presents all aspects of the proposed project. It details the nature of the proposed establishment of "M/S Ittefaq Metal Recycling at Sher Rabbani, Industrial Estate, 14 Km Near Unifoam Factory, Multan Road, Lahore-Pakistan" and proposed installation of machinery, its location, designs and site layout/plan. It presents the activities that will be involved during all stages of project; how product will form, detail of process and machinery as well as details on supportive resources i.e. man power and utility requirements.

2.1 Type and category of the project

According to nature of project, cost of project (Project cost Rs:85 million) and by also reviewing the IEE/ EIA Regulation 2022, M/S Ittefaq Meta Recycling falls under Category **B Manufacturing and Processing** serial no 19 (**Smelting Plant**) of Schedule II of PEPA Regulations, which requires EIA for environmental approval prior to any construction/operation.

2.2 Objective of the Project

Objectives of the Project are to preserve natural resources as recycling metal replaces the need to produce virgin metal. In turn, this preserves precious natural resources like coal and iron ore used in metal production. It's essential to consider resources like coal, as its combustion is a top contributor to climate change.

Further Non-Ferrous Metal Recycling results in less pollution, greater energy savings, and is overall more environmentally friendly. Non-Ferrous Metal Recycling creates additional employment opportunities. Non-Ferrous Metal Recycling provides additional materials for reuse in manufacturing and to create new jobs, reduce poverty, encourage development in Punjab and resultantly increase the GDP of the country.

Following are the main objectives of the proposed project:

- To enhance the economic growth of country;
- To free up operational space;
- To create a safer work environment;
- To make environmentally friendly by less pollution, greater energy savings;
- To provide provides additional materials for reuse in manufacturing;
- To make a source of additional revenue for our business, and eliminates the need to pay someone else to haul it away;
- To encourages the development of additional markets;
- To develop a sustainable economic approach to interlink various industries;
- To provide more job opportunities to local rural public and to improve their living standards;
- To improve the economic activities.

The project will contribute in eliminating unemployment and will best make the use of available resources. This project will create employment to local public and to improve their living standards.

2.3 Alternative Considerations

2.3.1 Location alternatives

To fulfill the commercial aspects of the project under reference of this EIA Report, it is to be sited at a place where commercial processing activity is either already going on or there are bright prospects of the same. Concurrently, it must also meet the legal requirements of the Punjab Environmental Protection Act, 1997 (Amended 2012). Availability of land at the best convenient place is equally important among other considerations for the site selection. Availability of access roads, communication facilities, electricity, basic infrastructure, sewerage etc. is yet the other necessary requirements.

2.3.2 Modified Construction Technology Alternatives

The proposed development will be constructed using modern, locally and internationally accepted technology and materials to achieve public health, safety, security and environmental aesthetic requirements. Equipment that saves energy will be given first priority without compromising on cost or availability factors.

2.3.3 Technology Alternatives

M/S Ittefaq Metal Recycling is an Environmental conscious company which intends to use modern and state of art machinery with minimum impacts on Environment.

2.4 Location & Site Layout of Project

Project site is located at Sher Rabbani, Industrial Estate, 14 Km Near Unifoam Factory, Multan Road, Lahore-Pakistan. Land coordinates of the project site are given below:

Front Side ----- 20ft Road
Back Side ----- Residence
Right Side ----- Warehouse
Left Side ----- Open Land

For further details, Location & Site Layout plan of the project is attached as Annexure-D with this report.



Figure 2: Google Earth Map of Project Site

2.5 Land use on the site

Subject project is the establishment of " M/S Ittefaq Metal Recycling Sher Rabbani, Industrial Estate, 14 Km Near Unifoam Factory, Multan Road, Lahore-Pakistan"; the land is property of proponent of M/S Ittefaq Metal Recycling, land ownership documents are attached with this report. There will be no involvement of tree cutting at any stage of the project construction activities. There are no significant negative impacts on the environment due to the project location/ selected site, as project is present in proponent own land purchased.

2.6 Road Access

A properly develop road network is the key of success for the business projects, as these roads are important for the reception of raw materials and distribution of business goods. Hence, at Sher Rabbani, Industrial Estate, 14 Km Near Unifoam Factory, Multan Road, Lahore-Pakistan a well thought road network exists for faster and safer accessibility, N5 is also very near to the site and Lahore Islamabad Motor Way (M-2) is also very near. All roads are wide enough for long trailers and containers.

Name of the proposed project	M/S Ittefaq Metal Recycling
Purpose of the Project	The purpose of this subject project is to preserve natural resources as recycling metal replaces the need to produce virgin metal. In turn, this preserves precious natural resources like coal and iron ore used in metal production. It's essential to consider resources like coal, as its combustion is a top contributor to climate change. Further Non-Ferrous Metal Recycling results in less pollution, greater energy savings, and is overall more environmentally friendly. Non-Ferrous Metal Recycling creates additional employment opportunities. On-Ferrous Metal Recycling provides additional materials for reuse in manufacturing and to create new jobs, reduce poverty, encourage development in Punjab and resultantly increase the GDP of the country.
Final Product	Secondary Aluminum Ingots
Land Requirement	
Total Area	77046.753 Sq. feet
Status and location	
Location of the proposed site	At Sher Rabbani, Industrial Estate, 14 Km Near Unifoam Factory, Multan Road, Lahore-Pakistan.
Water Requirement	
Water consumption for the project	Approximately 300 Gallons/ day during construction phase.

The complete project will comprise of following sections:

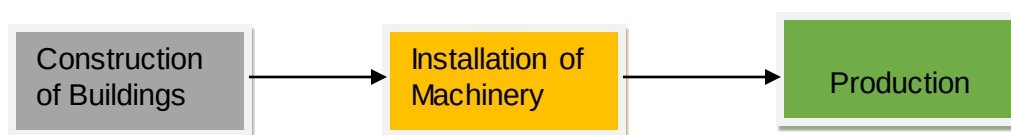
- Office building
- Industrial Shade
- Rotary Furnace of Capacity 8 MT per Heat (Complete Plant)
- Conveyor
- Overhead Crane
- Metal Analyzer
- Smoke Process Plant
- Generator

2.7 Vegetation features of the site

No any vegetation features present because industrial shade and buildings are already established (old premises and property of proponent where he wants to install this new metal recycling unit).

2.8 Cost and Magnitude of Operation

Approximate cost of the project is 85 Million which include the cost of development works.



2.9 Schedule of implementation

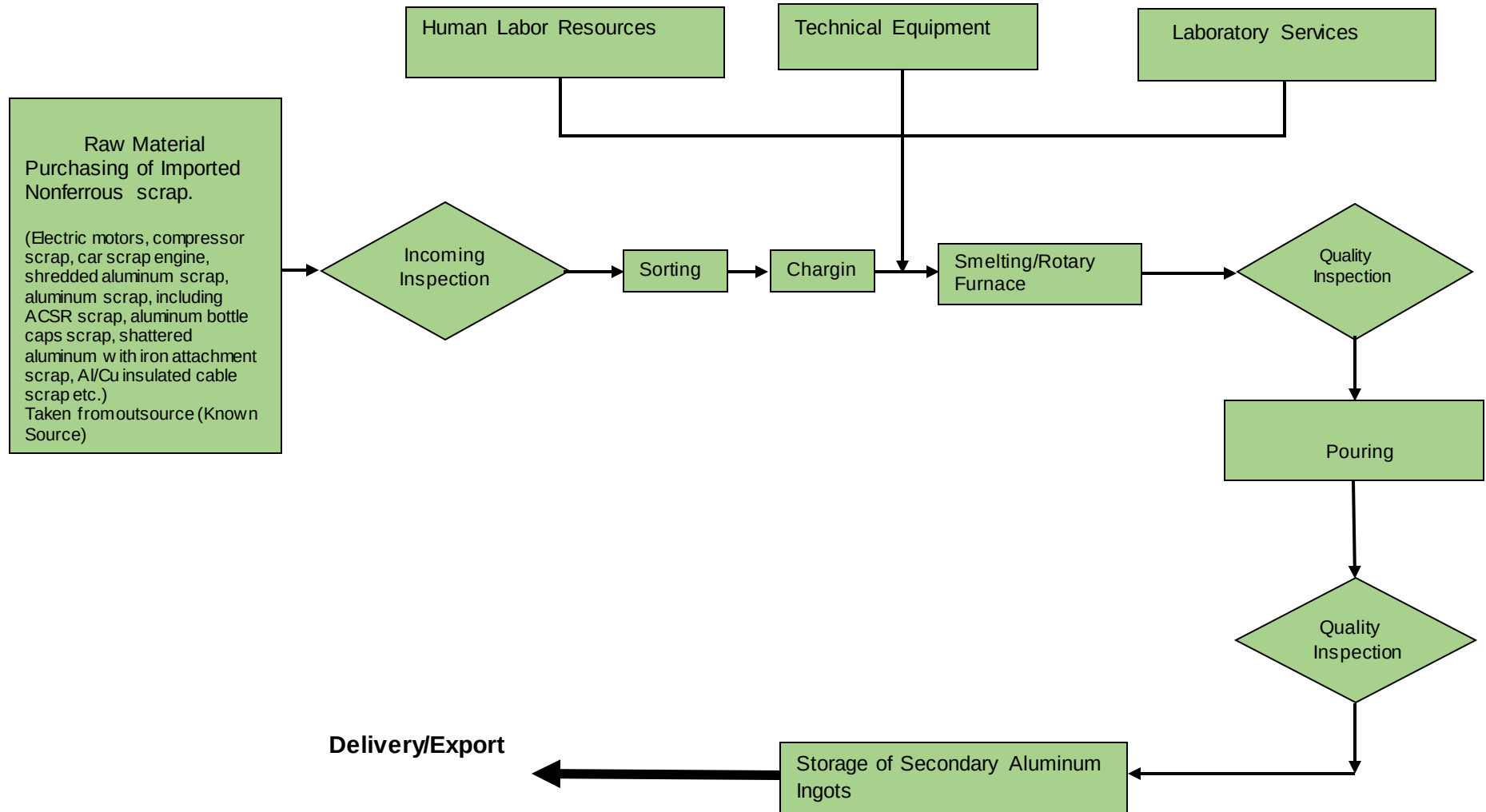
The project is proposed the establishment of “M/S Ittefaq Metal Recycling at Sher Rabbani, Industrial Estate, 14 Km Near Unifoam Factory, Multan Road, Lahore-Pakistan”; said installation will be completed within few months (3 months) from the issued date of environmental approval.

2.10 Description of the Project

The project is proposed the establishment of a new set up “M/S Ittefaq Metal Recycling at Sher Rabbani, Industrial Estate, 14 Km Near Unifoam Factory, Multan Road, Lahore-Pakistan”; over an area of 77046.753-SFT for the production of Secondary Aluminum Ingots by recycling of non-ferrous metal scrap that boost the efficacy and quality of its products while lowering the company’s environmental impact and to create new jobs, reduce poverty, encourage development in Punjab and resultantly increase the GDP of the country. Total cost of the project will be 85 Million.

The Project Proponent is professionally qualified and have valuable and extensive experience of business management in business fields namely Mr. Javed Ahmed Bhatti. The overall management and control of the Company will be actively managed by the full time paid management under the direct supervision of Mr. Javed Ahmed Bhatti the Project Proponent who will actively participate in management decisions and control the affairs of the Company.

2.10.1 Process Flow Chart



2.10.2 Metal Recycling Process

Purchasing nonferrous metal scrap

Nonferrous metal scrap will be imported and then transported to recycling unit where they will be sorted out, cleaned and processed into ideal materials for Manufacturing. Proper segregation is important to ensure that they can be used in the smelter and to achieve added value and marketable products.

Sorting of non-ferrous metal scrap

The sorting produces concentrates of different types of metal, which display a quality suitable for immediate use in reprocessing smelting plants. This refinement level thus makes an important contribution to returning metals to the raw material cycle. After sorting the sorted metal scrap will be ready to smelt for rotary furnace.

Charging of sorted scrap into Rotary furnace

The sorted charge will be put into an industrial rotary furnace with the help of overhead crane buckets. The rotary furnace having a capacity of 8 tons per heat and 8000 tons per year. Ittefaq Metal Recycling laboratory will be equipped with an Italian-brand metal analyzer, the “GNR,” to ensure quality requirements. Natural gas will be used as fuel.

Manufacturing

The metal yield for each lot will be evaluated as per the procedure described in standard. After melting, the molten metal will be poured into ingot molds already fitted on movable conveyor and solidified.

2.10.3 Technology

Ittefaq Metal Recycling will use cutting-edge metal recycling technologies to make its metal management system as efficient, secure, and environmentally beneficial as accomplishable. Ittefaq Metal Recycling will have a facility where our high-quality goods will be processed. With its innovative and completely automated mechanism, our rotary furnace plant, with a capacity of 8 tons per heat and 8000 tons per year, will be state of the art. Ittefaq Metal Recycling laboratory will be equipped with an Italian-brand metal analyzer, the “GNR,” to ensure quality requirements.

Ittefaq Metal Recycling will make full use of its non-ferrous metal smelting process facilities, by undertaking recycling activities that process scrap as secondary materials containing nonferrous and precious metals. The Ittefaq Metal Recycling will in place a network that enables the recycling of essentially all valuable metals, including lead, Aluminum, Copper and brass, into ingots. In addition, we will have the technological capability, such as the ability to stabilize toxic substances, to further enhance our recycling business. We will make full use of our network and recycling technologies with the aim of realizing a recycling-oriented society, by operating an integrated system, spanning the assessment, collection and processing of recycled materials.

2.10.4 Installed and Operational Capacities

Ittefaq Metal Recycling will have a modern facility where our high-quality goods will be processed. With its innovative and completely automated mechanism, we will install rotary furnace plant, with a capacity of 8 tons per heat and 8000 tons per year. Ittefaq Metal Recycling laboratory will be equipped with an Italian-brand metal analyzer, the “GNR,” to ensure quality requirements.

2.10.5 Machinery & Equipment

Following nonferrous metal recycling machinery and equipment are to be purchased.

Description	Quantity (Nos)
Rotary Furnace of Capacity 8 MT per Heat (Complete Plant)	1
Conveyor	1
Overhead Crane	1
Metal Analyzer	1
Smoke Process Plant	1
Generator	1

Table 8: Machinery & Equipment

10.2.6 Land Requirement

The proposed project will be established on proponent's owned land with purpose built recycling unit constructed on Environmentally Controlled Housing (ECH) system. The Project Site is acquired at Sher Rabbani, Industrial Estate, 14 Km Near Unifoam Factory, Multan Road, Lahore-Pakistan. The project site is located near N5 and Lahore-Islamabad Motorway (M-2). The total land area of the project site is 04 Kanal 03 Marla taken by the project owner for the establishment of M/S Ittefaq Metal Recycling at Sher Rabbani, Industrial Estate, 14 Km Near Unifoam Factory, Multan Road, Lahore-Pakistan. The subject business is suitable at this location as this location ensures easy availability of labor, water and other related services.

2.10.7 Raw material and products, by products

Nonferrous metal scrap electric motors collected from various sources, such as industrial machinery, appliances, automobiles, and electronic devices, compressor scrap, car scrap engine, shredded aluminum scrap, also known as "Zorba", aluminum scrap, including ACSR scrap, aluminum bottle caps scrap, shattered aluminum with iron attachment scrap, Al/Cu insulated cable scrap etc. then processed to recover valuable metals, including copper, aluminum, Brass etc.

Secondary Aluminum Ingots will be the final product and will be exported Worldwide. Aluminum ingots are non-ferrous metal ingots will be made by melting down aluminum and pouring it into molds. These molds are available in a number of sizes and forms, and the ingots produced by them have a variety of appearances. Waste rock, waste “muds” will be the byproducts of this project.

2.11 Restoration and Rehabilitation Plans

All possible precautions will be taken to prevent an untoward incident in terms of life and property losses. On completion of the project, solid waste will be removed from the site in order to maintain aesthetics of the area. All measures will be undertaken for ensuring occupational safety, security and clean environment during the working hours. Vegetation and landscaping will be done by the proponent after the completion of project.

CHAPTER No: 03

3 Description of Environment

This section describes the baseline conditions, which cover the existing Physical, ecological and socio-economic environment of the project as well as study area. Data was collected by reviewing secondary data and field survey.

A data collection survey that included investigations of geology, meteorology, hydrology, ambient air quality, water quality, soil characteristics, noise levels, flora and fauna, land use pattern, and socioeconomic conditions was undertaken in the vicinity of the site. Primary data was collected to establish baseline conditions for the soil, water (surface and ground) quality, flora and fauna, and noise. Secondary data was collected for land, ecology, climate, and socioeconomic factors.

Study Parameters

The social and environmental issues associated with this project during pre-construction phase, construction phase, operation and maintenance phase include:

- Permanent acquisition of 4 Acre (8 Kanal) land for the establishment of M/S Ittefaq Metal Recycling at Sher Rabbani, Industrial Estate, 14 Km Near Unifoam Factory, Multan Road, Lahore-Pakistan.
- Proper site selection.
- Appropriately locating temporary construction camps, concrete mixers, and the environmental impact of operating these facilities.
- Transportation of material and equipment, erection of Machinery and structure, construction of foundation material for structure etc.
- Installation of the equipment (Such as Rotary Furnace of Capacity 8 MT per Heat Complete Plant, Conveyor, overhead crane, Metal Analyzer, Smoke Process Plant, transformer and Generator etc.).
- Regulating the procurement of borrow material, soil erosion during construction as well as in operation stage.
- Enhancing and maintaining tree plantation.
- Minimizing the impact on cultural sites or structures and community-owned assets during construction and operation.
- Ensuring traffic safety during construction and operation.
- Ensuring adequate methods of liquid and solid waste disposal.

3.1 Physical Environment

M/S Ittefaq Metal Recycling will provide all physical resources like equipment, materials, supplies, facilities, and infrastructure that will be utilized in this nonferrous metal recycling unit like latest machinery/equipment that will be employed to ensure quality requirements. Installation of the equipment (Such as Rotary Furnace of Capacity 8 MT per Heat Complete Plant, Conveyor, overhead crane, Metal Analyzer, Smoke Process Plant, transformer and Generator etc.) will also be a part of this project.

3.1.1 Topography

The topography of the project area is flat. The General height of the area is approximately 217 meters above the Mean Sea Level (MSL). The city Lahore is located in central east of the country in the upper Indus plain on the Ravi river. Lahore is Lying between 31°15'—31°45' N and 74°01'—74°39' E, Lahore is bounded on the north and west by the Sheikhpura District, on the east by Wagha, and on the south by Kasur District. The Ravi River flows on the northern side of Lahore. Lahore city covers a total land area of 1014 km² and is still growing.

3.1.2 Soil

The city Lahore is located in central east of the country in the upper Indus plain on the Ravi river. The closest cities are Kahn, Sharqpur, Muridke and Raiwind. The depth to sub soil water in the city is about 1300 ft. and underground water is safe for human consumption.

The soil in the Project Area is cohesion less and is of sandy type. Various soil layers below the ground level includes: silty clayey clay etc. The soil is different in character and generally inclined to be dry. However, it is rich in potential plant nutrients.

3.1.3 Climate and Meteorology

The area is mainly dry and sunny. The summers are long, sweltering, humid, and clear that lasts approximately 4.1 months. The hottest month is June, where average highs routinely exceed 40 °C (104.0 °F). The wettest month is July, with heavy rainfalls and evening thunderstorms with the possibility of cloudbursts.

January, the coldest month of the year, is generally a mild month. The average temperature is of 12.0 °C (54 °F), with a minimum of 5.9 °C (42.6 °F) and a maximum of 18.2 °C (64.7 °F). On the coldest nights of the month, the temperature usually drops to around 1.5 °C (35 °F).

3.1.4 Ambient Air Quality and Noise

The Ambient Air Quality measurements along the project road and in the vicinity found remain within the limits of the revised National Ambient Air Quality Standards. Overall, the impact of generated noise on the environment during construction period is insignificant, reversible and localized in nature.

3.1.5 Ground Water

The ground water resources are available in abundance in the project area. Ground Water Table (GWT) exist at a depth of about 1300 ft. below natural ground level (NGL). To meet the agricultural and drinking requirement boring points and hand pumps are quite obvious in and around project site.

The underground water will be used as a source of water at recycling unit. Sample was taken from the bore hole near the project area to test its parameters, underground water testing lab reports are attached as Annexure C.

3.2 Ecological Environment

The climate of Lahore is extreme continental in nature and experienced three well-marked seasons, viz, winter, summer, and rainy monsoon. The monsoon rainfall is quite supportive of vegetation which is further augmented by canals and rivers flowing in Lahore. It is hot in summer and usually cold in winter.

The project site is not located in or near a sensitive ecosystem. Review of the secondary literature and site visits confirmed the absence of unique or ecologically significant flora and fauna.

3.5.1 Flora and Fauna

The main crops grown in the district are wheat, sugarcane, rice, maize, Moong, Mash, Masoor, are also cultivated here.

Lush green farms of fruits such as mangoes, citrus, guavas, and pomegranates are prominent in the outskirts. In addition, Dates, Jaman, pears, falsa are cultivated in small quantities.

Different birds were observed at the project site during the site visit including sparrow, crow, pigeon and dove etc.

3.3 Socioeconomic Environment

Socioeconomic environment of district Lahore has been studied through secondary sources and a brief introduction has been given below:

3.3.1 Demographic Characteristics of the Project Area

Lahore is the second largest city in Pakistan and 26th largest in the world, with a population of over 13 million. Gender-wise, 52.35% of the population are male, 47.64% are female, and 0.01% are transgender

3.3.2 Religion

It is estimated that the city of Lahore, Pakistan, has a Muslim majority with 94.7% and Christian minority constitute 5.1% of the population and rest Sikhs and Hindus constitute the remaining 0.2%. There is also a small but longstanding Zoroastrian community.

3.3.3 Education

More people are literate and educated in the district as compared to their neighboring regions. People from nearby towns come here for education. The education system is divided into five levels: primary (grades one through five); middle (grades six through eight); high (grades nine and ten, leading to the Secondary School Certificate); intermediate (grades eleven and twelve, leading to a Higher Secondary School Certificate); and university programs leading to graduate

The literacy rate of Lahore is 65%. Around 8.8% children in Lahore between the ages of 5-9 are out-school. This number rises drastically as children grow older – almost 26% of children between the ages of 14 and 16 are out of school.

There are several reputed educational institutions in the region, such as

Some famous schools are:

- Beacon house School System. Kindergarten, Preparatory, Secondary, Higher Secondary, O levels, A levels.
- Future World Schools.
- Lahore Grammar School.
- Aitchison College.
- Divisional Public School.
- Bloomfield Hall School.
- The Crescent School.
- Convent of Jesus and Mary.

Some famous Collages are:

- Punjab Group of Colleges.
- Queen Marry College.
- Kinnaird College.
- Forman Christian College.
- Aitchison College.
- Lahore College for Women's University.
- Defense Degree College.
- Unique College. Unique College has many branches.

Some famous Universities are:

- University of Health Sciences.
- University of Engineering and Technology.
- Government College University.
- King Edward Medical University.
- University of Management and Technology.
- National University of Computer and Emerging Sciences.
- Lahore School of Economics.
- Kinnaird College university.

3.3.4 Health Facilities

Medical and health facilities are available in Lahore. There are also other hospitals of voluntary organizations which provide health cover to the public.

Other health facilities are Jinnah Hospital, Mayo hospitals etc. Besides, a number of private medical practitioners, Hakims and homeopathic doctors are also practicing in the city. Some are mentioned as under:

- Hameed Latif Hospital.
- Farooq Hospital
- Aadil Hospital.
- Akram Medical Complex.
- Doctors Hospital. Lahore.

3.4 Quality of Life Values

Moreover, students from all over Pakistan prefer to get an education from Lahore, as the schools, colleges, and universities in Lahore are fantastic. Also, Lahore has fine restaurants, huge malls, and other places that are the best for entertainment. In short, living in Lahore is like living your life to the fullest.

Quality of Life in Lahore, Pakistan; Climate Index, 67.56, High; Cost of Living Index, 19.43, Very Low; Property Price to Income Ratio, 12.74, High; Traffic

Quality of Life Index: 104.46
Purchasing Power Index: 24.38
Cost of Living Index: 19.43
Safety Index: 63.19

3.4.1 Civic Amenities

Civic amenities like potable drinking water and rest area are available near the project site.

3.4.2 Games

Cricket, Hokey, Football, Horse Riding, Polo, Wrestling Swimming are major sports of Lahore.

3.4.3 Welfare of employees

Management of project is mindful of the fact that the satisfied employees will deliver better output.

3.4.4 Historical Buildings near the Project Site.

No any historical buildings near the project site.

3.4.5 Aesthetics Values

Like the general trend among the citizens of area, most of the people have low awareness about environment. Even then, some people take cleanliness and neatness of the environment lightly. Some people throw municipal solid wastes (MSWs) on the streets. Sense of personal

responsibility to keep the environment clean as good citizens is even now lacking among a few people.

Soil erosion plus damage to water quality/land values, losses in environmental aesthetics will be monitored and mitigation measures will be implemented properly during construction phase.

3.4.6 Infrastructure

Best resources including human resources and specialized skills, organizational infrastructure, technology and financial resources will be provided. The infrastructure will include, nonferrous metal recycling machinery, Buildings, workspace, associated utilities, Machinery and Equipment, Furniture & Fixture, Office Equipment, Office Vehicles, Pre-operating Cost, Raw Material Inventory, Rotary Furnace of Capacity 8 MT per Heat, Conveyor, overhead Crane, Metal Analyzer, Smoke Process Plant, Generator and transformer, both hardware and software, supporting services such as transport and communication.

3.4.7 Land and plan

The land acquired for the project site is totally private land and proponent's own land which has been confirmed by the BOR, under sub-Section 1 of Section 17 of the Land Acquisition Act, 1894, as applicable to the afore said land no private land acquisition and assets, displacement; and loss of income is caused by the construction of the unit, therefore no RP is required. No human settlements exist on the site. The 04 Kanal 03 Marla land acquired for the project is located at Sher Rabbani, Industrial Estate, 14 Km Near Unifoam Factory, Multan Road, Lahore-Pakistan for the establishment of the proposed nonferrous metal recycling plant (M/S Ittefaq Metal Recycling) for the production of Secondary Aluminum Ingots.

Non-Ferrous Metal Recycling creates additional employment opportunities. Non-Ferrous Metal Recycling provides additional materials for reuse in manufacturing and to create new jobs, reduce poverty, encourage development in Punjab and resultantly increase the GDP of the country. Location & Site Layout plan of the project is attached as Annexure-D with this report.

3.4.8 Power sources and Transmission

Provision of Power meter and Wapda Connection charges and Generators are included in the cost estimate.

3.4.9 Archeological and Religious

There are no any archaeological, Religious or cultural sites within the survey location.

3.4.10 Cultural Values

There are no any cultural sites within the survey location.

3.4.11 - Lab reports of environmental analyses

Test parameters, lab reports are attached as Annexure C.

3.4.12 Suitability of the site

This suitability of site selection is based upon the site suitability analysis of setting up a nonferrous metal recycling plant where Ittefaq Metals Recycling comprehends the value of natural resources and the procedures necessary to access them. As Recycling metal has a big effect on the environment. Metal recycling has multiple benefits, one of which is that it helps us protect natural resources. Ittefaq Metal recycling will deal with varieties of non-ferrous metal scrap, i.e. Aluminum, Copper, Brass and lead.

There are no any environmentally sensitive, incompatible to surroundings and unsuitable area near the site so this site found suitable for this project.

CHAPTER No: 04

4 POTENTIAL ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

The following chapter describes the overall possible impacts of project on the physical, biological and socioeconomic environment because of construction and operation phases and mitigation measures to minimize the significance of the possible impacts up to an acceptable level. The anticipated impacts related to location, design, construction and operation of the proposed project have been assessed and mitigation measures have been suggested in this report.

Impacts are assessed by analyzing their magnitude and sensitivity. The sensitivity and magnitude of the impact are described with reference to legal requirements, accepted scientific standards or accepted impact assessment practice, and/or social acceptability; where possible.

But where no known published 'standard' criteria exist for determining the magnitude of effects, established professional criteria and best practice techniques are used.

4.1 Methodologies for impact identifications

The methodology adopted for impact evaluation includes the Modified Leopold Matrix.

4.1.1 Leopold Matrix

The analysis is performed with the Leopold Matrix (LM). This matrix has:

1. On the horizontal axis, the actions which cause environmental impact, and
2. On the vertical axis, the existing environmental conditions which may be affected by those actions.

This provides a format for comprehensive review of the interactions between proposed actions and environmental factors.

The most important blocks marked are evaluated individually, and a number between 1 and 10 is placed in the upper left-hand corner to indicate the relative magnitude of the impact (1 represents the least magnitude, and 10 the greatest). Likewise, a number between 1 and 10 is placed in the lower right-hand corner to indicate the relative importance of the impact (again, 1 represents the least magnitude and 10 the greatest).

Table 09 : Scale Table of Importance & Magnitude

Sr. No.	Type of Impact	Scale of Magnitude (0 – 10)	Scale of Importance (0 – 10)
1	No Impact	0	0
2	Low Impact	1 — 4	1 — 4
3	Medium Impact	5 — 6	5 — 6
4	High Impact	7 — 10	7 — 10

4.2 Impact Analysis and Prediction

For the evaluation of this project, each action checked was evaluated in terms of magnitude of effect on environment characteristics and conditions [on the vertical axis]. From upper right to lower left across each block where significant interaction is expected slash \ was placed diagonally. The most important blocks marked are evaluated individually, and a number between 0 to 10 is placed in the upper left-hand corner to indicate the relative magnitude of the impact 1 is the best magnitude, and 10 the greatest magnitude. In the same way, a number between 0 and 10 in the lower right-hand corner to indicate the relative importance of the impact again, 0 is the magnitude, and 10 the greatest.

The next step is to evaluate the numbers which have been in the slashed boxes. The high or low numbers on any one box indicates the degree of impact of the appropriate action on the given characteristic of the environment. The assignment of magnitude and importance numbers is based, to the extent possible, on factual data rather than on the evaluator's preference.

For the rating design regarding the probable impacts requires the evaluator to quantify his/her judgment. The rating scheme\ scheme allows the reviewers to thoroughly follow the evaluator's line of reasoning, to aid in identifying points of agreement and disagreement. In fact, matrix is the abstract for the text of the environmental impact assessment.

Table 10: Leopold Matrix

Magnitude Importance			Construction Phase											Total Score of Impact	Average Score of Impact
			Actions												
			Transportation of raw material	Construction Activities	Operation of generators	Water consumption	Wastewater generation	Storage of raw materials	Social activities	Public welfare	Economic activities	Employment	Infrastructure improvement		
PHYSICAL	Soil	Soil Quality	2 1	3 2	0 0	1 1	5 2	4 4	1 1	0 1	1 1	1 3	4 6	22 22	2 2
		Erosion	2 1	6 6	0 0	0 0	2 2	1 1	2 1	0 0	1 1	1 1	3 4	18 17	1.6 1.5
		Geomorphology	0 0	5 5	0 0	4 2	5 3	2 1	0 0	0 0	1 1	2 1	4 6	23 19	2.09 1.7
	Water	Surface Water	0 0	0 0	0 0	6 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	6 0	0.5 0
		Subsurface Water	1 2	1 1	0 0	7 8	5 7	1 1	0 0	0 0	1 1	0 0	2 2	18 22	1.6 2
	Air	Air Quality	2 1	6 6	0 0	0 0	2 2	1 1	2 1	0 0	1 1	1 1	3 4	18 17	1.6 1.5
		Odors	1 1	1 1	3 3	0 0	5 7	4 6	1 1	0 1	0 1	1 1	1 1	17 23	1.5 2.0
		Noise	5 6	9 10	7 8	0 0	5 4	2 2	5 0	0 1	5 6	4 6	4 6	46 55	4.1 5

BIOLOGICAL	Fauna & Flora	Crops	2 2	5 6	3 2	0 0	4 6	2 2	2 3	4 3	5 7	3 3	3 3	33 37	3 3.3
		Birds	2 2	7 7	5 5	2 1	4 4	1 1	5 4	0 0	5 5	3 4	4 4	34 37	3.4 3.3
		Mammals	5 4	6 7	2 2	2 1	4 3	2 1	3 3	0 0	4 3	3 4	3 3	34 31	3.3 2.8
SOCIO-ECONOMIC	Social	Industrial	5 6	7 7	5 5	4 6	6 7	4 5	6 6	5 6	8 8	9 9	7 7	66 72	6 6.5
		Recreational Use	2 3	3 4	2 3	3 3	3 3	1 1	3 4	4 5	4 5	2 1	4 3	31 35	2.8 3.1
		Historical / Cultural	2 2	7 7	2 2	2 1	4 4	1 1	5 4	4 4	5 5	3 4	4 4	39 38	3.5 3.4

Over all the impact of project is positive in term of employment and infrastructure improvement. Mostly the average values are falling in 0.2-5 range which means the overall impact will be low to moderate. Due to the construction activities dust and gases will generate which may affect ambient air quality. To counter with the negative impacts Environmental Management plan is formulated which will be ensured by the project proponent. Beside this Environmental monitoring plan is also formulated for Environmental monitoring of various parameters which will be also implemented by the proponent.

Operational Phase															
Magnitude Importance			Actions										Total Score of Impact	Average Score of Impact	
			Transportation of raw material	Production Activities	Operation of generators	Water consumption	Wastewater generation	Storage of raw materials	Social activities	Public welfare	Economic activities	Employment			Infrastructure improvement
PHYSICAL	Soil	Soil Quality	2 1	3 2	0 0	1 1	5 2	4 4	1 1	0 1	1 1	1 3	4 6	22 22	2 2
		Erosion	2 1	6 6	0 0	0 0	2 2	1 1	2 1	0 0	1 1	1 1	3 4	18 17	1.6 1.5
		Geomorphology	0 0	5 5	0 0	4 2	5 3	2 1	0 0	0 0	1 1	2 1	4 6	23 19	2.09 1.7
	Water	Surface Water	0 0	0 0	0 0	6 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	6 0	0.5 0
		Subsurface Water	1 2	1 1	0 0	7 8	5 7	1 1	0 0	0 0	1 1	0 0	2 2	18 22	1.6 2
	Air	Air Quality	2 1	6 6	0 0	0 0	2 2	1 1	2 1	0 0	1 1	1 1	3 4	18 17	1.6 1.5

		Odors	1 1	1 1	3 3	0 0	5 7	4 6	1 1	0 1	0 1	1 1	1 1	17 23	1.5 2.0
		Noise	5 6	9 10	7 8	0 0	5 4	2 2	5 5	0 1	5 6	4 6	4 6	46 55	4.1 5
BIOLOGICAL	Fauna & Flora	Crops	2 2	5 6	3 2	0 0	4 6	2 2	2 3	4 3	5 7	3 3	3 3	33 37	3 3.3
		Birds	2 2	7 7	5 5	2 1	4 4	1 1	5 4	0 0	5 5	3 4	4 4	34 37	3.4 3.3
		Mammals	5 4	6 7	2 2	2 1	4 3	2 1	3 3	0 0	4 3	3 4	3 3	34 31	3.3 2.8
SOCIO- ECONOMIC	Social	Industrial	5 6	7 7	5 5	4 6	6 7	4 5	6 6	5 6	8 8	9 9	7 7	66 72	6 6.5
		Recreational Use	2 3	3 4	2 3	3 3	3 3	1 1	3 4	4 5	4 5	2 1	4 3	31 35	2.8 3.1
		Historical / Cultural	2 2	7 7	2 2	2 1	4 4	1 1	5 4	4 4	5 5	3 4	4 4	39 38	3.5 3.4

4.2.1 Consultation/Case Studies

To study the impacts of the project on physical and biological environment, site visits were conducted by the environmental practitioners and experts and possible physical and biological impacts which may arise due to the subject project were identified through consultations and case studies and their mitigation measures were suggested accordingly.

4.2.2 Meetings

For the identification of the social impacts of the project, meetings and group discussions were held with the local people, stakeholders, nearby residents and passerby because social acceptability of the project and the area is a key to success. Consultation with the stakeholders is a tool for managing two-way communication between the project proponent and the affected public. Its goal is to improve decision making and built understanding by actively involving individuals, groups and organizations, which have stake in the project. This involvement increases project's long term viability and enhances its benefits to locally affected people and other stakeholders.

To identify the different types of stakeholders and ascertain their perceptions about the project, an initial environmental examination was conducted. Informal group discussions were also held as an additional tool for obtaining feedback from the stakeholders that are being discussed in the following.

The EIA team carried out public consultations at various locations around the Project Site. The stakeholder's consultation during this phase of the work targeted the project area, administrative and private offices, Govt. offices, shops, etc. near the Project area:

- Selection of the stakeholders for consultation, reconnaissance of the proposed project site and initial discussions with the neighboring , shopkeepers, drivers etc.
- Environmental consultants and social specialists and documenting the opinions of the stakeholders expressed during the meetings etc.

4.3 Characteristics of Impacts (nature, magnitude, extent and location, timing, duration, reversibility, risk)

4.3.1 Impact Assessment Criteria

The impacts were assessed in the light of criteria given as under: -

- Magnitude or degree of impact
- Time and duration of impact
- Likelihood of impact occurrence
- Sensitivity of impact
- Risk related to impact

Table 11: Impact Assessment criteria

Rating of Consequence of Effect on Environment	Rating of Frequency of Occurrence				
	A. Very low: Not heard of but could occur	B. Low: Has occurred in other industry	C. Medium Has occurred in oil and gas industry	D. High: Occurs several times a year in oil and gas industry	E. Very high: Occurs several times a year in PDO
Slight effect: Local environmental damage. Within the fence and within systems. Negligible financial consequences	LOW RISK				
Minor effect: Contamination. Damage sufficiently large to attack the environment. Single exceedence of statutory or prescribed criterion. Single complaint. No permanent effect on the environment.		MEDIUM RISK			
Localized effect: Limited loss of discharges of known toxicity. Repeated exceedence of statutory or prescribed limit. Affecting neighborhood.					
Major effect: Severe environmental damage. The company is required to take extensive measures to restore the contaminated environment to its original state. Extended exceedence of statutory limits		HIGH RISK			
Massive effect: Persistent severe environmental damage or severe nuisance or nature conservancy extending over a large area. In terms of commercial or recreational use, a major economic loss for the company. Constant, high exceedence of statutory or prescribed limits				EXTREME RISK	

4.4 Analysis of Impacts and recommended mitigations

4.5 Environmental Impacts due to project location

If the project proponent maintains HSE conditions and comply with the PEQS limits than, there will not be any significant impacts of the project on the environment because subject project site is present within purchased land of M/S Ittefaq Metal Recycling existed at Sher Rabbani, Industrial Estate, 14 Km Near Unifoam Factory, Multan Road, Lahore-Pakistan.

If the mitigation measures are effectively implemented, the residual impact of the Subject project activities on the area's geophysical environment is expected to be insignificant.

Impact significance:	Low to moderate
Nature of impact:	Direct
Duration:	Long-term
Timing:	Construction & Operation phase
Reversibility:	NA
Likelihood:	Low
Consequences:	Mild or may be positive

Mitigation Measures

- Project site will have good and efficient road infrastructure
- Location can be considered as the positive impacts due to enhanced infrastructure.
- The project will also have positive socioeconomic impacts because of provision of jobs to the local residents of the area.
- No human settlement within the radius of the study area
- There would be no issue of congestion of traffic due to presence of good road network in the area.
- Provision of embankments, designed by considering the Geotechnical investigation studies.

4.6 Environmental Impacts due to project design

Area for parking, Septic tank and solid waste management will be present in design of building. Firefighting plan, health & safety plan, tree plantation plan, emergency response plan will be the part of unit.

Following are the major Environmental impacts due to the development related to the design:

- Low utilization of available space
- Soil structure and soil bearing capacity
- Improper road infrastructure design
- Firefighting system
- Electricity hazards
- Low social acceptability & functionality of design

Impact significance:	moderate to high
Nature of impact:	direct
Duration:	Long-term
Timing:	Designing Phase
Reversibility:	NA
Likelihood:	moderate to high
Consequences:	moderate to high

4.6.1 Mitigation measures and recommendations

Following are the mitigation measures and recommendations to minimize the anticipated impacts:

- Industrial unit will incorporate all HSE measures regarding the design of project.
- Structure stability of the building should be ensured.
- Emergency exist points should be marked within the project building and in overall plan.
- Firefighting system should be designed for the emergency situations.
- Electricity system should be design safe and sound.
- Electricity wires should be covered by thick plastic/electricity resistant covers.
- Design should be professional which accommodate the maximum space and has high social acceptability & functionality.

4.7 Environmental Impacts due to construction phase

4.7.1 Impact on Physical Environment

4.7.1.1 Topography

In the proposed area, there are herbs and shrubs and excavation and leveling will be involved in this construction.

4.7.1.1.1 Impact:

- Change in topography due to excavation
- Land filling of the area
- Construction of roads

Impact significance:	Low
Nature of impact:	Direct

Duration:	Short-term
Timing:	Constructional phase
Reversibility:	NA
Likelihood:	moderate
Consequences:	Very Low

4.7.1.1.2 Mitigation:

- Cuttings of trees will be avoided
- Use of existing paved tracks as many as possible.
- Working should be in such a way that minimum excavation is involved

4.7.1.2 Air Quality

Air quality will be affected by fugitive dust emissions from construction machinery; dust from the unpaved surface and construction vehicles. The critical sources of dust pollution during the construction phase will be

- Unpaved road surface
- Transportation of materials and other construction activities that create dust emissions

Impact significance:	Low
Nature of impact:	Direct
Duration:	Short-term
Timing:	Constructional phase
Reversibility:	NA
Likelihood:	moderate
Consequences:	Very Low

4.7.1.2.1 Impacts

Air quality deterioration, particulate matter/dust emissions due to construction activities; stand by generator (if any) equipment's and vehicle.

4.7.1.2.2 Mitigations

- Sprinkling of water on track will reduce dust pollution
- Provision of dust masks for workers.
- Air quality monitoring is recommended on regular base
- Proper paved road infrastructure is recommended
- All vehicles, machinery, equipment and generators used during construction activities should be kept in good working condition and be properly tuned and maintained in order to minimize the exhaust emissions
- Blowing of dust and particulate matter from stockpiled loose materials (e.g. sand, soil) should be avoided either by sheeting them with tarpaulin or plastic sheets or by sprinkling them with light shower of water
- Open burning of solid waste from the Contractor's should be strictly banned;

4.7.1.3 Noise

Noise is a by-product of human activity, and area of exposure increases as function of mobility and construction activities. Sources of noise during construction are heavy machinery such as bulldozers, excavators, stabilizers and other equipment. Noise generated by construction machinery is likely to affect sensitive receptors located within 50 meter of the proposed Project.

4.7.1.3.1 Impacts

- Persistently higher noise levels can produce psychological effects of distraction of attention, irritation and short temperedness in the exposed persons
- Noisy settings and higher background levels can cause temporary threshold shift and the consequent habit of speaking loud, which may cause damage to vocal cords in the persons exposed
- Noise produced from moving construction vehicles and blowing of pressure horns, at times, could be intolerable particularly during quiet hours of night.

Impact significance:	Low
Nature of impact:	Direct
Duration:	Short-term
Timing:	Constructional phase
Reversibility:	NA
Likelihood:	moderate
Consequences:	Low

4.7.1.3.2 Mitigations

- Selection of up-to-date and well-maintained plant or equipment with reduced noise levels ensured by suitable in-built damping techniques or appropriate muffling devices
- Confining excessively noisy work to normal working hours in the day, as far as possible
- Providing the construction workers with suitable hearing protection like ear cap, or earmuffs and training them in their use
- Preferably, restricting construction vehicles movement during night time
- Vehicles and equipment used should be fitted, as applicable, with silencers and properly maintained
- Use of low noise machinery, or machinery with noise shielding and absorption
- Contractors should comply with submitted work schedule, keeping noisy operations away from sensitive points; implement regular maintenance and repairs; and employ strict implementation of operation procedures

4.7.1.4 Water Resources

There will be no impact on surface water quality during the construction of the project area. Persistent and prolonged withdrawal of groundwater higher than the safe yield limits of the aquifer can initiate early depletion of aquifer. This situation can result in reduced water supplies for other users who share the same groundwater resource. Abstraction of the groundwater over and above the safe yield limit can produce serious hydrological and environmental consequences.

4.7.1.4.1 Impacts

- Early depletion of the aquifer resources
- Persistent lowering of the water table
- Reduced availability or non-availability of the groundwater to the neighboring communities sharing the same aquifer

These impacts are temporary and minor negative in nature

Impact significance:	Low
Nature of impact:	Direct
Duration:	Short-term
Timing:	Constructional phase
Reversibility:	NA
Likelihood:	moderate
Consequences:	Low

4.7.1.4.2 Mitigations

- Water required for construction must obtain in such a way that the water availability and supply to nearby communities remain unaffected.
- Regular water quality monitoring according to determined sampling schedule.
- Prohibit washing of machinery and vehicles in surface waters, provide sealed washing basins and collect wastewater in sedimentation/retention pond.
- Continuous withdrawal and over pumping of groundwater should be avoided. Instead, intermittent pumping be carried out to conserve the groundwater resources.

4.7.1.5 Soil

The project area is open land with no paved area. Soil erosion and contamination may occur on site due to the following likely impacts.

4.7.1.5.1 Impacts

- Excavation of earth/cutting operations
- Land leveling activities
- If the excavated area will be left unfilled for long, which may lead to rainfall induced soil erosion.
- The unspent materials and debris produced from consumed up materials, if left as such and allowed to mix with soil underneath, can degrade the quality of receiving soils and may render them unfit for plantation later on.
- Leakages of oils, lubricants, chemicals, and other similar substances from their storage sites and from engines of the generators, machines, equipment and vehicles can spoil the receiving soils and may undermine ability of the spoiled soils to support growth of vegetation and plants.
- Washing of the gadgets, machinery and equipment without proper drainage of the washout water can adversely affect the soil quality. This impact is, however, temporary.

Impact significance:	Low to Moderate
Nature of impact:	Direct
Duration:	Short-term
Timing:	Constructional phase
Reversibility:	NA
Likelihood:	moderate
Consequences:	Low

4.7.1.5.2 Mitigations

- Non-bituminous wastes from construction activities will be dumped in designated sites, in line with the legal prescriptions for dumpsites, and covered
- As applicable and needed, plantation of grasses and shrubs will be done at appropriate place where required
- Unnecessary excavations should be avoided

- Oils, lubricants, chemicals, and other listed hazardous materials should be stored safely at their designated spots, enclosures or store rooms, which should be safe from rainfall and away from any potential source of fire.
- All machineries and materials should be stored at the designated areas and compounds.
- All the unspent and left over materials should be completely removed offsite upon completion of construction.

4.7.1.6 Wastewater

4.7.1.6.1 Impacts

Wastewater generation due to construction activities

4.7.1.6.2 Mitigations

- Wastewater generated during construction and domestic activities will be treated in septic tank, from where it will be routed to local drain present near the project.
- Waste segregation measures will be employed to minimize entry of solid waste into the wastewater stream.

4.8 Solid Waste

Due to construction activities, waste will be generated at construction and contractors camp site. The construction waste will include wastewater, oil spillage from machinery, domestic waste and solid waste etc. This will result in unhygienic conditions, health risk to work force and public at the camp site.

4.8.1 Impact

- Insecure and unhygienic disposal of the solid wastes generated at the worksite, particularly garbage and trash may cause degradation of soil and land
- Insecurely disposed of heaps of wastes containing kitchen garbage and food waste can serve as breeding grounds for the disease spreading vectors and rodents
- Throwing away of solid wastes into water channels and the wastewater network can result into choking of the latter.

Impact significance:	Low
Nature of impact:	Direct
Duration:	Short-term
Timing:	Constructional phase
Reversibility:	NA
Likelihood:	moderate
Consequences:	Moderate

4.8.1.1 Mitigations

- An efficient and responsive solid waste management system should be devised for the entire duration of the construction phase. Such a system should provide for separate collection of different categories of constructional wastes. Training of working force in the storage and handling of materials and chemicals that can potentially cause soil contamination.
- Solid waste generated during construction and camp sites will be safely disposed in demarcated waste disposal sites or handed over to the contractor.

4.8.2 Health and Safety

Health risks and work safety problems may result at the workplace if the working conditions provide unsafe and/or unfavorable working environment and due to storage, handling and transport of hazardous construction material. Workers should be provided with safe and healthy working environment taking into account risks inherent to the particular sector and specific classes of hazards in project area. As a preventive measure, regarding risk of spreading corona virus contingency plan and emergency preparedness and response procedure proposed. Mitigation measures will include:

Impact significance:	Low to Moderate
Nature of impact:	Direct
Duration:	Short-term
Timing:	Constructional phase
Reversibility:	NA
Likelihood:	moderate
Consequences:	Moderate

4.8.2.1 Mitigation:

- Providing basic medical training to specified work staff and basic medical service and supplies to workers.
- Layout plan for site, indicating safety measures taken by the contractor, e.g. firefighting equipment, safe storage of hazardous material, first aid, security, fencing, and contingency measures in case of accidents
- Work safety measures and good workmanship practices are to be followed by the contractor to ensure no health risks for laborers
- Protection devices (ear muffs) should be provided to the workers doing job in the vicinity of high noise generating machines.
- Provision of adequate sanitation, washing, cooking and dormitory facilities including light up to satisfaction.
- Provision of protective clothing for laborers handling hazardous materials, e.g. helmet, adequate footwear for bituminous pavement works, protective goggles, gloves etc.
- Ensure strict use of wearing these protective clothing during work activities
- Instruct foremen to strictly enforce the keeping out of non-working persons, particularly children, off work sites

4.8.3 Impact on Biological Environment

Different birds were observed at the project site during the site visit including sparrow, crow, pigeon and dove etc. Other than that, no fauna was observed at the site during the site visit.

4.8.4 Impact on Socio-economic Environment

4.8.4.1 Economic Activity

Due to the construction of the proposed Project, economic activity will be generated in the project area as the laborers and semi-skilled staff will have an opportunity to work for the construction of the proposed project. This will help in developing their skills and capacities. This is a moderate positive impact.

4.8.4.2 Lifestyle and Culture

There are chances of arising of issues related to cultural differences/conflict between the Contractor's workforce and the local inhabitants, conflicts arising due to the mix of local and migratory job seekers as the use of local resources and products will be increased. In this situation, local residents may resist contractor's workforce attitudes, cultural clashes particularly when local/international contractors are engaged, social disturbance and dissatisfaction with employing outsiders may arise. This impact is temporary and minor negative in nature.

4.9 Impact during operational phase

The positive and negative impacts of subject project, during its operation are discussed below:

4.9.1 Impact on Physical Environment

4.9.2 Solid waste/Sludge Management

In the operation of proposed project proper solid waste management system will be adopted for the prompt, timely and efficient disposal of solid waste & sludge for the reduction of its impacts. Impacts due to solid waste & sludge may be temporary and minor in nature.

Nature of impact:	Direct
Duration:	Short term
Timing:	operation
Reversibility:	Not applicable
Likelihood:	Low (unlikely) if mitigation measures will ensure that Solid waste management in efficient way.
Consequences:	Mild, as it will be removed from site within few hours
Impact significance:	Low, based upon low likelihood and mild to moderate consequence.

4.9.2.1 Mitigation Measures

- Devise plan & develop guidelines for the safe handling, storage & disposal
- Sludge will be placed at the site after cleaning of Septic Tank
- PPEs will be strongly recommended for workers for the handling of sludge
- Separate bins at various places must be present for solid waste collection and segregation;
- Waste will be handed over to waste contractor;
- Solid waste will be recycling at maximum level;
- Industrial ecology practices will be implemented wherever possible;

4.9.3 Wastewater

Waste water will be produced only from domestic activities. In operation, no activity is place to used water and wastewater produced from it.

Nature of impact:	Direct
Duration:	Short term
Timing:	operation
Reversibility:	Not applicable
Likelihood:	Low
Consequences:	Mild
Impact significance:	Low.

4.9.3.1 Mitigation Measures

- Wastewater that is finally disposed of, will be in limits of PEQS
- Water conservation approaches will be followed to reduce its wastewater
- Wastewater treatment facility i.e. Septic Tank will be installed to treat the domestic wastewater prior to disposal into nearest drain.

4.9.4 Gaseous emission

Emissions can be produced by vehicles and equipment will similar to those produced by generators in terms of the resulting pollutants (SO₂, NO_x, PM, etc.). However, the extent to which they can produce would keep considerably lower, since much smaller engines will use in vehicles and construction machinery.

Nature of impact:	Direct
Duration:	long term
Timing:	operation
Reversibility:	irreversible
Likelihood:	moderate if mitigation measures will be ensured.
Consequences:	moderate, if pollutant levels in the ambient air will be control within acceptable limits by adopting proper mitigations.
Impact significance:	moderate, based upon low likelihood and mild to moderate consequence.

4.9.4.1 Mitigation Measures

None of the potential effects discussed above will be exceeded to acceptable limits. The mitigation measures given below used to reduce their impact, and ensure that they remain within acceptable limits.

- All equipment and vehicles during the operation of project will be properly tuned and maintained in good working condition in order to minimize exhaust emissions.
- Vehicle speed will be reduced on track passing through or close to shops
- Speed limits will be imposed and encourage more efficient journey management worked to reduce the dust emissions produce by vehicular traffic. Water sprinkling will be done where necessary.
- Management make sure process will be environment friendly

4.9.5 Energy Requirement

Energy consumption in industrial area is usually very high. Machinery work runs all the day in different industries. Energy conservation technique should be in mind and conduct an energy review. The energy review shall be updated at defined intervals, as well as in response to major changes in facilities, equipment, systems or energy-using processes.

4.9.5.1 Mitigation Measures

- Do not waste the energy/electricity when there is no need of it.
- Use energy efficient machinery and equipment
- Use energy saving products
- Conduct and maintain records for energy audits
- Do not leave the machinery in running form when there is no working being done

- Machinery must never be left unattended It is recommended to save and conserve the energy and adopt energy efficient technologies during the construction phase.
- Improve energy by checking and keeping balance of monthly usage energy of plant.
- Ensure about turn off and run equipment only when required.
- Regularly clean and maintain electrical and mechanical equipment which optimizing its performance and life span, which can translate to energy efficiency savings.
- install solar power system for plant in future to save the energy.
- Regularly check and maintain the electric equipment for the long life so the energy will be saved.

4.9.6 Noise level

Noise is the major concern during the operation phase. It can be generated from the traffic on the road and from the machinery used for operations.

Nature of impact:	Direct
Duration:	long term
Timing:	operation
Reversibility:	Not applicable
Likelihood:	low
Consequences:	slightly significant
Impact significance:	moderate, based upon low likelihood and mild to moderate consequence.

4.9.6.1 Mitigation Measures

- Machinery and vehicles will be tuned and maintained
- Limits will impose on unnecessary use of horns
- Safety signs will be displayed, public & drivers will be aware of them

4.10 Impact on Biological Environment

4.10.1 Natural Vegetation

Project activities will not impose any potential impact on the area's natural vegetation and plantation.

Assessment of Impact: A significant impact can be caused due to the unnecessary or excessive removal and burning of plants for fuel wood (If any)

Nature of impact:	Direct
Duration:	long term
Timing:	construction phase
Reversibility:	irreversible
Likelihood:	moderate
Consequences:	Mild, as no rare plant species were present in the areas.
Impact significance:	significant

4.10.1.1 Mitigation Measures

The following mitigation measures will reduce the impact on vegetation:

- Prohibition to park vehicles on green belts/ grass;
- Unnecessary damage to vegetation is strictly avoided;
- Proponent will plant trees and other species after construction phase;
- Proponent will plant 10 trees if he removes a single plant during the construction/ development of the project.

4.10.2 Fauna

The fauna including wildlife specially endangered species do not exist at the project site.

Nature of impact:	Direct
Duration:	short term
Timing:	construction phase
Reversibility:	not applicable
Likelihood:	low
Consequences:	Nil, as no rare animal species are present in the areas.
Impact significance:	not significant

4.10.2.1 Mitigation Measures

- Maximum plantation is recommended
- Fauna will be preserved by different conservation strategies (in-situ and ex-situ), if any.

4.11 Potential Environmental Enhancement Measures

The proposed project will be constructed with all precautionary measures to enhance and safe the environment. Following necessary measures will be adopted during construction and operational phase of the project:

- Sprinkling of water will be done on dusty roads and tracks.
- PPEs will be provided during construction activity.
- Constructional waste and domestic solid waste will be disposed-off or utilized properly.
- Local people will be informed in advance when work is about to start in an area.
- Machinery will never be left unattended.
- Efforts should also be made to discuss traffic conditions so that regular traffic is not disturbed. Transporters engaged for the project would be forced to adhere to the load specifications of the access road. No overloading would be allowed in any case.
- Safety signs and boards will be placed during construction.
- Machinery will be kept maintained.
- Waste water will be treated through septic tank that will be installed within the premises of the subject project.
- Proper SOPs will be followed with proper schedule along with the HSE conditions.
- Area will be restored with native plants. A proper tree plantation plan will be formulated to save the environment.
- Solid waste will be handed over to contractors and agreement will be made.
- Noise will be controlled by adopting proper measures.
- PPEs will be provided to workers during working.
- Firefighting equipment and system will be installed.
- Safety signs will be placed at all locations where required.

- Hygienic conditions will be ensured and proper quality will be maintained by quality control testing.
- First aid facilities will be made available.

4.12 Purpose of Mitigation Measures

4.12.1-What is the problem i.e. in terms of “ Major Environmental Influences “which may arise by the subject project activity?

The major impacts which may arise by the subject project are air, water and noise pollution. Other impacts are of minor importance. These impacts may arise during operational phase of the project because the constructional phase of the project includes the construction of boundary walls, roads and offices, so they will not cause any major harmful impacts on the environment and during the operational phase of the subject project, as different industries will be installed in the industrial estate, they may cause the issues of air, water and noise pollution if proper precautionary measures to avoid this pollution will not be taken but it will be ensured that precautionary measures will be adopted prior to start the activity, during the activity and post activity to cause minimum impacts to the environment.

4.12.2 When the problem will occur and when it should be addressed?

Negative impacts may arise during the constructional phase of the project if proper precautionary measures and procedures will not be followed. If proper precautionary measures and procedures will be implemented, there will not be any major problem. If any impact would arise due to the subject project activity, it will be addressed on site. Trainings will be conducted on site prior to start work while other precautionary measures will also be adopted to make the project safe and environmental friendly.

4.12.3 Where and how the problem should be addressed?

The problem should be address at the site and immediate response should be provided to address the problem which may arise. Institutional capacity responsible for the implementation of EMMP will be responsible for addressing such problems if arise. They will assess any impact that could be arisen during both phases and they would also be responsible to address the problem and to mitigate it.

4.13 Why of achieving mitigation measures

4.13.1 Changing in planning and design

By adopting proper mitigation measures, any anticipated major or minor environmental impacts could be controlled or mitigated. The details of impacts and mitigation measures have been discussed in previous chapters.

4.13.2 Improved monitoring and management practices

Management shall take appropriate measures to provide pollution free and safe environment during the proposed project activity by implementing improved management practices and monitoring techniques suggested in EMP.

4.13.3 Compensation in money terms

Site proposed for the subject project is the property of the M/S Ittefaq Metal Recycling

and free of any activity that's why there is no need of money in terms of land cost or any other mean. However, rehabilitation will be done in the vicinity of the project site to restore the beauty of the area.

4.13.4 Replacement, relocation and rehabilitation

Subject project site is the property of M/S Ittefaq Metal Recycling there is no need of replacement or relocation of a single person or economic activity. Management will develop Restoration/ reclamation or tree plantation plan to restore the project area after the construction phase of the project. Maximum Plantation will be done with native species within and outside the premises of the industrial estate, along the boundary wall and road side if directed. Also, in-front of main area, horticulture plan will be formulated and area for this will be kept reserved.

CHAPTER No: 05

5 ENVIRONMENTAL MANAGEMENT AND MONITORING PROGRAM

The primary objectives of the EMMP are to:

1. Facilitate the implementation of the mitigation measures identified in the EIA.
2. Define the responsibilities of the project proponent.
3. Define a monitoring mechanism and identify monitoring parameters in order to:
4. Ensure the complete implementation of all mitigation measures.
5. Ensure the effectiveness of the mitigation measures.
6. Provide a mechanism for taking timely action in the face of unanticipated environmental situations.
7. Identify training requirements at various levels.

5.1 Intuitional Capacity

The overall responsibility for compliance with the environmental management plan rests with the project proponent. He will appoint a HSE/Project Manager of relevant qualification. HSE/Project Manager will act as Environmental Manager and will manage all HSE conditions at the PEQS.

A certain degree of redundancy is inevitable across all management levels, but this is in order to ensure that compliance with the environmental management plan is crosschecked. Following functionaries will be involved in the implementation of EMP:

- Project Proponent
- HSE Officer
- In-Charge Administration
- Supervisor of project

5.2 Training Schedule

Trainings will be conducted at unit after completion of constructional phase; It will be imparted by a team of experienced trainers.

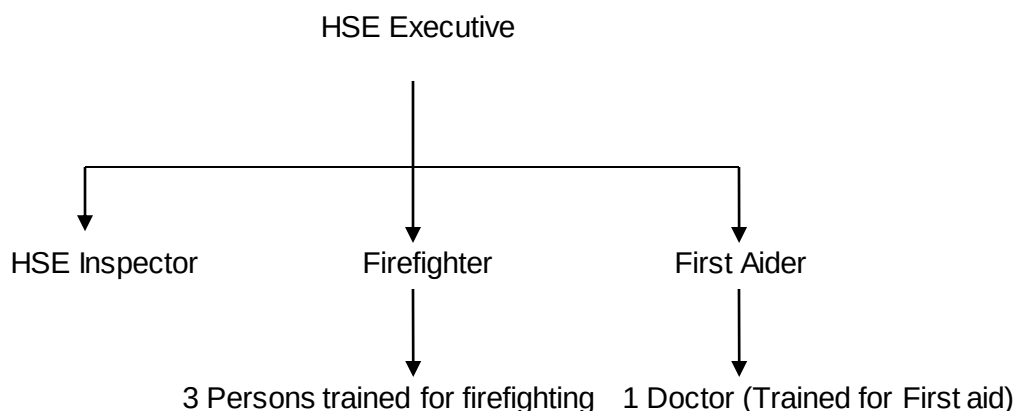


Figure 3: Institutional Capacity for the implementation of EMP

Management will hire HSE officer, HSE officer will be responsible for conducting the training of the labor, which will be organized either by the management of industry or by the contractor. Following schedules of training will be implemented:

Table 12: Training Program

Sr. No.	Description of program	Labor/ Personnel involved	Time/ duration
1.	General HSE Training	Trainers and whole labor	Quarterly for 1 hour
2.	Instrument use/ workplace specific items	Trainers and whole labor	Quarterly for 1 hour
3.	PPEs use and safe work practices at work site.	Trainers and whole labor	Quarterly for 1 hour
4.	Reporting and investigating accidents/ incidents	Trainers and whole labor	Quarterly for 1 hour
5.	Emergency procedures	Trainers and whole labor	Quarterly for 1 hour
6.	Medical and first aid	Trainers and whole labor	Quarterly for 1 hour
7.	Health and safety promotion	Trainers and whole labor	Quarterly for 1 hour
8.	Awareness regarding COVID-19 and Preventive Measures of COVID-19.	Trainers and whole labor	Quarterly for 1 hour

In order to raise the level of professional and managerial staff, there is a need to upgrade their knowledge in the related areas. HSE/Project Manager should play a key role in this respect and arrange the training programs. HSE/Project Manager will provide training to staff and workers about the best environmental management practices at the construction site and affective implementation of the EMMP. The training modules will include air, noise and water pollution monitoring, social awareness, Environmental Laws, Punjab Environmental Quality Standards (PEQS), Usage of personal protection equipment, and health and safety related issues on the construction site.

The HSE/Project Manager will train all workers & staff in basic sanitation and health care issues (e.g., how to avoid malaria and transmission of Sexually Transmitted Infections (STI) HIV/AIDS and in general health and safety matters, and on the specific hazards of their work. Training should also consist of basic hazard awareness, site specific hazards, safe work practices, and emergency procedures for fire, evacuation.

5.2.1 Training of building contractor

Training of building contractor & workers will be the part of the TORs regarding the construction of the scheme. TORs will be including the training and submission of reports in the following area:

1. Handling of Machineries in a safe way
2. Use of PPEs
3. Maintenance of vehicles and submission of Environmental Monitoring Reports
4. Maintenance of Water Consumption records
5. Testing of water and waste water and submission of Environmental Monitoring Reports
6. Placement of safety signs/boards during construction
7. Sprinkling of water on the roads and dusty tracks
8. Monitoring of generator emissions

Training regarding all other aspects of HSE will be ensured by the contractor during the construction phase.

5.3 Summary of impacts and their mitigation measures

Table 13: Summary of Impacts and their Mitigation Measures

Impacts	Mitigation Measures
	Project Location
- Acquisition of land - Loss of environmentally sensitive areas - Changes in traffic pattern - Potential conflicts with stakeholders - Resettlement issues	✓ There is not any sensitive area near the project site. ✓ It is recommended to settle the issues through scoping and specific group discussions. ✓ No resettlement issues. ✓ It is recommended for obtaining of approval from other relevant departments.
- Soil structure and soil bearing capacity - Road infrastructure design - Emergency exits - Firefighting system - Wastewater disposal system design - Electricity hazards	✓ Safe road infrastructure design should be provided at the project site. ✓ Emergency exit points should be marked at the project site. ✓ Firefighting equipment must be maintained at the site in good working condition to cope with any emergency situation. ✓ Efficient wastewater disposal system should be designed for proper treatment of wastewater. ✓ Electricity system should be designed safe and sound.
Construction and Operation phase	
Land & Soil	
- Land or Soil Erosion during the construction phase - Habitat destruction - Scarring of the landscape and aesthetic beauty. - Clearing of native plants will disturb the complexity of the ecosystem of the proposed area. - Leakage of oil from storage area may contaminate soil	✓ Sprinkling of water is recommended ✓ After construction phase, the project proponent will restore the land by plantation. ✓ All spoils will be disposed of as desired and the site will be restored back to its original conditions Aesthetics of the area will be maintained. ✓ Oils, lubricants, chemicals, and other listed hazardous materials should be stored safely at their designated spots, enclosures or store rooms, which should be safe from rainfall and away from any potential source of fire.
Air pollution and Dust emission	
- The transportation of the project machineries and material also may cause dust. - Un-metalled roads may cause dust. - Dust raised on dirt tracks by project-related vehicles. - Dust from drilling of deep holes. - Combustion products from vehicles used for project-related activities	✓ Air emissions controlled devices must be installed to control the air pollution (if any) ✓ Water the construction site periodically to minimize fugitive dust generation while laying foundation. ✓ Store all construction materials in a manner to minimize generation of dust and spillage on roads. ✓ During excavation works drop heights will be minimized to control the fall of materials reducing dust escape.

	✓ Sprinkling of water must be done to control the dust or PM ✓ Vehicle emissions inspection should be done on regular basis ✓ Sprinkling should be done on the unpaved area to avoid dust pollution/ particulate matter. ✓ Vehicles/ trucks should be serviced regularly ✓ All project vehicles will be checked regularly to ensure that engines are in sound working condition and are not emitting smoke.
Noise	
The major sources of the noise at proposed project site are project related machinery.	✓ Personal Protective Equipment PPEs including Ear muffs, Ear plugs and other noise abating equipment will be provided to the workers and other staff of the subject project.
▪ High noise level cause hearing loss, deafness, high blood pressure, headache, depression and mental disturbance. ▪ Noise level will not exceed 75 dB(A) at the distance of 2 km radius, activity site is located at a safe distance from the nearest human settlement. ▪ Noise from construction activities from site preparation, earth works, foundation and plant equipment installation	✓ Proper maintenance and tuning of the vehicles should be done. ✓ Sound proof room should be built for generator (if any) to control the noise. ✓ A speed restriction of 10 km/h will be imposed on all construction vehicles.
Waste Water	
▪ Domestic waste water from the camp ▪ Minor generation of waste water from construction activity. ▪ Water Contamination due to improper storage of construction material, ▪ Water contamination due to improper debris disposal, ▪ Spread of diseases, underground water contamination	✓ Domestic waste water will be drained out in nearby local drain after treatment. ✓ Oils, lubricants, chemicals, and other listed hazardous materials should be stored safely at their designated spots, enclosures or store rooms, which should be safe from rainfall.
Solid waste	
▪ Solid waste may generate from construction activity, domestic and packing material of project related machineries. ▪ Solid waste may generate from operation of project. ▪ Generation of dairy Waste	✓ A solid waste management division should be formulated to deal with the proper disposal of solid waste, supervised by HSE Manager, SW Manager, and other related personnel. ✓ Solid waste generated from the construction activity as sand, stones residues etc. that should be utilized in restoration of the quarry area whereas solid waste from the domestic sources should be disposed of properly

Hazardous Wastes ▪ Lubricant ▪ Tube Light ▪ Battery ▪ Ink	✓ Proper solid waste management system is recommended. ✓ The proponent shall provide waste segregation bins strategically designed to encourage the separation of wastes at source to promote re-use and re-cycling. ✓ All hazardous waste will be stored in a bonded wall locked before taken for disposal by EPA licensed contractor. ✓ Burnt by external authorize agency
Health and Safety	
▪ Health and safety issues will be arising during construction activity, handling of material, machinery and improper practices of work ▪ Health and safety issue may arise during regular operations	✓ Use of PPEs should be implemented at workplace. ✓ First aid measures/medical facility should be provided to project related employees. ✓ Safe drinking water must be provided to workers, staff, and poor people of the area. ✓ Water consumption records should be maintained. ✓ Safety signs & boards should be placed at during construction activity. ✓ Construction site should be fenced properly to avoid any damage to nearby settlements. ✓ Smoking or any drugs should be prohibited during working hours or performing work. ✓ At the time of earthwork, fencing will be ensured for the area under the exploration.

5.4 Equipment Maintenance Detail

The management of the subject project will maintain records for Health, Safety & Environment and will hire Environmental / unit manager to check and deal with the unit issues. All mobile equipment is to be inspected and maintained according to the following Equipment Inspection Schedule as a minimum. Records of all inspections and maintenance are completed and maintained for review and approval. Maintenance of equipment, release of lubrication fluids, etc., is performed only in approved areas. Spills and leaks from equipment are cleaned up promptly.

Table 14: Equipment Inspection Detail

Type of Equipment	Type of Inspection	Schedule
Cranes – Crawler, Truck, Hydraulic, etc.	Complete inspection and certification	Before put to work and annually
	Critical items, controls, overall functioning	Daily
	Safety device, hooks, cables, electrical	Monthly
	Complete inspection	Every 3 months
	Repair	When failure occurs
	Preventative maintenance	Manufacturer's recommendation
Heavy Equipment	Complete inspection	Before put to work
Dozers, Backhoes	Complete inspection	Every 3 months
Compactors, Trucks	Repair	When failure occurs
	Preventative maintenance	Manufacturer's recommendation
	Operator's checklist	Daily
Miscellaneous	Complete inspection	Before put to work
Compressors, Welding Machines, Generators	Complete inspection	Every 3 months
	Repair	When failure occurs
	Preventative maintenance	Manufacturer's recommendation

5.5 Schedule for implementation and Environmental budget

The project will be executed through private contractors who will be responsible for implementation of environmental mitigation measures during the construction stage, while CE with the assistance of Environmental Consultant will supervise and monitor compliance of all those mitigation measures. It has been estimated that project works will be completed in three months.

The cost which is required to effectively implement the mitigation measures is important for the sustainability of the Project in operation stage of the Project. Management will allocate 2% of total cost (Rs: 85,000,000/-) of the project as Environmental Budget for meeting the following purposes:

Table 15: Allocation of Environmental Budget

HSE training	On quarterly basis	Rs: 200000/-
Maintenance and management of environment	On regular basis	Rs: 200000/-
Maintenance of equipment	On regular basis	Rs: 700000/-
Restoration	As per requirement	Rs: 50000/-
Plantation	During the operation phase	Rs: 100000/-
Availability of PPEs	During construction and operation	Rs: 100000/-
Strategic planning to cope with any emergency	As per policy	Rs: 200000/-
Formulate the disaster management plan to cope with natural disaster	As per policy	Rs: 150000/-
Total		Rs:1700000/-

Environmental budget will be allocated and reviewed on annual basis. Implementation of all these parameters will be included in the environmental budget. Any equipment failure will not be included in this budget.

5.6 Environmental Management Team

Environmental Management Team along with their Roles and responsibilities carrying out EIA study.

S.No	Name	Designation/Qualification	Roles and Responsibilities
1.	Engr.M.Akram Khan	Environmental Consultant/ BSc Met Engg UET LHR BSc Elect Engg UET LHR Lead Editor Environmental Management System.	To frame all environmental related reports IEE/EIA etc. To train the Management staff, to perform the environmental monitoring functions during the construction and operation stage.
2.	Muhammad Ali	Environmental Manager/MBA.	Stakeholders and Public Consultation
3.	Muhammad Asim	Analyst/ B.Com.	Project Coordinator

5.7 Environmental Management Plan M/S Ittefaq Metal Recycling.

Table 16: Environmental Management Plan

Sr. #	Aspects	Impact & Mitigations to be taken			
		Impacts	Mitigation measures Construction/Operation	Responsibility	Monitoring
Land acquisition for the proposed project					
1.	Land acquired for the subject proposed project	Nil	The site proposed for the subject project is the property of the M/S Ittefaq Metal Recycling.	Proponent	Environmental Consultant/EPA PUNJAB
Land use & soil erosion					
2.	Land Use & Soil	Particulate Matters (PM) pollution, Clearing of the vegetation Undulated patches. Scarring of the landscape and aesthetic beauty. Clearing of native plants will disturb the complexity of the ecosystem of the proposed area. Dust emissions will be generated during the construction. Flue gases will be generated due to the involvement of generators and other machinery.	Measures will be taken to avoid soil erosion and dust pollution. Restoration and reclamation plan will be developed to restore the natural landscape of the area. Plant nursery, garden will be developed to rehabilitate the native plants of the area. Project proponent will make all possible efforts to limit the impact on flora and fauna. The Management has serious concern and will take measures to preserve the environment and natural aesthetic beauty of the site.	HSE Department	Environmental Consultant/EPA PUNJAB
Ambient Air Quality					
3.	Air Quality	Particulate matter and fugitive dust emissions. Dust emission due to vehicles on un-metaled roads. Dust due to Construction. Dust raised on dirty tracks by project-related vehicles. Dust emission during	Sprinkling of water is recommended on dusty roads and unpaved tracks to control the generation of dust and PM. Water the construction site periodically to minimize fugitive dust generation while laying foundation. Store all earthwork and construction materials in a manner to minimize generation of dust and spillage on roads. During excavation works drop heights will be minimized to control the fall of	Manager Operation	Environmental Consultant/EPA PUNJAB

		earthwork Gaseous emissions from the vehicles Air pollution due to site visiting vehicles/ transporting trucks, hauled trucks, machinery.	materials reducing dust escape: Temporary cover may be provided for earthwork if necessary. Vehicle emissions inspection should be done on regular basis. Sprinkling should be done on the unpaved area to avoid dust pollution/ particulate matter. Vehicles/ trucks should be serviced regularly. All project vehicles will be checked regularly to ensure that engines are in sound working condition and are not emitting smoke. Regular monitoring is recommended to check the compliance with PEQS as per EPA PEQS Rules.		
Noise & Vibration					
4.	Noise	The major sources of the noise at site are project related machinery. High noise level cause hearing loss, deafness, high blood pressure, headache, depression and mental disturbance. Noise level will not exceed 75 dB (A) at the distance of 2 km radius, project site is located at a safe distance from the nearest human settlements. Noise from construction activities from site preparation, earth works, foundation and plant equipment installation.	Personal Protective Equipment PPEs including Ear muffs, Ear plugs and other noise abating equipment will be provided to the workers and other staff of the subject project. Proper maintenance and tuning of the vehicles should be done. Sound proof room should be built for generator (if any) to control the noise. A speed restriction of 10 km/h will be imposed on all construction vehicles. Regular monitoring is recommended to check the compliance with PEQS as per EPA PEQS Rules. Noise level monitoring was conducted at different location and results are attached with the report.	HSE department	Environmental Consultant/EPA PUNJAB

Soil Contamination					
5.	Soil contamination	Contamination of soil due to oil and other chemicals leakage or spillage Soil contamination due to waste water generated from the project activities	SOPs will be developed for the storage of oil and other chemicals handling and transportations (if any) Soil contamination must be controlled by adopting mitigation measures such as storage of oil, fuels etc. under paved area, by maintaining leakage record of construction vehicles, and by regular inspection (admitted by proponent). Tarpaulin sheets should be placed under generators and other leaching substances (if any) Treated water will be used for plantation. Proper storage of oil, fuel etc. is recommended under paved area.	HSE Department	Environmental Consultant/EPA PUNJAB
Health and safety					
6.	Health and safety	Health & safety issues of workers and nearby community.	Trainings of the workers is recommended for health & safety, first aid and firefighting. Proponent must provide First aid facilities to workers in case of any injury or accident. Safe drinking water must be provided to workers, staff, and poor people of the area. Water consumption records should be maintained. Provision of Proper PPEs must be ensured at workplace. Assembly point and exit points must be available at workplace. Electric wires, D.Bs must be kept covered & closed to avoid any electric hazards. Smoking or any drugs should be prohibited during working hours or performing work. Safety signs & boards will be placed at the time of construction activity. Security guards will be appointed at the construction site. At the time of construction and earthwork, fencing will be ensured for the area under the exploration. Further proper housekeeping and safety arrangements must be ensured at the subject project.	HSE Department HSE Manager has already been hired.	Environmental Consultant/EPA PUNJAB

Waste Water					
7.	Waste water	Minor generation of waste water from construction activity. Water Contamination due to improper storage of construction material, Water contamination due to improper debris disposal, Waste water pollution, Spread of diseases, underground water contamination	Waste water generated from the constructional activity will be used as sprinkling on the dusty tracks or for restoration of the land. Waste water monitoring is recommended on regular basis.	Waste water generated from the operational phase should be treated before its discharge.	Environmental Consultant
Solid waste generation					
8.	Solid Waste Generation	Land & soil contamination, aesthetic degradation, foul smell etc. Solid waste generation from the construction activity, domestic and project process sources. Nuisance from generation of dust and other airborne contaminants. Odor nuisance associated with storage of open piles of waste material.	A solid waste management division will be formulated to deal with the proper disposal of solid waste, supervised by HSE Manager, SW Manager, and other related personnel. Constructional waste must be utilized for road filling or maintenance purposes. Recycling of material should also be implemented up to possible extent. Existing Project related solid waste should be handed over to contractors. Ecologically sustainable farming practices should be introduced. It is recommended to ensure Proper housekeeping and adopt proper waste management system. Industrial ecology practice will be adopted wherever applicable and possible. 7 R's of sustainability is recommended.	HSE Department	Environmental Consultant/ EPA PUNJAB
Odor					
9.	Odor	Odor associated with storage of open piles of waste material during processing, and fragmentizer operation.	Develop and implement site procedures regarding waste processing.	HSE Department	Environmental Consultant/ EPA PUNJAB

Energy requirement					
10	Energy requirement	Resource depletion	Do not waste the energy/electricity when there is no need of it. Use energy efficient machinery and equipment Use energy saving products Conduct and maintain records for energy audits Do not leave the machinery in running form when there is no working being done Machinery must never be left unattended It is recommended to save and conserve the energy and adopt energy efficient technologies during the construction phase	HSE Department	Environmental Consultant/ EPA PUNJAB
Socio economic impacts					
11	Resettlement	Resettlement issues	The proposed area under the investigation is devoid-off any human settlement and it is the property of the M/S Ittefaq Metal Recycling.	NA	NA
12	Language	Change in cultural language	Maximum employment of Local people is recommended to preserve the local cultural language. It will help in communication with the local people to resolve any emerging issue near the project area	Proponent	NA
13	Education	Change in social behavior and economic gains	The project proponent must initiate an educational awareness program with the coordinator of the local people.	Proponent	NGO survey
14	Health	Social performance of the individuals in the area	The project proponent shall assist the local impacted community for the improvement of health services Health clinic must be established for the project workers.	Proponent	Proponent
15	Culture and norms of the area	Change in culture by the influx of nomadic people	Maximum local employment should be ensured to preserve the culture of the area	Proponent	NGO survey/Environmental Consultant
16	Sewage and waste disposal	Diseases caused by improper sanitation	Awareness program will be initiated regarding the disposal of waste.	Proponent/ local NGO	NGO survey/ Environmental Consultant

5.8 Proposed Environmental Monitoring

To oversee the environmental performance of the project through its lifecycle enforcing the PEQS an Environmental Monitoring Program should be formulated which ensures effective surveillance of the environmental parameters at various stages of the project development and compliances with PEQS and legal obligations. Monitoring for following Environmental Parameters is recommended:

Table 6: Environmental Monitoring

Sr. No.	Parameters	Monitoring Schedules	Monitoring Duration
1.	Ambient Air Monitoring (NOx, COx, SOx, PM10)	Quarterly	8 Hours
2.	Noise Level	Quarterly	Instant
3.	Water quality	Quarterly	Some parameters on site, Others in lab

The environmental monitoring plan to be enforced during construction will be implemented by Chief Executive with the assistance of Consultant. The Management staff will be trained by the Consultant to perform the environmental monitoring functions during the operation stage. Consultant/ Engineer are being engaged to train Management Staff during construction and meantime period. Under the powers conferred to EPA by the 2022 Regulations, the Department may externally monitor various project related activities in order to ensure that the project operations are in compliance with the requirements of applicable National Environmental Legislation.

CHAPTER No: 06

6 STAKEHOLDERS AND PUBLIC CONSULTATION

The consultation process with various stakeholders of M/S Ittefaq Metal Recycling has been carried out to involve community and other stakeholders at earlier stages. Information dissemination during public consultation is fundamental to successful conclusion of the Project. This chapter describes the objectives and details of the consultative process adopted; its outcome and the conclusions drawn thereafter. Public consultation has been done during the planning and design phases of the Project with line agencies and affected persons of the Project area; concerns and suggestions thereafter have been taken into account and included where appropriate. The consultative process to date has been effective in addressing the concerns over the Project construction and operational impacts. Total 7 members consulted.

6.1 Objectives of Consultation

Public consultation plays a vital role in studying the effects of any development project on stakeholders and in its successful implementation and execution. It affords an opportunity to exchange knowledge with those who as members of the society are concerned with the Project, immediately or remotely. Referring particularly to a Project related to environmental assessment, involvement of public is all the more essential, as it leads to better and more acceptable decision-making.

The objectives of the stakeholder and Public consultation conducted in Project Area were;

- To apprise the Project community and stakeholders about Project interventions and potential impacts.
- To record the community concerns and recommendations regarding the proposed Project.
- To address/incorporate those recommendations in the Project design to the extent possible and;
- To share the mitigation measures with the local communities.

6.2 Consultative Aspects

The proposed Project involves stakeholders from various segments of the society, who have direct or indirect interest in the developmental activity. The Environment and Social team has endeavored to hold consultative sessions with a number of prominent stakeholders (Project Proponent, line agencies, NGOs and affected persons of the Project Area) to evince their views on the proposed Project and their opinions, suggestions, understanding on various issues and concerns. The consultations aimed specifically at:

- Dissemination of Project information through discussions, education and liaison.
- Eliciting the comments and feedback on the proposed Project.
- Documentation of information narrated by the stakeholders.
- Documentation of mitigation measures proposed by the stakeholders.
- Incorporation of public concerns and their addresses in the EIA/EMMP.

6.3 Identification of key stakeholders

There are two types of stakeholders related to the project i.e. primary and secondary stakeholders. Primary stakeholders are those which are directly affected by the Project activities and secondary stakeholders are those which are affected indirectly.

The proposed Project does not have direct impacts on any individual; therefore, no primary stakeholders are identified. Secondary stakeholders are institutional stakeholders, which includes Project Proponent, local Government representative general public, local residents, shop keepers, vendors, hospital owners/staff, teachers, pedestrians, and businessmen/traders of the city. The categories of the stakeholders who provided useful feedback, included:

- Project Proponent
- Environmental practitioners and experts
- Teachers/students
- Shopkeepers
- Drivers

All those stakeholders have different types of stakes according to their involvements in various aspects of the Project. Environmental consultants tried to contact all the stakeholders and shared their views and concerns and also interacted with the community-based organizations that can support the community. Environmental consultants and social specialists and documenting the opinions of the stakeholders expressed during the meetings etc.

6.4 Meeting with stakeholders

A series of consultation was carried out with stakeholders and general public in Sher Rabbani, Industrial Estate, 14 Km Near Unifoam Factory, Multan Road, Lahore-Pakistan and nearby areas. Further list of official stakeholders and local people consulted is attached as Appendix-03.

The purpose of this survey was to achieve the objectives of the consultation, highlight the main issues in the implementation of the proposed Project and finally propose mitigation measures. Open and close ended questionnaire was used to collect the views concerning the assessment survey. Scoping sessions and informal group discussions were also carried out with local residents and local government representatives regarding the proposed Project. The outcome of whole consultation process was very encouraging. The following issues were discussed during Informal Meetings with local representatives:

- i. Brief Description of the Project
- ii. Current economic condition in the area
- iii. Suggestions for improvement in the current industrial system and all activities related to industry
- iv. Perceptions about the proposed Project
- iv. Perceived impacts of the proposed Project

The local poor people predominantly requested for unskilled and semi-skilled jobs during implementation of the Project. On the basis of the consultations so far, it appears that the Project will have no insurmountable environmental and social impact. The community generally supported the proposed Project. They have opinion that the Project will not only

provide livelihood during construction stage, but also will help to eradicate the burning issue of regarding import of materials.

6.5 Analysis of Stakeholders Consultations

6.5.1 Sample Size

7 sample sizes were selected by the Team of consultants for conducting the socioeconomic survey. Neighbors near the project site were also consulted for the said survey; their names are mentioned in the list of respondents while most of them were not aware about the environmental issues.

6.5.2 Statistical Analysis

SPSS 19.0 has been used for the statistical analysis of the data collected during the visit of study site through questionnaires.

6.5.3 Result and discussion

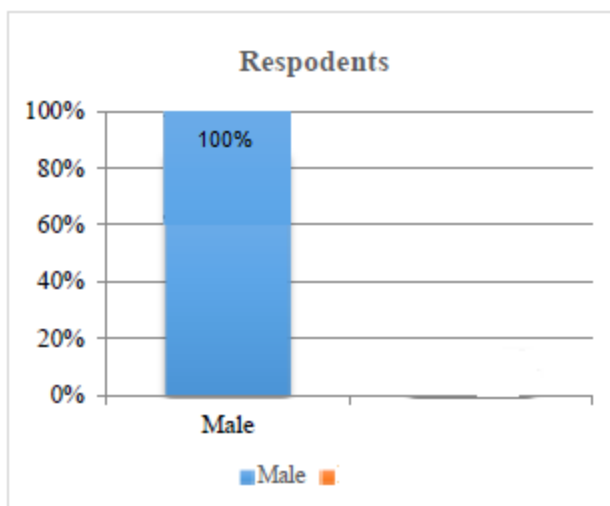


Figure 04: Gender Ration of Respondents

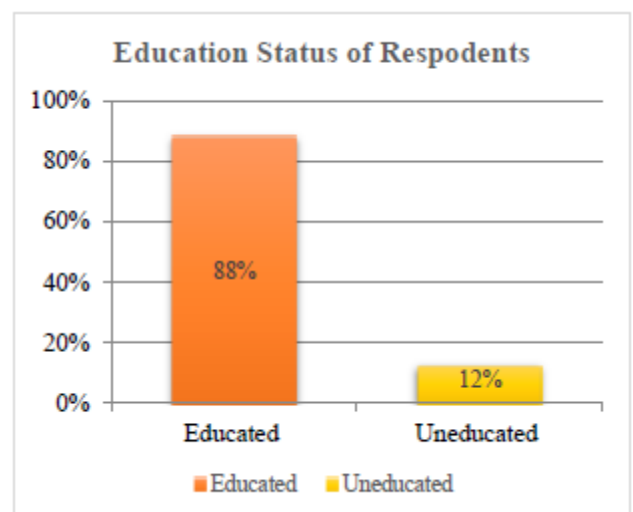


Figure 05: Education Status of Respondents

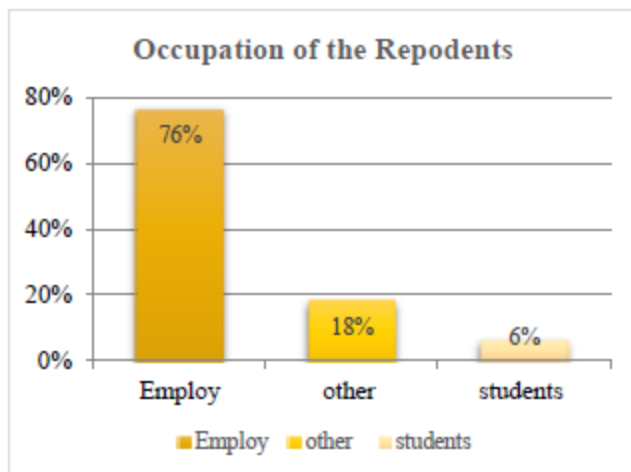


Figure 06: Occupation of Respondents

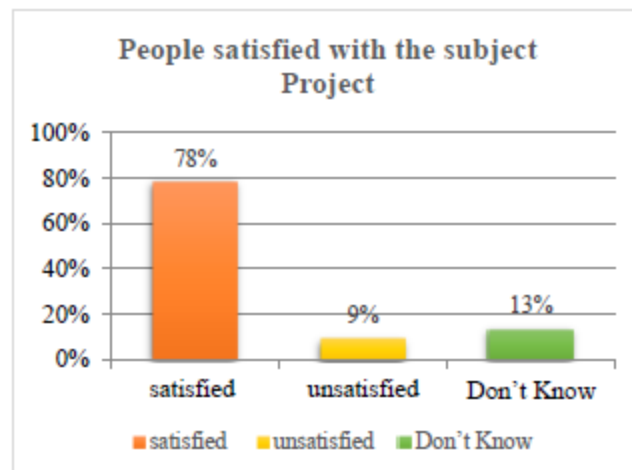


Figure 07: Satisfaction of Respondents

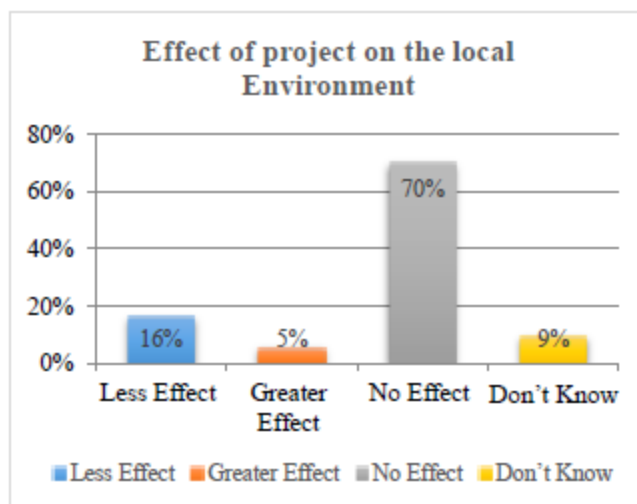


Figure 08: Effect of project on local Environment

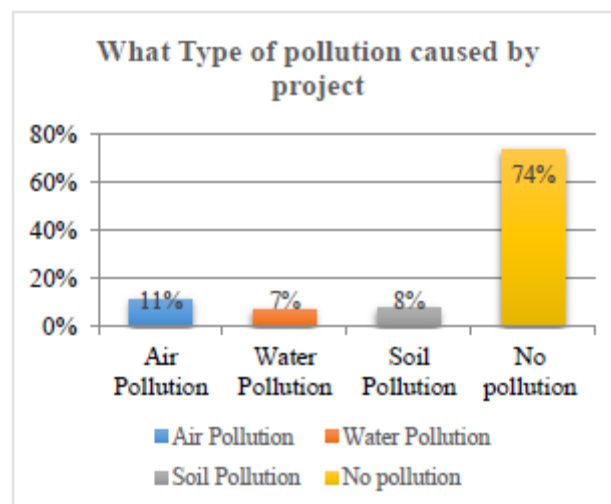


Figure 09: What type of pollution caused by project?

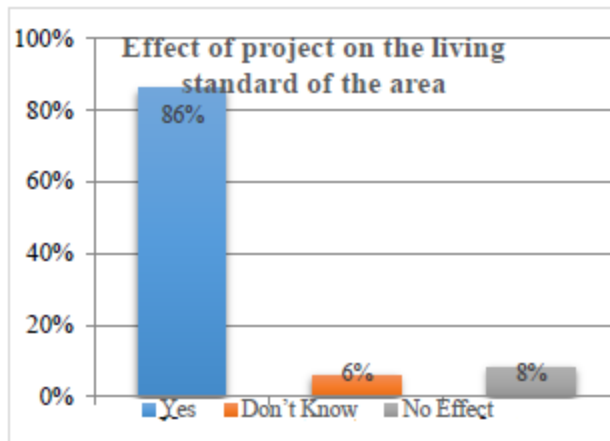


Figure 10: Effect of project on living standard of area.

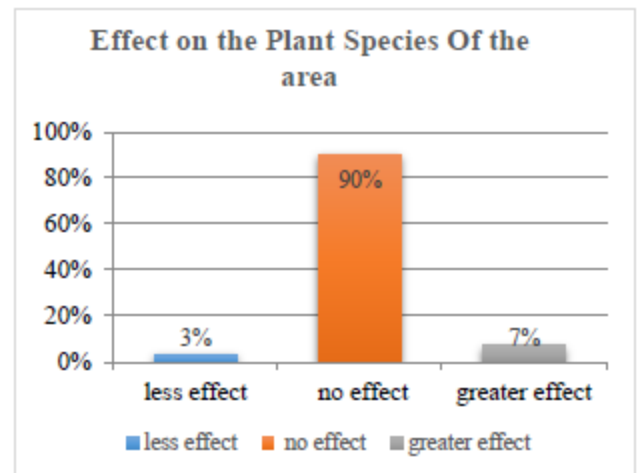


Figure 11: Effect of plant species of area.

According to graphical representation, 100% respondents were male. 88% respondents were educated while 12% were uneducated. So, according to the survey overall education status of the area is good. As per survey, 78% people were satisfied with the proposed project and they gave positive remarks regarding proposed project as they got job over there, their living standard raise over working there. While 13% respondents were, have no opinion regarding the project and 9% respondents were not satisfied with the production unit due to their concern regarding the aesthetic degradation and no preference to local people for jobs. Majority were in favor that no effect will produce by this project.

6.6 Summary of issue raised by stakeholders

A summary of the key issues raised by stakeholders and how these are being addressed by Project Proponent is provided in Table 17.

Table 17: Summary of issues and commitments by Proponent.

Issue	Aspect/Concern raised by Stakeholders	Project Commitments Proponent
Employment Opportunities	Expectations of employment are very high. Job opportunities are less for herders as they generally have less skills and training.	Mostly locally, skilled and unskilled labor will be prioritize. Around 20-25 person will be employed by the IMR.
Training Opportunities	People are keen to consult with subject industry if the Project offers training and upgrading opportunities to enhance their trade or professional skills.	Development of the Training Strategy, including commitment of allocation of budget investment for training infrastructure, delivery and design.
Health & safety	Truck traffic is a main concern because the road used by the Project passes through a number of small communities.	Traffic safety training. Traffic advisory signs will be installed along project site and all nearby specific areas.
Local economy and business development	Local service providers are keen to participate in providing services to provide raw material and expect to receive in order to adjust their businesses to meet specific needs. Local businesses want to receive support in terms of finance and facilities to diversify their businesses.	Proponent has main focus that all the material regarding construction and operation will buy from the local market. This will help the local and small business and to people who are keen interested to become suppliers. Only scrape will be imported.
Environmental Issues	Dust and noise impacts, particularly from the construction activities are of concern to herders and other residents. Loss and change of vegetation due to soil degradation. Increased waste along project boundary and around economic zone.	Implementation of controls under the Environmental Management Plans, including on and off-site dust and noise monitoring. A Participatory Environmental Monitoring Program will be launched to spread awareness.
Water quantity and quality	Water quality and quantity, and impacts from the wastewater disposal are all key concerns for nearby herders.	Implementation of consultation in relation to water use and development of the Participatory Environmental Monitoring Program.

CHAPTER No: 07

7- CONCLUSION AND RECOMMENDATIONS

Based on the study conducted for Environmental Impact Assessment (EIA) for the subject project, the following conclusions are made:

7.1 Conclusion

The EIA study reveals that the project is economically viable and socially acceptable and the management will implement the project in the environment friendly manner. Management will adopt all the necessary measures to control any impact if resulting from the project. Management will provide the safe drinking water, safe working environment, proper training and first aid facility to all workers and staff. The project will generate additional jobs during construction and operation phases.

7.2 Recommendations

- In view of the comprehensive screening process and findings of the present study, there is no need of conducting further investigations.
- Tree plantation near the project area and 1000 trees of 6-7 feet height annually of indigenous species in respective district is recommended.
- The Management of will continue to assist the local communities as a corporate/social responsibility (CSR).
- Any seepage and leakage will be controlled through proper mitigation measures (if any)
- Sound proof room should be constructed for generator to control its sound.
- Use of narcotics and smoking must be prohibited during working, filling or handling of fuel.
- PPEs must be provided to workers such as gloves, masks, etc.
- Proper solid waste management system must be adopted.
- Safety signs, safety board etc. must be placed on site during various developmental stages.
- Machinery will never be left in running condition.
- First Aid measures, health & safety Equipment (PPEs) will be provided to workers.
- Fire Fighting station & system will be installed.
- The management of subject project will assist the local communities as a corporate social responsibility.
- Jobs and employment will be provided to the local area.

The present EIA report is enough to meet the administrative and legal framework. After the complete study of the project, it is concluded that project will not have significant adverse impacts on the nearby community and on environment. Overall the project will have positive impacts on the local population and country as a whole. Therefore, it is requested for the environmental approval for the subject project.

Appendices

Appendix-01 : Glossary

"Adverse environmental effect" means impairment of, or damage to, the environment and includes:

- (a) impairment of, or damage to, human health and safety or to biodiversity or
- (b) pollution

"Air pollutant" means any substance that causes pollution of air and includes soot, smoke, dust particles, odor, light, electro-magnetic, radiation, heat, fumes, combustion exhaust, exhaust gases, noxious gases, hazardous substances and radioactive substances.

"Biodiversity" or "biological diversity" means the variability among living organizations from all sources, including inter alia terrestrial, marine and other aquatic ecosystems and ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems;

"Discharge" means spilling, leaking, pumping, depositing, seeping, releasing, flowing out, pouring, emitting, emptying or dumping.

"Ecosystem" means a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit.

"Effluent" means any material in solid, liquid or gaseous form or combination thereof being discharged from industrial activity or any other source and includes a slurry, suspension or vapor;

"Emission standards" means the permissible standards established by the Federal Agency or a Provincial Agency for emission of air pollutants and noise and for discharge of effluent and waste;

"Environment" means-

- (a) air, water and land;
- (b) all layers of the atmosphere;
- (c) all organic and inorganic matter and living organisms;
- (d) the ecosystem and ecological relationships;
- (e) buildings, structures, roads, facilities and works;
- (f) all social and economic conditions affecting community life; and
- (g) the inter-relationships between any of the factors in sub-clauses (a) to (f)

"Environmental impact assessment" means an environmental study comprising

Collection of data, prediction of qualitative and quantitative impacts, comparison of alternatives, evaluation of preventive, mitigatory and compensatory measures, formulation of environmental management and training plans and monitoring arrangements, and framing of recommendations and such other components as may be prescribed;

"Government Agency" includes-

- (a) a division, department, attached department, bureau, section, commission, board office or unit of the Federal Government or a Provincial Government;

(b) a development or a local authority, company or corporation established or controlled by the Federal Government or Provincial Government;

(c) a Provincial Environmental Protection Agency; and

(d) any other body defined and listed in the Rules of Business of the Federal Government or a Provincial Government.

"Hazardous substance" means-

(a) a substance or mixture of substance, other than a pesticide as defined in the Agricultural Pesticide Ordinance, 1971 (II of 1971), which, by reason of its chemical activity is toxic, explosive, flammable, corrosive, radioactive or other characteristics causes, or is likely to cause, directly or in combination with other matters, an adverse environmental effect; and

(b) any substance which may be prescribed as a hazardous substance;

"Initial environmental examination" means a preliminary environmental review of the reasonably foreseeable qualitative and quantitative impacts on the environment of a proposed project to determine whether it is likely to cause an environmental effect for requiring preparation of an environmental impact assessment;

"Local authority" means any agency set-up or designated by the Federal Government or a Provincial Government by notification in the official Gazette to be a local authority for the purposes of the Pakistan Environmental Protection Act 1997.

"Local council" means a local council constituted or established under a law relating to local government;

"Municipal waste" includes sewage, refuse, garbage, waste from abattoirs, sludge and human excreta and the like

"National Environmental Quality Standards" means standards established by the Federal Agency under clause

"Noise" means the intensity, duration and character from all sources, and includes vibrations;

"Pollution" means the contamination of air, land or water by the discharge or emission or effluents or wastes or air pollutants or noise or other matter which either directly or indirectly or in combination with other discharges or substances alters unfavorably the chemical, physical, biological, radiational, thermal or radiological or aesthetic properties of the air, land or water or which may, or is likely to make the air, land or water unclean, noxious or impure or injurious, disagreeable or detrimental to the health, safety, welfare or property of persons or harmful to biodiversity;

"Project" means any activity, plan, scheme, proposal or undertaking involving any change in the environment and includes;

(a) construction or use of buildings or other works;

(b) construction or use of roads or other transport systems;

(c) construction or operation of factories or other installations;

(d) mineral prospecting, mining, quarrying, stone-crushing, drilling and the like;

(e) any change of land use or water use; and

(f) alteration, expansion, repair, decommissioning or abandonment of existing buildings or other works, roads or other transport systems; factories or other installations;

"Regulations" means regulations made under Pakistan Environmental Protection Act 1997.

"Sewage" means liquid or semi-solid wastes and sludge from sanitary conveniences, kitchens, laundries, washing and similar activities and from any sewerage system or sewage disposal works.

"Standards" means qualitative and quantitative standards for discharge of effluents and wastes and for emission of air pollutants and noise either for general applicability or for a particular area, or from a particular production process, or for a particular product, and includes the National Environmental Quality Standards, emission standards and other standards established under Pakistan Environmental Protection Act 1997 and the rules and regulations.

"Waste" means any substance or object which has been, is being or is intended to be, discarded or disposed of, and includes liquid waste, solid waste, waste gases, suspended waste, industrial waste, agricultural waste, nuclear waste, municipal waste, hospital waste, used polyethylene bags and residues from the incineration of all types of waste.

Appendix-02

List of Abbreviation

BOR	Board of Revenue
BOD	Biochemical Oxygen Demand
CE	Chief Executive
Cl	Chloride
COD	Chemical Oxygen Demand
CSR	Corporate Social Responsibility
CCB	Citizen Community Board
ECH	Environmentally Controlled Housing
EMMP	Environmental Management & Monitoring program
EM	Environment Management
EA	Executing Agency
EIA	Environmental Impact Assessment
EPA	Environmental Protection Agency
EMP	Environmental Management Plan
GDFP	Good Dairy Farming Practice
GWT	Ground Water Table
HSE	Health & Safety Executive
HSE	Health, Safety & Environment
ILO	International Labour Organization
IMR	Ittefaq Metal Recycling
IPEM	Implementation Plan of Environmental Management
NGL	Natural Ground Level
NEQS	National Environmental and Quality Standard
NOC	No objection Certificate
O&M	Operation and Maintenance
PAPs	Project Affected Persons
PEQS	Punjab Environmental Quality Standards
PEPA	Punjab Environmental Protection Agency
PIRC	Project Implementation Review Committee
PPE	Personnel Protective Equipment
TDS	Total Dissolved Solids
TORs	Terms of References
TSS	Total Suspended Solids

Appendix-03 List of Individuals, common people consulted living near the project site M/S Ittefaq Metal Recycling Sher Rabbani, Industrial Estate, 14 Km Near Unifoam Factory, Multan Road, Lahore-Pakistan.

Sr.No	Interviewee Name	Designation/Occupation/Contact number	Remarks
1.	Fazal Musthaq	Occupation: Labour Contact# 0320-9175140	More job will be created
2.	Shabir Ahmed	Occupation: Labour Contact# 0305-4679516	More job will be created
3.	Sagar	Occupation: Labour Contact#0322-0401915	Chance of local employment.
4.	Sahal	Occupation: Shopkeeper Contact#	Chance of local employment.
5.	Khalid Mahmood	Occupation: Security Guard Contact# 0306-2375640	Our district economic condition will be improved.
6.	Saafullah	Occupation: Labour Contact#0306-4101731	Chance of local employment.
7.	Shazad Khan	Occupation: Supervisor Contact # 0348-1174736	Industrial practices will be improved.

Appendix-04

Source of Data and Reference Material

The findings and conclusions of the report are based on the analysis of the information collected during field visits in the project area and data collected through secondary sources, as well as relevant project documentation received from regulatory authorities such as Board of Revenue, and other Government Departments.

The IEE study is focused at developing the environmental profile of the project area so as to evaluate the (baseline data) existing conditions on physical and biological environment, and social environment together with the anticipated environmental impacts and proposed mitigation measures. Detailed assessment of the social and biological environment of the area was conducted through field survey of the project site.

Pakistan Environmental Protection Act (PEPA), 1997

EPA, 1997: *Guidelines for Public Consultation*. Pakistan Environmental Protection Agency, Government of Pakistan

EPA, 1997: *Guidelines for Sensitive and Critical Areas*. Pakistan Environmental Protection Agency, Government of Pakistan

- <https://www.epa.gov/sites/production/files/2015-10/documents/njmc-wpp-2.pdf>
- Schedule I of Punjab Environmental Protection Act 1997 (Amended 2012)
- Section 12 of Punjab Environmental Protection Act 1997 (Amended 2012)
- Pakistan Environmental protection act 1997
- Punjab Environmental Protection Act 1997 (Amended 2012)
- Guideline for the Environmental Assessment
- Regulations of Environmental Assessment, Regulations 2022
- National Conservation Strategy- Pakistan
- Guideline for the public consultation
- National Resettlement Policy and Ordinance
- National Environmental Quality Standards (Self-monitoring and reporting by the industry)
- Labor laws
- Canal and Drainage Act, 1873
- National Environmental Policy 2005.
- The Land Acquisition act, 1894
- The Punjab local Governmental ordinance, 2001.
- Meteorological data from meteorological department and website
- Pakistan Environmental agency (review of IEE/EIA) regulation 2022.
- Pakistan Environmental Protection ordinance (PEPO), 1983
- Pakistan Environmental Quality Standards (Self-monitoring and reporting by the industry)
- OSHAS ISO 45001:2018 for health and safety
- admin@funender.com
- Stanford
- Conserve Energy Future

Appendix-05 Terms of references of environmental reports and those given to individual specialist.

1. Background

The Executer of the entire unit Javed Ahmed Bhatti conducted high level feasibility studies on this Project. The study area is described as a Sher Rabbani, Industrial Estate, 14 Km Near Unifoam Factory, Multan Road, Lahore-Pakistan and the footprint of the proposed land is 04 Kanal 03 Marls.

In light of the above, Chief Executive Javed Ahmed Bhatti hire the services of environmental consultant Mr. Muhammad Akram Khan for conducting the Environmental Impact Assessment Report EIA process in terms of the Pakistan Environmental Protection Act 1997 in order to assess the impact of the proposed project and to obtain the required Environmental Approval in order to ensure that the project is environmentally sustainable.

2. Available information

The following information is available for consideration as part of the basic environmental impact assessment:

- 2.1 Site Plan and Layout Plan
- 2.2 Development Concept Plan for the entire area.
- 2.3 Delineation map
- 2.4 Land Use Scheme
- 2.5 Bio-diversity Map

The Consultant is hereby advised to obtain confirmation of all required specialist studies from the relevant departments.

3. Activities to be carried out (Scope of Services)

The scope of assessment and content of Environmental Impact Assessment (EIA) and environmental management plan shall be as per the IEE/EIA Regulations 2022. Activities to be carried out in terms of IEE/EIA Regulations 2022 will amongst others entail the following:

3.1 Scoping

- Undertake notification of interested parties
- Conduct Public Consultation and Participation
- Consult relevant authorities and experts
- Gather baseline information on environment
- Identify project alternatives
- Identify issues to be investigated and assessed
- Develop Plan of Study for EIA
- Gather comments from interested parties
- Obtain comments from interested
- Revise draft and submit final scoping report
- Make Final Scoping Report available to interested parties

3.2 Impact Assessment

- Investigate impacts (specialist studies)
- Assess impacts- determine significance
- Evaluate and compare project alternatives
- Consult relevant authorities and experts
- Determine and assess mitigation measures
- Compile Environmental Management Plan
- Provide Draft for interested parties to comment
- Revise Draft and submit Final EIA
- Make Final EIA available to interested parties
- Submit final EIA to the Punjab Environmental Protection Agency (PEPA)

4. Description of Activity

- Meeting with the client
- Authority Consultation
- Site visits
- Application for environmental approval
- Baseline data collection, Identification of key stakeholders
- Preparation of Plan of Study for EIA
- Compilation of Notices and distribution of notices
- Public Meeting & Consultation
- Travelling
- Baseline Investigations
- Incorporation of specialist studies
- Drafting of Report
- Revision and finalization of document
- Drafting Environmental Impact Assessment
- Compile Environmental Management Plan
- Finalization of the EIA Report
- Issuing of Approval
- Project Management

5. Deliverables

- NIC (Attested Copy).
- Schedule – IV form.
- Undertaking for PEPA.1997.
- Undertaking for no court case.
- Layout plan.
- EIA Reports.
- A bank draft of Rs: 30000/- in favor of DG EPA Punjab Lahore.
- Authority letter for corresponding with EPA.

Appendix-06 List of names, qualification and roles of team members carrying out the EIA Study.

List of names, qualifications and roles of team members carrying out EIA study.

S.No	Name	Designation/Qualification	Roles and Responsibilities
1.	Engr.M.Akram Khan	Environmental Consultant/ BSc Met Engg UET LHR BSc Elect Engg UET LHR Lead Editor Environmental Management System.	To frame all environmental related reports IEE/EIA etc. To train the Management staff, to perform the environmental monitoring functions during the construction and operation stage.
2.	Muhammad Ali	Environmental Manager/MBA.	Stakeholders and Public Consultation
3.	Muhammad Asim	Analyst/ B.Com.	Project Coordinator

Appendix-07

Approvals from other concerned departments are in process and will be submitted before operational phase.