

ENVIRONMENT IMPACT ASSESSMENT (EIA)
GIS GRID STATION AT SECTOR-T
(GOBINDPURA) PHASE-VII(OVERSEAS
ENCLEAVE),DHA LAHORE

REPORT SUBMITTED BY:

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EXECUTIVE SUMMARY

Title & Location of the project

Subject project for which this Environmental Impact Assessment (EIA) Study has been conducted is the proposed installation of 132 KV GIS Grid station along with allied transmission lines At Sector-T (Gobindpura_ Phase-VII(Overseas Enclave),DHA lahoreThe capacity of grid station is 25 MW.

Grid stations will transform voltage from high to low through Gas insulated substation to provide continuous power to the consumers.

Private permission for the construction of grid station and its allied transmission lines, grid lands already selected by site selection committee for Sector-T (Gobindpura_ Phase-VII(Overseas Enclave),DHA lahore the application for getting approval for grid statton from lesco has been submitted and and the proceeding letter of the same has been attached as Annexure-A)

Main equipment will include Cable bushing, Isolator, ES earthing switch, circuit breaker, current transformer, Gastight bushing, CC for PLC Equipment, Lighting arrestor, Power cables (15kv, 100mcm, with AJ Conductor), Power Transformer (Two Winding), Gas to air bushing, Earth fault relay, Distance Relay, Differential Relay, Ammeter, Volt meter, Power factor meter, VAR house meter and Kilo watt hour meter, 12 KV Bus Coupler, (132KV, 630qmm power cable with Copper Conductor)

The proposed project falls under Schedule II A (3) of Review of IEE and EIA Regulations, 2000. TORs of the study under clause 5 (f) of policy and procedure for the filing, review and approval of environmental assessment are annexed as **Annexure –B.**

Location

Subject proposed project is located at At Sector-T (Gobindpura) Phase-VII(Overseas Enclave),DHA lahore

North: Main Road

South: open plot

East: Open plot.

West: Open plot.

For further details, layout map of the project is attached with the report.







Name of the proponent

Name: Mr. kifayatullah paracha

Mailing Address: Sector-T (Gobindpura) Phase-VII(Overseas Enclave),DHA lahore

For further details CNIC of the proponent and other relevant documents are attached as

Annexure-C with this report.

Name of organization preparing the report:

Pak Green Enviro-Engineering (Pvt.) Ltd, as independent consultants, has been appointed by the proponent to conduct Environmental Impact Assessment Study.

Company office address: 46-M, Gulberg III, Lahore

Contact: 042-35441444, 0303-4442335.

For detail company profile see the *Chapter # 1 “Introduction”*

A brief outline of the proposal

Name of the project:	Installation of 132 KV GIS Grid Station
Location of the project:	Sector-T (Gobindpura) Phase-VII(Overseas Encleave),DHA lahore
Proposed Area:	Total area proposed for the subject project is 14 kanals
Nature of Project:	Nature of the project is proposed. At the time of visit, project site was an open plot and no constructional activities had been started at the project site.
Capacity of project:	25MW 132 KV
Cost of the project:	Total cost of the project will be approx. Rs.1325 million including transmission lines
Project process:	Grid stations will transform voltage from high to low through Gas insulated substation to provide continuous power to the consumers
Detail of Equipment (132KV GIS Grid Station)	Main equipment will include wave trap, switch gear, isolator, Lighting arrestor, circuit breakers, insulators, protective relays, switchyards, interconnecting transmission lines, autotransformers, switching stations, and step-down transformers.
Labor/ Workforce:	During construction: 10-15 (estimated) During Operation: 15-20(estimated)
Water Requirement:	During the constructional phase of the project approximately 300-gallon water will be required per day for constructional and domestic uses. During the operational phase of the project approx. 1400 Liters/day water will be required for domestic purposes.
Solid waste:	Approx. 600-800 kg/day constructional and domestic waste will be produced during the constructional phase of the project. During operation: 9-10 kg/day domestic. At the time of maintenance project waste will be generated, which will be handed over to contractors.

Objectives of the project:



Objectives of the construction of the subject project are:

- Assess the existing environmental conditions in the project area, including the identification of environmentally sensitive areas and receptors;
- Assess the various activities (such as construction, process, operational etc.) to identify their potential impacts on environment, evaluate these impacts, and determine their significance;
- Propose appropriate mitigation measures that can be incorporated into the design of the proposed activities to minimize damaging effects or lasting negative consequences identified by the environmental assessment;
- Assess the proposed activities and determine whether they comply with the relevant environmental regulations in Pakistan;
- Prepare an EIA report for submittal to the Environmental Protection Agency (EPA), Punjab.

The major impacts

In order to identify all the activities associated with the project during construction and operation phase with potential to cause adverse environmental impacts and harm a thorough review has been conducted. Project will not have any 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. Moreover, area for plantation is also reserved for air purification within the project vicinity.

Recommended mitigation measures

Major impacts recommended mitigation measures along with their proposed monitoring schedule.



Table: Summary of Environmental and social impacts of the project during the construction phase and mitigation measures suggested:

Table: Summary of Environmental impacts of the project their mitigation measures:

suggested:

<u>Aspect</u>	<u>Impact</u>	<u>Mitigation</u>	<u>Monitoring parameters</u>	<u>Location</u>	<u>Monitoring</u>	<u>Frequency monitoring</u>	<u>Responsibility</u>
Construction phase							
Air	Health affects Reduced visibility on roads	Sprinkling of water Tuning of construction vehicles & machines Dust masks for laborers	Particulate Matter Smoke CO, Sox	All project locations	Vehicular emissions Dust Ambient air quality	Monthly for emissions and daily for dust	HSE Manager/ Proponent
Noise	Stress Hypertension Hearing loss Headache	Avoid working at night Lubrication of construction vehicles Provision of Ear plugs	Noise levels	Project location close to residential areas	Noise monitoring device		HSE Manager/ Proponent

Land & Soil	Erosion due to excavation Formation of pits due to improper backfilling	Proper backfilling and stone pitching around the excavated site if required	Surface topography	All project locations	Visual assessment Photographic evidences	From beginning till completion of project	HSE Manager/ Proponent
Vegetation	Cutting of trees	Avoid unnecessary cutting of trees In case of cutting of trees, one plant should be replaced by 6 plants	No of trees cleared or cut Disposal of chopped trees Ensure replantation by 1:6 ratio of same species	All project locations	Visual assessment Photographic evidences	From beginning till operational phase	HSE Manager/ Proponent
Water	Wastage and misuse of water	Avoid unnecessary use of water Prevent leakages	Water supply and use	All project locations	All project locations	From beginning till the end of project	HSE Manager/ Proponent
Construction debris	Formation of heaps Remaining concrete material results in	Avoid wastage of concrete material Reuse remaining construction material	Quantity & quality of construction material	All trenching areas	Visual assessment Photographic evidence	Weekly	HSE Manager/ Proponent

	hardening of ground surface						
Social Environment	Disturbance to routine market and local business activities Conflicts between laborers and local communities	Specify time scale for construction activities Discussion with local people regarding conflicts if any	Maintenance of complaint register	All project locations	Review of complaint register Local consultations	Monthly	HSE Manager/ Proponent
Roads and networks	Traffic congestion Night time visibility of drivers is reduced	Diversion routes must be allocated to maintain traffic flow Signs and reflectors must be boarded for driver's visibility	Signs and detours are being followed	Intersections of diversions	Observations Local residents consultations and log book	Weekly	HSE Manager/ Proponent
Health and safety	Lack of awareness to general public about safety may lead to accidents Incompetent and untrained workers	Safety symbols and instructions will be boarded at work sites Trained personnel will be appointed for the specific work	Safety precautions	On all project sites	Tool box talk Visual assessments Record of PPEs	Daily	HSE Manager/ Proponent

	might cause harm to themselves and others. Construction works may include many risks and hazards that may lead to injuries or even death	Appropriate PPEs must be used for technical work	Use of PPEs				
Operational Phase							
Electric Magnetic Field (EMF)	Human health impacts such as, neuropsychological disorders or cardiovascular diseases	Increase depth of cables to suppress the EMF levels Appropriate cabling with protective shields to suppress electron flux	EMF Intensity	Residency units near the corridor and grids	Electromagnetic meter	Biannually	HSE Manager/ Proponent
Transformer oil spillage	Contamination of soil and water bodies	Regular checking of storage tanks and machines	Soil sampling for oil and grease	Grid station	Visual assessment Soil analysis Equipment maintenance record	Bi annually	HSE Manager/ Proponent

Proposed Environmental Monitoring

For the effective implementation and management of the mitigation measures, an environmental management plan has been prepared. The EMP satisfies the requirement of Pakistan Environmental Protection Act. The EMP outlines the aims and objectives, defines the responsibilities of the project owners and contractors and lays down the required communication, reporting procedures and mechanism through which the proposed measures will be monitored.

Environmental impact of a project is worked out using various factors and parameters, so that an Environmental Management Plan can be evolved to take mitigation measures, wherever these might be considered necessary in order of appropriateness of elimination, reduction and compensation as the goals. The development of the EMP is to make some person responsible for implementing the mitigation measures as identified so that smooth implementation of the mitigation measures can be assured. Monitoring plans have also been included to ensure the compliance of the EMP by

contractors and other responsible authorities.

Environmental management approach for the project has been presented for the design, construction and operation phase and to mitigate the adverse impacts during the design, construction and operation phase essential mitigation measures have been recommended and for their sound implementation an Environmental Management Plan (EMPs) has been framed out.

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:

- Ambient Air

Monitoring for ambient air should be conducted on quarterly basis during constructional phase of the project and report should be submitted to EPA Punjab.

- Noise

Regular monitoring for noise level should be maintained periodically during construction and operation phases of the project and report should be submitted to EPA Punjab.



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- Water quality

Regular monitoring of water quality should be conducted on quarterly basis during construction and operation phases of the project and report should be submitted to EPA Punjab. Record should be maintained regarding the underground water pump and consumption.

Recommendation: Environmental Monitoring data log book should be maintained by the project proponent.

Sr. No.	Impact	Project activity	Monitoring Mechanism	Frequency	Monitoring Authority
Construction and Operational Phase					
1.	Air emissions and dust	Air quality will deteriorate due to transportation and construction activities	Monitoring for the air quality as per PEQS, 2016	Quarterly	Proponent/ Contractor
2.	Water pollution	Water quality will deteriorate due to construction and operational activities	Monitoring for waste water & drinking water quality as per EPA PEQS, 2016.	Quarterly	Proponent/ Contractor
3.	Noise pollution	Construction activities, utilities and transportation activities	Monitoring for noise level as per PEQS, 2016	Quarterly	Proponent/ Contractor



CHAPTER # 1 INTRODUCTION

This Section of the report provides an overview of the rational of the Project, objective of project, requirement of the project, purpose of the report and approach adopted to conduct the Environmental Impact Assessment Study.

Purpose of the report

Environmental Impact Assessment (EIA) report is being submitted to the Environmental Protection Agency (EPA), Government of the Punjab, Lahore for the compliance of Section 12 of Punjab Environment Protection Act-1997 (Amended 2012) for obtaining No Objection Certificate (NOC) before starting the construction activity at the project site. The other relevant regulations and guidelines considered while preparing this EIA report include:

- Policy and procedures for filing, review and approval of environmental assessments.
- Guidelines for the preparation and review of environmental reports.
- Guidelines for public participation.
- Guidelines for sensitive and critical areas.
- Detailed sectorial guidelines

Various aspects like environmental, social, physical and other aspects of the project both during construction and its regular occupancy are highlighted in this EIA report. Measures necessary to be adopted to mitigate any environmental impacts on any part of the environment around are also described. All the important information is also provided as described under the format used to help decision makers, EPA Punjab in the present case, before issuing the desired Environmental Approval.

Identification of the project and proponent

Subject project for which this Environmental Impact Assessment (EIA) Study has been conducted for the proposed installation of 132 KV GIS Grid Station and other pre-requisite at Sector-T (Gobindpura) Phase-VII(Overseas Encleave),DHA lahore

Proponent:

Name: Mr. kifayatullah Paracha

Mailing Address: Sector-T (Gobindpura) Phase-VII(Overseas Encleave),DHA lahore

For further details CNIC of the proponent and other relevant documents are attached as **Annexure-C** with this report.

Details of Consultant



Pak Green Enviro Engineering (Pvt) Limited

Pak Green Enviro-Engineering (Pvt.) Ltd is an independent company, who conducts IEE, EIA, EMP and other environmental investigations through its panel of environmental consultants, public participation practitioners and experienced environmental managers. The company has its own recommended instruments to check the baseline environmental data/PEQS and lab analysis facility for water, waste water priority parameters.

Contact: Pak Green Enviro-Engineering (Pvt.) Ltd.

Office No. 46-M, Gullberg III, Lahore

Tel: 042-35441444, 03034442335

Email: info@pakgreen.pk; pak.green@hotmail.com

The current study was carried out by the following professionals:

Sr. No.	Designation	Name/Qualification
1	Chief Environmentalist/ Lead Environmental Professional	Abdul Hafeez Nasir
2	Senior Environment professional	Mian Iftikhar Ahmad
3	Environmental professional	Iqra Zahid

Brief description of Nature, Size and Location of Project

Subject project is installation of 132 KV GIS grid station at Sector-T (Gobindpura) Phase-VII(Overseas Enclave),DHA lahoreGrid stations will transform voltage from high to low through Gas insulated substation to provide continuous power to the consumers. Private



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permission for the construction of grid station and its allied transmission lines, grid lands already selected by site selection committee for Sector-T (Gobindpura) Phase-VII(Overseas Encleave),DHA lahorethrough PEC approved contractors as requested by DHA through letter #408/10/E/WAPDA/GRID Station Dated: 26-10-2018 has been approved by LESCO. (Copy of letter attached as Annexure-E)

Location of the Project:

Subject proposed project is located at Sector-T (Gobindpura) Phase-VII(Overseas Encleave),DHA lahoreland coordinates are as follows:

North: Main Road

South: Industrial Unit

East: Open plot.

West: Open plot.

For further details, layout map of the project is attached as **Annexure-D** with the report.

SIZE:

Total Cost of project is approximately Million PKR including land cost 5 Million, infrastructure cost 15 Million PKR approx.. and machinery cost 1325 including transmission lines Million PKR approx.

DHA has planned provision of the basic facilities/utilities for the project. Provision of necessities including access routes and infrastructure for provision of telecommunication services will be developed to meet the future demand. Adequate open space is planned to be provided for developing green belts and area of plantation.





1.6 METHODOLOGY FOR ENVIRONMENTAL IMPACT ASSESSMENT (EIA)

This Environmental Impact Assessment is based on methodology provided in the EPA notified guidelines for preparation of EIA report. Initially the baseline of the project area was developed by gathering secondary data, records and information on existing physical and social, and ecological environment. The primary data for the purpose of this EIA report was generated through monitoring and laboratory testing of environmental parameters. The changes expected in the critical environmental aspects e.g. in the parameters like ambient air, noise, socioeconomic indicators that may be significant with a positive or negative attribution were identified. Subsequent mitigation, management and monitoring measures have been drafted accordingly. This EIA report presents the existing baseline situation and the environmental aspects involving Eco environmental waste management's current infrastructure for the proposed venture. The EIA study has adopted the following methodology for report compilation:

1.6.1 LITERATURE REVIEW/BASELINE

Existing publications and previous IEE/EIA reports with relevance to the proposed project were studied. In addition, the legislative framework governing the process of EIA and environmental approval were reviewed to ensure that all the parameters are met.

1.6.2 SITE VISITS

This study is based on the finding of the field visits conducted by the team of ESCS. Team members visited the location and neighborhood to perform reconnaissance survey and to gather primary baseline information with reference to environmental and social aspects. Site visits have been done with respect to environmental as well as social aspect evaluation. Questionnaires were distributed among the general public to obtain their view point regarding the proposed project.

1.6.3 PROJECT SPECIFIC DATA

The information related to the project and its infrastructure has been provided by the proponent.

1.6.4 IMPACT IDENTIFICATION AND ASSESSMENT

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A categorical assessment of environmental impacts associated with the proposed project with respect to environment and socioeconomic and ecological aspects has been conducted.

1.6.5 MITIGATION MEASURES AND EMMP

Impact assessment has been supplemented by the incorporating mitigation measures to lessen severity of impacts and to manage different activities within the outline of environmental management and monitoring plan. The EMMP is provided to facilitate the proponent in establishing an environmental conscious system that supports conservation at all levels of its construction and operation.

Screening

Screening is an essential part of an EIA process. Screening often results in a categorization of the project and from this a decision is made on whether or not a full EIA is to be carried out. The EPA Punjab has provided a layout for the screening process. Under the Regulations for Review of IEE/EIA, 2000, the EPA Punjab has provided Schedule I and II which categorize projects into IEE and EIA. for this proposed project falls under Schedule II A (3) of Review of IEE and EIA Regulations, 2000.

Scoping

Introduction:

Scoping is the stage in EIA at which issues, impacts and preliminary alternatives are determined that should be addressed at subsequent stages. It directly follows the screening stage and is a systematic exercise that establishes the boundaries and Terms of Reference (TOR's) for the EIA. A quality scoping study reduces the risk of including inappropriate components or excluding components which should be addressed. While scoping has been defined by many different terms, the definition adopted in recent guidance on project EIA, developed for the European Commission, sets out its meaning in its broadest sense as follows: "Scoping is the process of determining the content and extent of the matters which should be covered in the environmental information to be submitted to a competent authority for projects which are subject to EIA/IEE."

GUIDING PRINCIPLES FOR CARRYING OUT THE SCOPING STAGE

The guiding principle for the proposed scoping stage is the emphasis on anticipated environmental impacts and affected people. The scoping session was initiated at the EIA

planning stage to include all relevant stakeholders in the study. This helped in defining the boundaries for field assessment of environmental and social parameters.

OBJECTIVES

- The key objectives of this scoping are to:
- Inform the public about the proposed project
- Identify main stakeholders and their concerns and values
- Define reasonable and practical alternatives to be addressed
- Focus the important issues and significant impacts to be addressed in the EIA report
- Define the boundaries in time, space and subject matter
- Set requirements for the collection of baseline and other information
- Establish the Terms of Reference (TOR's) for the EIA study

LEGISLATION AND GUIDELINES DECIDED TO BE FOLLOWED FOR THE EIA/IEE

EPA Punjab has established laws and regulations for environmental assessment studied. These legislations include:

- Punjab Environmental Protection Act, 1997 (Amended 2012)
- Punjab Environmental Quality Standards 2016

In addition to the legislative framework, there are certain guidelines notified by the Pakistan Environmental Protection Agency which provide a standard course of actions to be pursued during such studies. These guidelines are:

- Guidelines for the Preparation and Review of Environmental Reports
- Guidelines for Public Consultation
- Environmental, Health, and Safety General Guidelines of the World Bank Group.

➤ **EIA REPORT CONTENT**

- The content of the EIA report for the proposed project will be as according:
- Introduction
- Description of the Project
- Consideration of Alternatives
- Description of the Environment
- Involvement of Stakeholder/ Public Consultation
- Screening of Potential Environmental Impacts and Mitigation Measures
- Environmental Management and Monitoring Plan
- Conclusions
-
- **BASELINE ENVIRONMENTAL INFORMATION THAT WOULD BE INCLUDED IN THE EIA/IEE REPORT**

- **Physical Resources:**
 - atmosphere (e.g. air quality and climate)
 - topography and soils
 - surface water
 - groundwater
 - geology / seismology
 - Ecological Resources
 - fisheries
 - aquatic biology
 - wildlife
 - forests
 - rare or endangered species
 - protected areas
 - Economic Development
 - industries

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infrastructure facilities (e.g. water supply, sewerage, flood control)
transportation (e.g. roads, harbors, airports, and navigation)
land use (e.g. dedicated area uses)
power sources and transmission
agricultural development
mineral development
tourism facilities
Social and Cultural Resources
population and communities (e.g. numbers, locations, composition, employment)



health facilities

education facilities

socio-economic conditions (e.g. community structure, family structure, social wellbeing)

physical or cultural heritage

current use of lands and resources for traditional purposes by Indigenous Peoples

Structures or sites that are of historical, archaeological, paleontological, or architectural significance.

The proposed EIA will use checklist and matrices for impact identification during construction and operational phases. The impacts due to design and location of the project will also be assessed for the proposed project. Laboratory testing will be done to obtain information on the baseline environmental parameters.



CHAPTER # 2

ALTERNATIVE CONSIDERATIONS

Site 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.

Obviously, environmentally sound, neat and clean environment are the other considerations for site selection. The project will also facilitate the people of the area with increasing the opportunity of employment, and other related facilities.

Keeping these requirements and their feasibility and other basic infrastructural requirements, the selected site is ideally suited for Construction of the subject grid station of 132KV along with allied transmission lines.

map

Rejected Site A

Project proponent is going to construct a grid station for DHA no other site will be prefer for this project already specific site is consider SHA Phase VII where grid station will be install to meet the electricity requirement for DHA people

Selected **site** Subject project site for the establishment of Grid Station is located within the boundary of Sector-T (Gobindpura) Phase-VII(Overseas Enclave),DHA Lahore





map

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.

Environmental alternative

Construction of this project this area will have minimal impact on the daily life people living in housing scheme. The project proponent is recommended to make sure that there is no oil spillage or any environmental impact is caused during the project operations. The Proponent will make sure all the operations will be according to EMP recommendations.

Economic Alternatives

This grid station will distribute electricity to the people of at Sector-T (Gobindpura_ Phase-VII(Overseas Enclave),DHA lahoremeeting the demand of power for the domestic and commercial purpose. Installation of grid station will provide continuous supply of electricity It will be a source of job opportunities to local population.



CHAPTER # 3

DESCRIPTION OF THE PROJECT

Electric power transmission is the bulk transfer of electrical energy between the point of generation and multiple substations near a populated area or load center. Electric power transmission allows distant energy sources to be connected to consumers in population centers. Transmission may be via overhead or underground lines, however, most transmission is done with overhead lines because they are less costly to construct and easier to maintain. Underground lines are generally restricted to urban areas.

A power transmission network is referred to as a “grid.” Multiple redundant lines between points on the grid are provided so that there are a variety of routes from any power plant to any load center. The specific routing of electricity on the grid at any time is based on the economics of the transmission path and the cost of power.

Type and Category of the Project:

Subject project is proposed installation of 132 KV GIS Grid Station Sector-T (Gobindpura) Phase-VII(Overseas Enclave),DHA lahore Permission for the construction of grid station and its allied transmission lines, grid lands already selected by site selection committee and permission from LESCO has already been secured which is attached herewith for your ready reference.

Project falls under of Schedule II A (3) of Review of IEE and EIA Regulations, 2000. TORs of the study under clause 5 (f) of policy and procedure for the filing, review and approval of environmental assessment are annexed

Objectives of the Project

Objectives of the construction of the subject project are:

- Assess the existing environmental conditions in the project area, including the identification of environmentally sensitive areas and receptors;
- Assess the various activities (such as construction, process, operational etc.) to identify their potential impacts on environment, evaluate these impacts, and determine their significance;



- Propose appropriate mitigation measures that can be incorporated into the design of the proposed activities to minimize damaging effects or lasting negative consequences identified by the environmental assessment;
- Assess the proposed activities and determine whether they comply with the relevant environmental regulations in Pakistan;
- Prepare an EIA report for submittal to the Environmental Protection Agency (EPA), Punjab.

Location and site layout of the project:

Subject proposed project is located at Sector-T (Gobindpura) Phase-VII(Overseas Encleave),DHA lahore

Project land coordinates are as follows:

North: Road

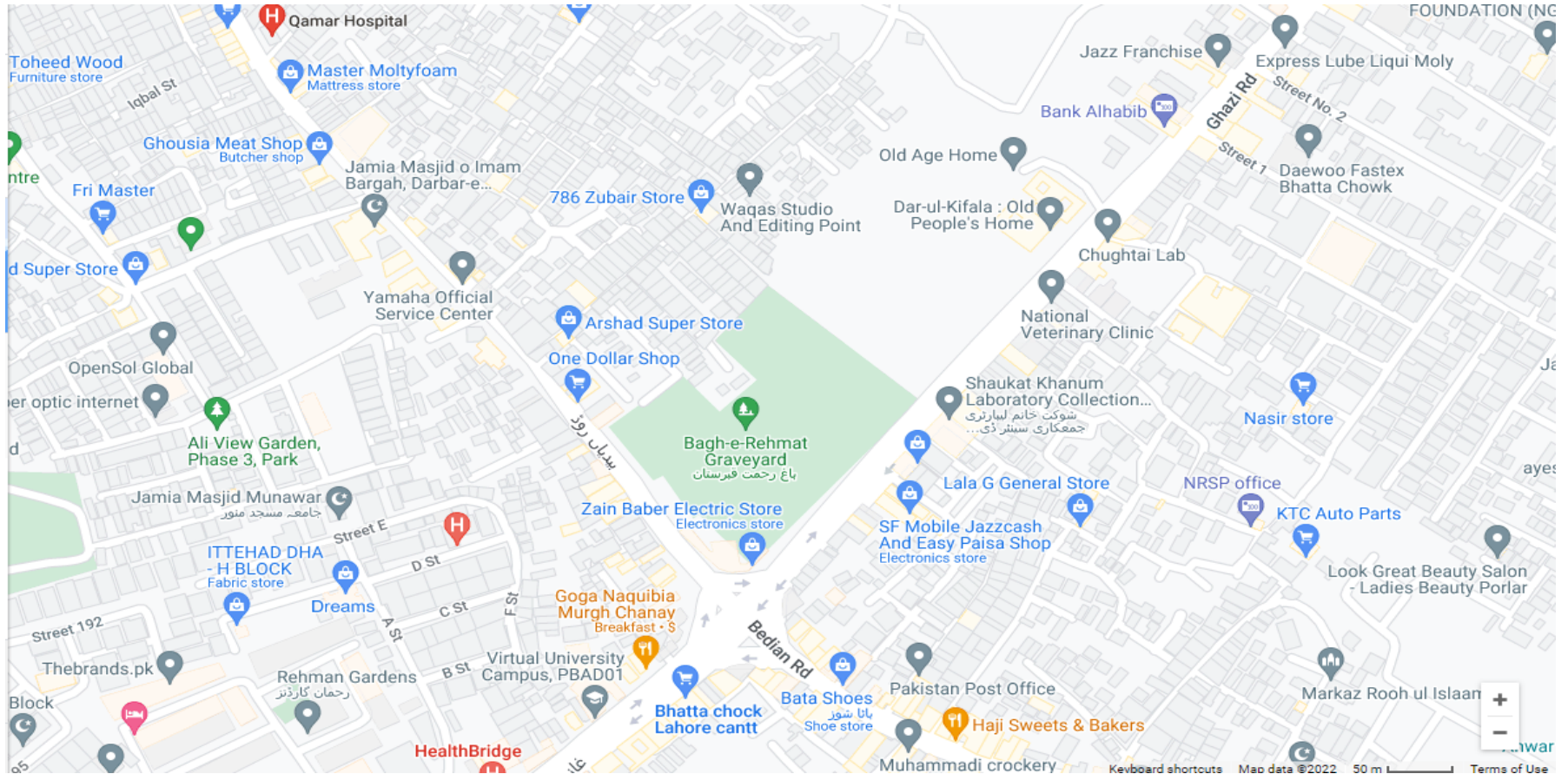
South: Open plots

East: Open Plot +Link Road.

West: Open plots.

For further details, layout map of the project is attached as **Annexure-D** with the report.







Land Use on site

Site proposed for the installation of the subject project is the property of the DHA.

Road Access

Link road at the front side of the project area is present which connects to the main Road

Vegetation Features of the Project

Land proposed for the subject project is clear and free of dense vegetation.

Cost and magnitude of the operation

Subject project is the proposed installation of 132 KV GIS Grid station. Total area proposed for the installation of the subject project is 14 kanal. Total cost of the project is 1325 million including transmission lines. There are no other associated activities with regard to the subject project.

Schedule of Implementation

Detailed feasibility studies and designing of the project have been completed. Necessary legal, administrative and financial formalities are being finalized. The project is expected to be completed within 06-07 months from the date of environmental approval. Subsequently the operational and maintenance aspects of the project will be undertaken by the proponent.

Process Description

Grid station

A Grid station is part of an electrical generation, transmission, and distribution system. Grid stations transform voltage from high to low, or the reverse, or perform as a buffer to provide continuous power to the consumers even if there is a shortfall of power from the source. Electric power may flow through several grid stations between generating plant and consumer, and its voltage may change in several steps. A substation may include transformers to change voltage levels between high transmission voltages and lower distribution voltages, or at the interconnection of two different transmission voltages.

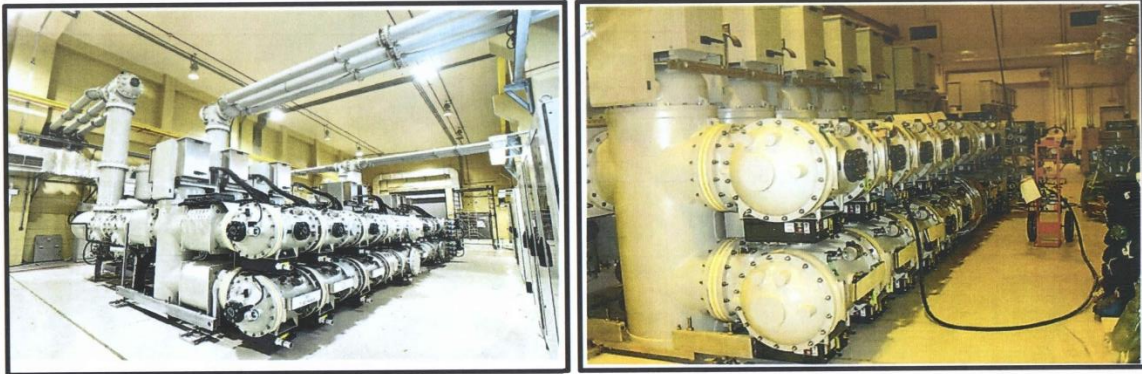
Grid stations depend upon its switchgear which can be of two types Gas Insulated or Air Insulated. For this project Gas Insulated Substation is proposed to be installed.

Gas Insulated Substation (GIS)



GIS are much more reliable, compact and maintenance free. Because of compactness of equipment, a very small area of land and civil work is required resulting in substantial savings and makes GIS compatible with AIS at higher voltages. They are at present mostly used in space constraint areas. Each individual item of switchgear is metal enclosed which is at earth potential.

GIS (GAS INSULATED GRID STATION)



Following are some points to explain the importance of GIS:

1. Low area requirement:

Extra High Voltage (EHV) models, for example, take only fraction of the space required as compared to conventional.

2- Environmental adaptability:

GIS is suitable for installation almost anywhere: in or out of doors, even underground; near the sea, in mountainous areas, in regions with heavy snowfall, etc.

3- High margin safety:

The high voltage conductors are securely enclosed in grounded metal.

4- High reliability:

The chemically inert enveloping the conductors and insulators preserves them for years of trouble-free operation.

5- Long maintenance intervals:



Insulation arc-quenching properties reduce contact wear. Technological advancements over the years have seen GIS continues to grow smaller and lighter

6- Low Maintenance Cost:

GIS are highly reliable and maintenance free. No inspection is required before ten years.

7- Long Life:

The operating life of GIS is 40 to 50 years compared to 25 to 30 years of conventional outdoor grid stations.

8- Personnel Safety:

GIS causes no risk of injury to operating personnel.

9- Short Circuits by Wildlife:

Fully encapsulated enclosures reduce risk of outages caused by lizards and vandalism.

10- Unbeatable Performance:

Factory assembled, and tested unit's offers unbeatable performance in terms of reliability and continuity of power supply.

11-Unaffected by Environmental Conditions:

GIS is unaffected by environmental factors. It is most suitable for harsh environmental conditions i.e., where humid, saline, polluted atmosphere laden with industrial exhausts prevails.

GIS Comprise the Following Main Equipment

Cable bushing, 145 KV Voltage Trans., Isolator, ES Earthing switch, circuit breaker, current transformer, Gastight bushing, CC for PLC Equipment, Lighting arrestor, Power cables (15kv, 100mcm, with AJ Conductor), Power Transformer (Two Winding), Gas to air bushing, Earth fault relay, Distance Relay, Differential Relay, Ammeter, Volt meter, Power factor meter, VAR house meter and Kilo watt hour meter, 12 KV Bus Coupler, (132KV, 630qmm power cable with Copper Conductor).

Life Cycle Assessment and maintenance of Grid station:



- ✚ Long maintenance intervals. Insulation arc-quenching properties reduce contact wear. Technological advancements over the years have seen GIS continues to grow smaller and lighter.
- ✚ Low Maintenance Cost: GIS are highly reliable and maintenance free. No inspection is required before ten years.
- ✚ Long Life: The operating life of GIS is 40 to 50 years compared to 25 to 30 years of conventional outdoor grid stations.
- ✚ Personnel Safety: GIS causes no risk of injury to operating personnel.
- ✚ Unaffected by Environmental Conditions: GIS is unaffected by environmental factors. It is most suitable for harsh environmental conditions i.e. where humid, saline, polluted atmosphere laden with industrial exhausts prevails.

Bird Deterrent/Repellent from Grid Station:

Visual Scares and predator decoys, scare balloons, flash tape will be used as bird deterrent to avoid their collision with transmission lines. Pictorial view of all these deterrents is as follow:



Figure 1 Visual scares & predator decoys



Figure 2 Bird Spikes



Reflect-a-Bird™ Bird Deterrent

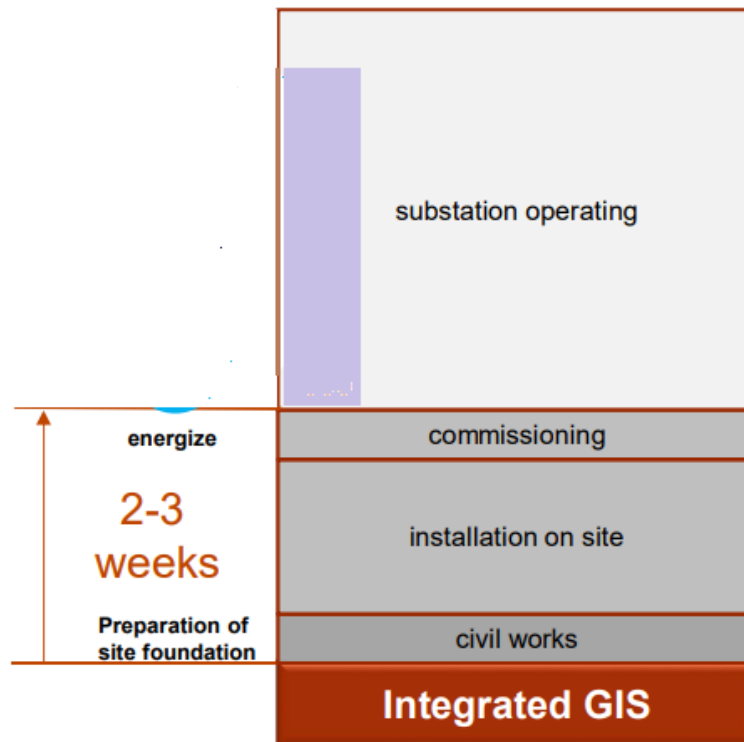


Bird-B-Gone Scare Balloon



Bird-B-Gone Flash Tape 1" x 50' (3pk)

Process Flow chart of subject project:



Land Use on site

Site proposed for the installation of the subject project is an empty plot free of any activity and it is the property of the proponent. Nature of area is residential.

Road Access

Link road at the front side of the project area is present which connects to the road.

Vegetation Features of the Project

Land proposed for the subject project is clear and free of dense vegetation; only shrubs like Parthenium, *grasses* are present over there in scattered quantity.

Cost and magnitude of the operation

Subject project is the proposed installation of 132 KV GIS Grid station along with allied transmission lines at. Total area proposed for the installation of the subject project is 14 Kanal. Total cost of the project will be approx. 508 million rupees. There are no other associated activities with regard to the subject project.

Schedule of Implementation



Detailed feasibility studies and designing of the project have been completed. Necessary legal, administrative and financial formalities are being finalized. The project is expected to be completed within 06-07 months from the date of environmental approval. Subsequently the operational and maintenance aspects of the project will be undertaken by the proponent.

Water requirements:

During the constructional phase of the project approximately 1500-gallon water will be required per day for constructional and domestic uses.

During the operational phase of the project approx. 1400 liters /day water will be required for domestic purposes.



Waste water treatment:

60-70% of the used water will be the waste water which will be treated in the septic tanks.

Solid waste:

Approx. 600-800 kg/day constructional and domestic waste will be produced during the constructional phase of the project. Constructional waste will be reused for road filling and maintenance purposes.

According to an estimate, approx. 9-10 kg/day domestic (based on solid waste generation rates of 0.45 kg/capita/day urban waste generation) which will be handed over to the certified contractors. Project related waste will not be generated as the subject project is Grid station.

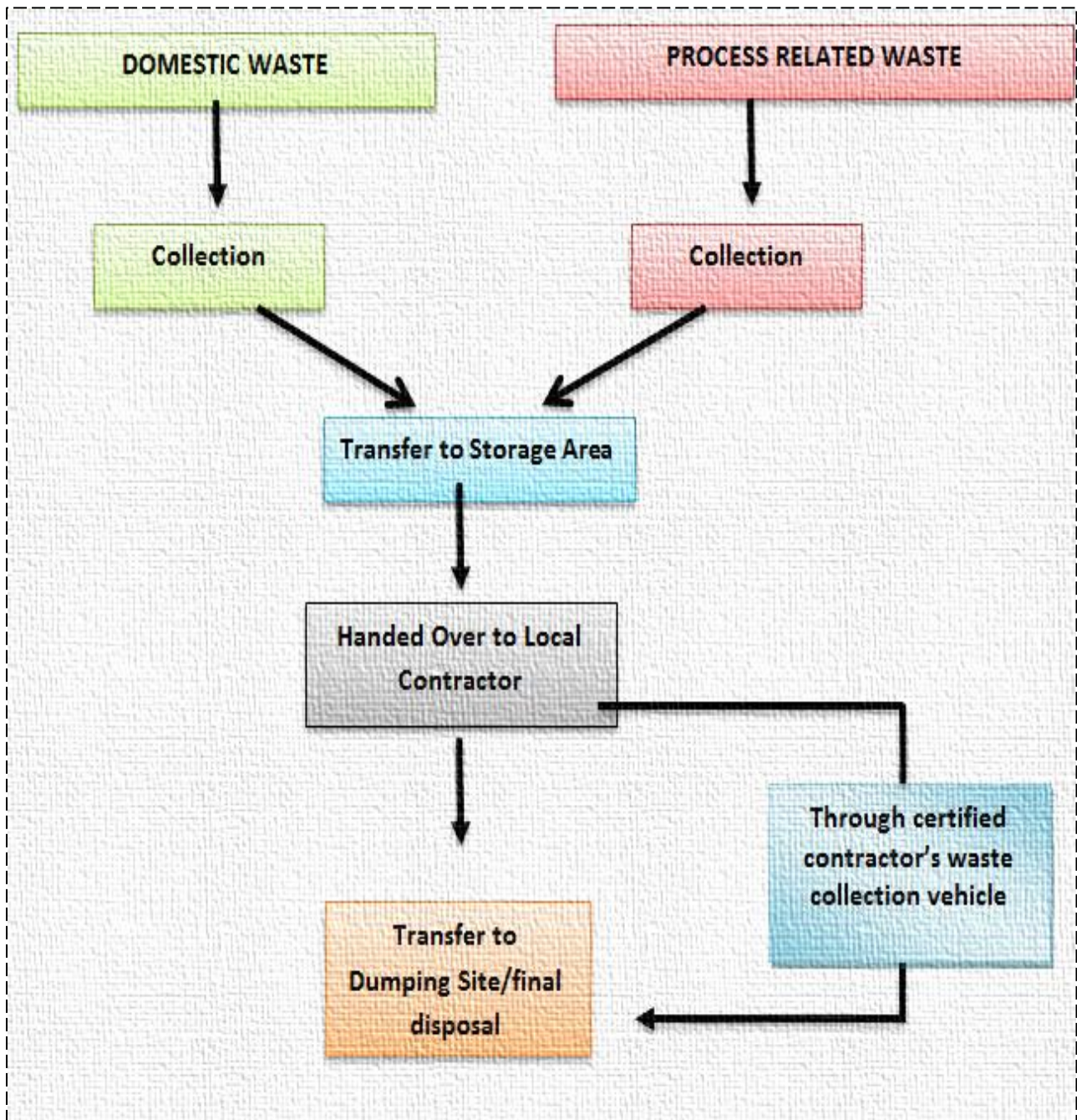
Solid waste management system/practices

The Solid waste will be managed in proper way by following operations:

1. Placement of separate waste bins for domestic and project related waste in all designated points.
2. Collection of waste from all the offices at one designated point by the sanitary workers on daily basis.
3. Careful collection of sludge on regular basis and temporary storage at designated point.
4. Collection of waste from designated area and handling to the solid waste contractors for its final disposal.



Flow chart of solid waste management plan:



Mitigation measures to control the emissions of generators:

- i) Firstly, the generator made up of latest and environmental friendly technology will be used.
- ii) Standard fuel will be used in the generator.
- iii) Proper and regular tuning of the generator will be done.
- iv) Double glazed glass and thick walls canopy of the generators will be installed which will limit the emissions of the noise.

All these measures will ensure the PEQS compliance of generators and emissions will not exceed the limits.

Plantation

Area for plantation will be reserved within the premises of the project and planation will be done within, outside and at the boundary wall of the unit. Tree plantation plan proposed for the subject project is attached as **Annexure-F** with the report.

Parking Area

Parking area will be made available within the unit for cars, motorcycles, trucks etc.

Occupational Health and Safety:

All the methods and procedures for machinery and chemical handling and storage will be displayed and implemented at the project site.

Personal Protective Equipment:

Following PPEs will be available for the workers in the installation of proposed unit:

- Dust Mask
- Ear Plugs
- Ear muffs
- Safety Boots



- Safety Gloves
- Safety Belt
- Helmet
- Goggles
- **Types of PPEs used during construction and Operational activities**
-

Protection	Occupational Hazards	PPEs
Head Protection	Falling objects, inadequate height clearance, and overhead power cords	Helmets with or without electrical protection
Hand protection	Hazardous material, cuts or lacerations, vibrations, extreme temperatures	Synthetic or Rubber gloves, leather, insulating material etc.
Eye and face protection	Flying particles, molten metal, liquid chemicals, gases or vapors, light radiation	Glasses, shield protective, etc.
Hearing protection	Noise, ultra sound	Hearing protectors like ear plugs, ear muffs
Respiratory protection	Dust, fogs, fumes, gases, smokes, vapors, oxygen deficiency	Facemasks or air supply
Body protection	Extreme temperatures, hazardous materials, biological agents, cutting and laceration	Aprons, insulating clothing etc. of appropriate materials

Security

The present site will be secured by means of boundary walls along with the presence of security guards round the clock which will improve the security of the project site and also in its vicinity.

Restoration / Rehabilitation Plan

All possible precautions will be taken to prevent an untoward incident in terms of life and property losses. The demolition materials will possibly be reused and recycled. All excavated surfaces will be termite proofed.



On completion of the project, the debris will be removed from the site in order to maintain aesthetics of the project. All measures will be undertaken for ensuring occupational safety, security and clean environment in the project area. Ornamental trees and flower plants will be planted on inside peripheral of the unit premises to restore the land.

Government approvals required by the project

All the approvals will be obtained by the project proponent and will be submitted to EPA at the time of operation.



CHAPTER # 4

DESCRIPTION OF ENVIRONMENT

4.1 GENERAL

An environmental baseline study is intended to establish a database against which potential project impacts can be predicted and managed later. The EIA of the proposed project covers a comprehensive description of the project area, including the resources which are expected to be affected by the project, as well as, those which are not expected to be directly affected by the construction and operation of the project. The existing environmental conditions around the proposed project have been considered with respect to physical, biological and socio-economic aspects. Site visits were conducted to survey the field area and to collect environmental data on physical, biological and socio-economic parameters. Consultations were held with the general public and stakeholders of the project area in order to seek the public opinion on the implementation of the proposed project.

STUDY PARAMETERS

The existing information to establish a database for the EIA of the project was collected from different government departments; review of previous studies and through the site visits carried out in the project area. The Social Assessment of the project area was conducted through consultation with the community by interviewing them. Assessment of the area has been carried out distinguishing it into:

STUDY AREA

An area about half a kilometer radius around the project has been considered as influence zone and it has been taken as Study Area (SA) to collect the primary data related to physical, ecological and socio-economic environment.

PROJECT AREA

The boundary of that specific area where the project has been established is taken as Project Area.

Physical Environment/ Resources



Topography:

The second largest province of Pakistan is Punjab comprising 205,344 km² area, next to Baluchistan and is located between latitudes 27.42° and 34.02° N and longitudes 69.81° and 75.23° E, at the northwestern edge of the geological Indian plate in South Asia. Punjab, etymologically it is the land of five rivers namely the Sutlej, Ravi, Chenab, Jhelum and the Indus (Govt. of Punjab, 1994). Four out of these five rivers are the tributaries of the Mighty Indus River. The province comprises fertile river valleys, while sparse sandy deserts are found as extensions of Rajasthan desert (India) and the Sulaiman Range (Pakistan), including the Cholistan and Thal deserts. The Indus River and its tributaries pass through the Punjab from North to South. The landscape is largely irrigated with a network of canals all over the province. Intensity of the weather is noticeable from hot and infertile southern region to cool Himalayan Mountains in the North. The variation in temperature and rain fall occur throughout the year, however, the temperature hardly exceeds the limit of 46°C according to metrological records. All soil types, i.e., sandy, clay and loamy are found in the province (Ahmad, 1986). The population of the province has been estimated as 70 million by the Punjab-World Gazetteer (2009) and about half of the population of Pakistan is owned by Punjab consisting of diverse tribes and communities, sometimes known as castes. Punjabi is the common language of Punjab.

Lahore is the capital of the Pakistani province of Punjab and the second largest city in Pakistan after Karachi. The city lies along the Ravi River, situated approximately 25 kilometers (16 mi) from the Wagah border crossing and is 32 kilometers (20 mi) from the Indian city of Amritsar.

Map of Lahore District wise:





Map of Lahore city:

Soils:

These are river transported deposits (alluvium), which are quite thick and fairly homogeneous in extent. The top soil consists of brown, soft to firm clayey silt / silty clay having slight plasticity and contents of dissolved salts. The top layer is likely to extend about 3 to 6 meter below natural ground, where it is underlain by silty fine sand/fine sand. This layer generally continues to deeper depths. These layers of silty clay and sandy gravel may also exist below 10-meter depth.

Climate:

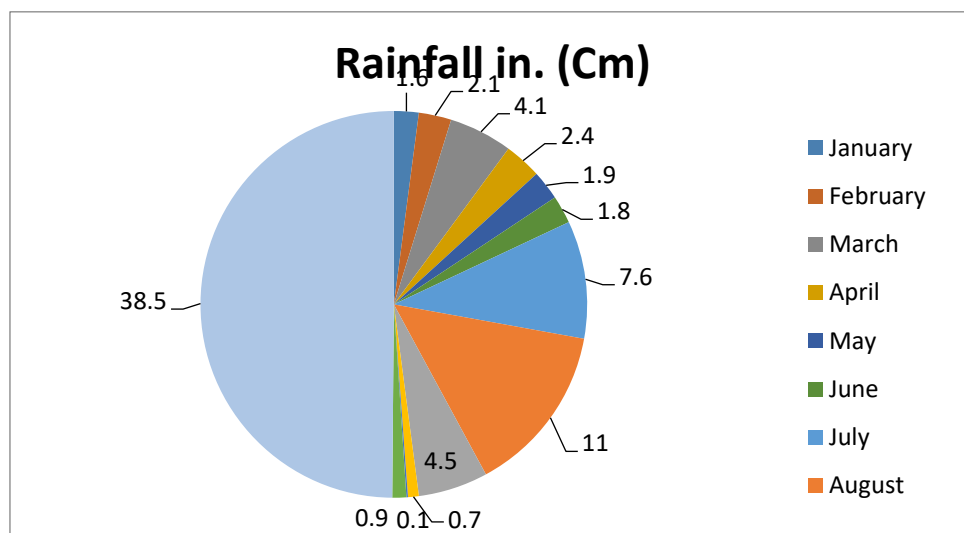
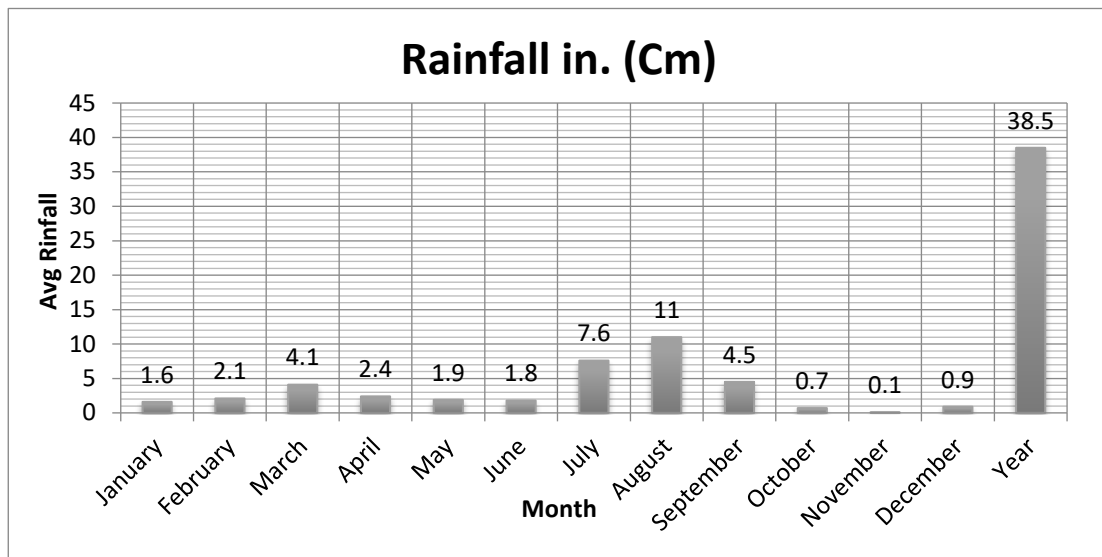
Lahore has extremes of climate; the summer season begins from April and continues till September. June is the hottest month. The mean maximum and minimum temperature for this month are about 45 and 27 degrees Celsius respectively. The winter seasons lasts from November to February. January is the coldest month. The mean maximum and minimum temperatures for the coldest month are 22 and 0 degree Celsius respectively. Rainfall Towards the end of June monsoon conditions appear and during the following two and a half months the

rainy season alternates with sultry weather. The winter rain falls during January, February and March ranging from 23 to 31 millimeters.

Month	Average high Temperature °C	Average low temperature °C	Rainfall in. (Cm)
January	19	03	1.6
February	21	06	2.1
March	26	12	4.1
April	33	17	2.4
May	38	22	1.9
June	42	27	1.8
July	39	27	7.6
August	37	26	11
September	37	23	4.5
October	33	16	0.7
November	28	09	0.1
December	21	04	0.9
Year	31	16	38.5

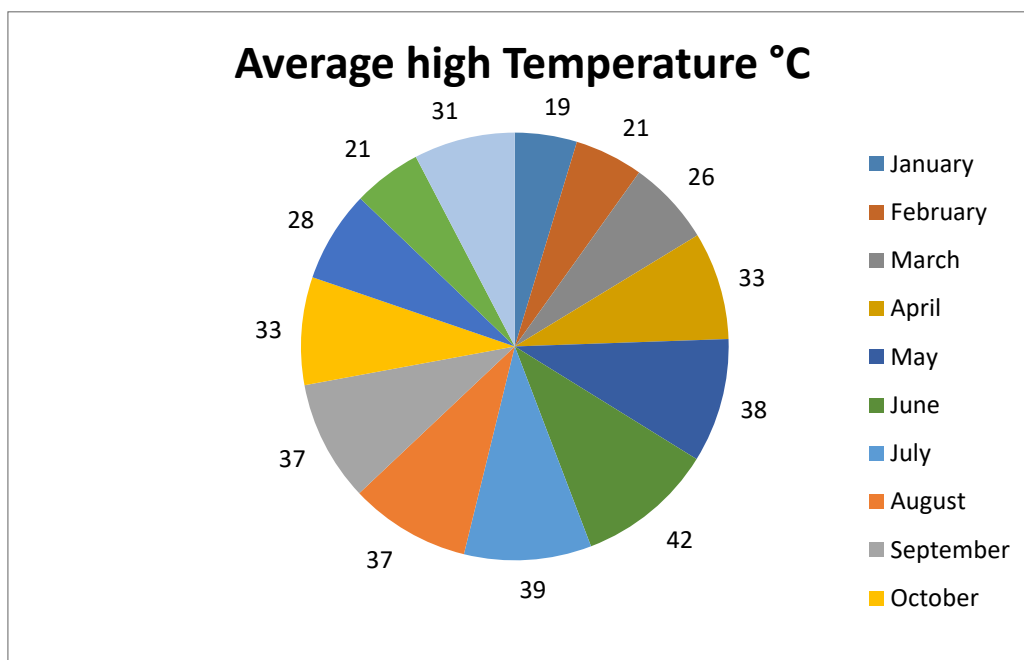
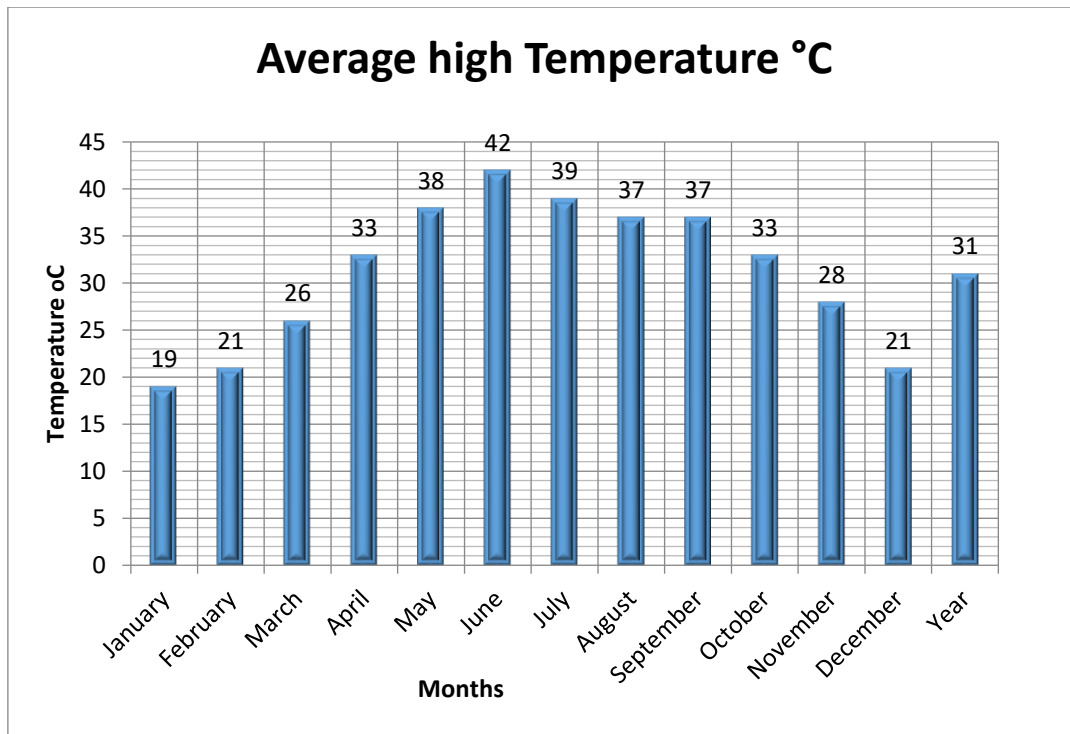


Graphical representation of average rainfall



Graphical representation of Average High Temperature





Ambient Air Quality:

The project is located in industrial cum agricultural area of District Lahore. The major sources of air pollution in the area are transportation or vehicular traffic.



To record the baseline ambient air quality of the project area, ambient air monitoring was conducted by the Pak Green Laboratory at advised locations to assess the concentration of priority pollutants (Carbon monoxide, Nitrogen dioxide, Sulphur dioxide and PM₁₀). Ambient air monitoring was conducted by using ambient air analyzer, results are annexed as **Annexure-F**.

Particulate Matter (PM₁₀)

For PM₁₀ mini volume air sampler was used. In PM₁₀ Sampler air is drawn into the unidirectional inlet head at a flow rate of 16.67 LPM. The air is then accelerated toward the first impaction stage where particulate with aerodynamic diameters greater than 10mm are collected (filtered out). The air stream, carrying particulate 10 microns and smaller, continues down the inlet toward the second impaction stage where particles larger than 2.5 microns are collected. Finally, particulate 2.5mm and smaller continue down the inlet where they are collected on a 46.2 mm diameter, ring supported filter media disc.

Noise Level Monitoring:

Basic Environmental conditions:

Monitoring Instrument:

The description of the instrument used for the noise level monitoring is given below:

Name: Digital sound level meter

Model: AR824

Company: Intel Instruments plus

Calibration:

Self-calibration time: 10 sec (every turn on)



Specification:

- ✓ Resolution: 0.1 dB
- ✓ Overall Range: 30 to 130 dB "A", 35 to 130 dB "C"
- ✓ Sound Level Ranges: 30-80 dB, 50-100 dB, 60-110 dB, 80-130 dB
- ✓ Basic Accuracy: +/-1.5 dB
- ✓ Sampling Frequency: 2/sec

Methodology adopted:

Noise level measurements were carried out in a way that monitoring round was completed in one go.

Sources of Noise Pollution

Major sources of noise generation are due to passing of railway train and vehicular traffic along the road. Noise levels were monitored within and outside of boundary walls of the project site. The noise levels are falling in the range of 63-76 dB (A).

Lab reports are also annexed as **Annexure-E**

Surface water:

There is no surface water channel exist project area.

Ground water:

Underground water is available and its quality is satisfactory. The underground water is supplied by pumping system (motor pump, tube well, hand pump) to the residents of the area. Water quality is good at the depth of 500 ft while the upper-level water has biological, Arsenic and fluoride contamination.

Ecological Resources

Fisheries:

The project area is almost free from any commercial fishing activity. There are no lakes, even natural water ponds in the vicinity. Therefore, Fishery or any worth mentioning aquatic biology in this area is out of question.

Biodiversity:



Natural capital of a country mainly includes all of the country's wilderness areas and scenic landscapes, including also with their associated flora and fauna. Pakistan has a total of nine major ecological zones. The contribution of the "Natural Capital" is recognized at three distinct levels: species, genera, and communities (habitat and ecosystem) both collectively and within each level, the range or variety of the resources are referred to as the "Biological Diversity". The term has relevance for each of Pakistan's administrative units district, province, and particularly country. The more the number of species, genera, and habitats and ecosystems present within these units, the greater is said to be the biodiversity. The biodiversity of the area, with this background, is discussed as under.

Forests

Location of Forests and Area under Afforestation: An area of 207 acres is under forest in the district. There is also linear plantation of 1066.62 Km alongside the roads/rails/canals in the district. Trees grown in the area are Kau, Phalai, Kikar and Shisham.

Flora:

Common trees of project area include:

- *Acacia Arabica*- locally known as **Kikar**
- *Alstonia scholaris* - locally termed **ditabark**
- *Bombax malabaricum*- locally termed **sunbal** or **silk cotton tree**
- *Callistemon citrinus* - locally termed **bottle brush**
- *Dalbergia sissoo* - locally termed **shisham**
- *Delonix regia* - locally termed **gulmohar**
- *Erythrina suberosa* - locally termed **coral** or **gul nister**
- *Ficus benghalensis* - locally termed **banyan**
- *Ficus religiosa* - locally termed **pipal**
- *Ficus retusa* - locally termed **bobari**
- *Kigelia pinnata* - locally termed **gul-e-fanoos** or **sausage**
- *Livistona chinensis* - locally termed **bottle palm**
- *Mangifera indica* - locally termed **aam**
- *Mimusops elengi* - locally termed **molseri**
- *Pongamia pinnata* - locally termed **sukh chayn** or **Indian beech**



- *Syzygium cumini* - locally termed **jamu**
- *Ziziphus zizyphus* - locally termed **jujube**

The project area is rich in biodiversity but the subject unit is devoid-off any specie.

Fauna:

There are number of birds, reptiles and mammals are present in the project area but there is no protected species.

Rare or endangered species:

There are no game reserves or protected lands/areas or endangered or rare species either in the area from the project site.

Social and Cultural Study

Demographics:

Population

Total Population (est. 2011): 8,739,000

- Total Area: 2014 square km
- Annual growth rate: 5.6%
- Population density: 8,200 persons/sq. km.

Language

Punjabi is the native language of the province and is the most widely spoken language in Lahore. Punjabi is the primary means of communication in both the city and adjoining peri urban areas. Punjabi has no official status in Lahore and some Punjabi activists has raised demands for recognition of Punjabi. English has become increasingly popular with educated and younger people due to its official status in government and preferred language status for business. Many Punjabi speakers in Lahore are known as *Majha Dialect of Punjabi*. According to the 1998 census, 86.2% or 6,896,000 of the population are Punjabis; 10.2% or 816,000 are Urdu speakers and the Seraikis, at 0.4%, number about 32,000.



Education:

Lahore is known as Pakistan's education capital, with more colleges and universities than any other city in the country. Lahore is Pakistan's largest producer of professionals in the fields of science, technology, IT, engineering, medicine, nuclear sciences, pharmacology, telecommunication, biotechnology and microelectronics. Most of the reputable universities are public, but in recent years there has also been an upsurge in the number of private universities. The current literacy rate of Lahore is 74%. Lahore hosts some of Pakistan's oldest educational institutes: Government College Lahore (now Government College University), established in 1864; Forman Christian College, a chartered university established in 1864; University of the Punjab, established in 1882; Kinnaird College, established in 1913; and University of Engineering and Technology, Lahore (UET Lahore), established in 1921. UET is also Pakistan's oldest technical degree-awarding institute and its first university in the field of engineering and technology.

Lahore's institutes in the fields of computer science, IT, and engineering include the National University of Computer and Emerging Sciences (NUCES or FAST-NU) and Punjab University College of Information Technology. Notable architecture schools include Beaconhouse National University, COMSATS Institute of Information Technology, University of South Asia, National College of Arts and University of Engineering and Technology, Lahore. Notable business schools include the Lahore University of Management Sciences (LUMS), Lahore School of Economics, Forman Christian College, and University of Management and Technology. University of Education, established in 2002, is Pakistan's first specialized university in the field of education.

Lahore also provides education in many fields of health sciences. Notable medical colleges offering MBBS degrees include Allama Iqbal Medical College, Fatima Jinnah Medical College, King Edward Medical University, Lahore Medical and Dental College, Services Institute of Medical Sciences, Shaikh Khalifa Bin Zayed Al-Nahyan Medical and Dental College and Shalamar Medical and Dental College. Important postgraduate institutes are Punjab Institute of Cardiology and University of Health Sciences, Lahore. University of Veterinary and Animal Sciences is the only college in Lahore providing education in the field of veterinary medicine. De'Montmorency College of Dentistry is an important college of



dentistry. There are many institutes offering education in fields of nursing and pharmacy as well.

Notable schools include Aitchison College, St. Anthony's College, Lahore College of Arts and Sciences, Lahore Grammar School and Salamat School System.

Project proponent is committed to provide education to the children of the workers as it is being provided for another unit also.

Nearby Residential Area:

At the distance of 2-3 km from subject project Royal Tag Head Office is present while at the distance of 5-6 km Al-Umar Knitwear (Pvt.) Ltd is present.

Existing Health Facilities

Health infrastructure in district Lahore is very well established and equipped. Lahore district has three teaching/ tertiary care hospital, two district Head Quarter hospitals and two Tehsil Head Quarter hospitals. Moreover, a wide spread network of basic health units and rural health care centers are providing basic health facilities at far-flung areas.

Natural Resources

Agriculture

Crops

- Wheat
- Sugarcane
- Rice
- Jawar
- Bajra
- Tobacco
- Moong
- Mash
- Masoor
- Maize



- Oil Seeds: Rape, Mustard and Sun Flower are also grown in minor quantities in the district
- **Fruits**
 - Citrus
 - Guavas
 - Mangoes
 - Litchi
 - Pomegranate
 - Jaman
 - Peaches
 - Dates
 - Phalsa
 - Banana
- **Vegetables**
 - Potatoes
 - Carrot
 - Cauliflower
 - Turnip
 - Ladyfinger
 - Onion
 - Tomato
 - Bitter Gourd
 - Bottle Gourd
 - Peas
 - Garlic
 - Chilies

Industry

In district Lahore, a variety of industries are operating In view of the existing industries there exist very good prospects for steel re-rolled flat/non flat products, construction machinery, stone crushing machinery, bakelite sheet, auto tyres/tubes, food processing machinery, hospital



furniture, components for air-conditioner / refrigerators / freezers, textile chemicals, collapsible tubes, steel tubes/pipes, electric wire/cables, electric/telephone poles, electrical accessories, quality agriculture implements, distribution transformers, miniature circuit breakers etc.

Demand Based Industry

Lahore district is the second biggest industrial base of the country after Karachi. It also possesses the requisite social and physical infrastructure facilities. Therefore, in view of the overall provincial and national and international market, there exists a vast scope for electrical and electronic products such as electric motors/turbines of higher power, electricity / water / gas meters, telecommunication equipment, aluminium conductor, fluorescent lamps, switch gear/control gear, thermostats / evaporators, insulators, PVC cables, drop-out fuse cuttings, VCR/VCP, radio/tape recorder/stereo deck, video/audio cassettes, computers, printers, scanners, UPS, CD?CD players, T.V. picture tubes, capacitors/resistors, electro-medical equipment. Besides, there also exists good prospects for drugs/pharmaceuticals, dyes/colours/pigments, tanning chemicals, chemical fertilizer, insecticides/pesticides, photo state machine, textile machinery, road construction machinery, heavy machinery for sugar/chemical/mining, paddy dryer for rice husking units, lint cleaners for ginning factories, etc.

Quality of Life

Overall quality of life of District is good but the subject project is presented in agricultural cum commercial area where quality of life is average because as per survey of the consultants it was observed that people of the area lead simple life, activities of women are mostly restricted to homes, institute and health facilities are not so upto the mark.

Culture

Lahore is referred to as the cultural heart of Pakistan as it hosts most of the arts, cuisine, festivals, music, film-making, gardening and intelligentsia of the country. The city has always been a centre for publications where 80 percent of Pakistan's books are published, and it remains the foremost centre of literary, educational and cultural activity in Pakistan. It is also an important religious centre as it is home to hundreds of [temples](#), [mosques](#), churches and shrines like [Data Durbar Complex](#).



Project proponent is committed to preserve the culture and norms of the area and will provide employment to local people for the preservation of the culture.

Recreational Resources and Development:

The project area has not any private recreational facilities.

Aesthetic 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.

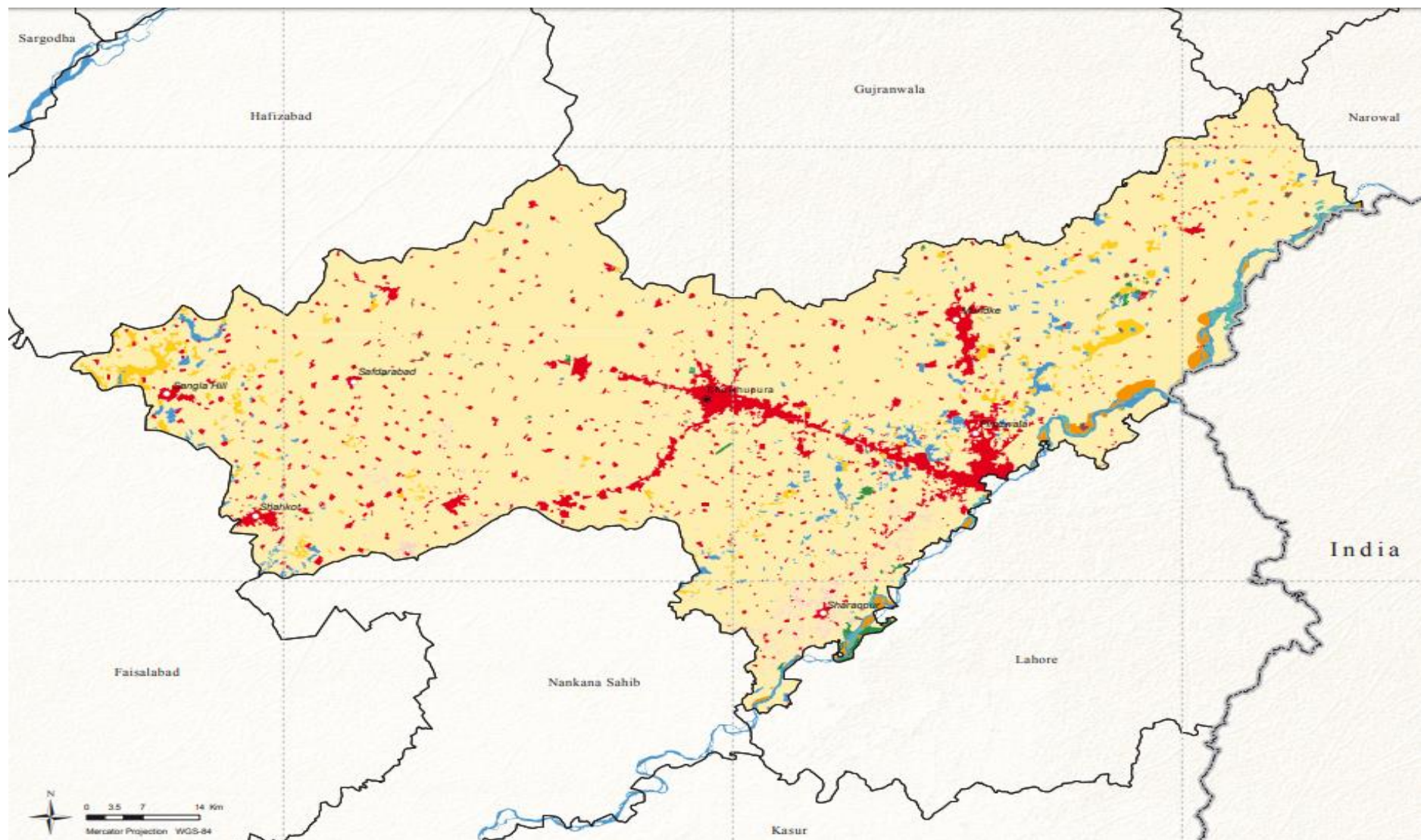
Archaeological and Historical Treasures:

Archaeological or historical treasures within the project area are not available.

Suitability of site

The site does not fall in any sensitive area. The ETP will be installed within the existing industrial site.





Ref: *Land Cover Atlas of Pakistan, The Punjab Province (FAO, Govt. of Punjab)*



Ecological Resources:

Flora:

No.	PLANT SPECIES	COMMON NAME
1	<i>Suaeda fruticose</i>	shrubby seablight
2	<i>Kochia indica</i>	Kochia
3	<i>Diplachnae fusca</i>	Bearded sprangletop
4	<i>Desmostachya bipinnata</i>	halfa grass, big cordgrass, and salt reed-grass
5	<i>Alhagi maurorum</i>	camelthorn, camelthorn-bush
6	<i>Sporobolus arabicus</i>	Arabian Drop-Seed Grass
8	<i>Polypogon monspeliensis</i>	annual beard-grass or annual rabbits foot grass
9	<i>Vetiveria zizanioides</i>	Vetiver
10	<i>Imperata cylindrical</i>	Cogongrass
11	<i>Scirpus maritimus</i>	Seaside Bulrush. Cosmopolitan Bulrush
12	<i>Typha angustata</i>	lesser bulrush, narrow leaf cattail
13	<i>Acacia Arabica</i>	babul, kikar
14	<i>Cassia fistula</i>	Amaltas
15	<i>Bombox ceiba</i>	Simbal
16	<i>Acacia nilotica</i>	Desi Kikar
17	<i>Albizia lebbeck</i>	Shrin
18	<i>Azadirachta indica</i>	Dhrek
19	<i>Zizyphus numularia</i>	Jungali Beri
20	<i>Vernonia cinerascens</i>	Simbla
21	<i>Sesbania bispinosa</i>	Danchi
22	<i>Ricinus communis</i>	Harnoli
23	<i>Justicia adhatoda</i> Linn.	Baikaar
24	<i>Ipomea carnea</i>	Chota Aak
25	<i>Dodonaea viscosa</i>	Aliar
26	<i>Datura alba</i>	Dhatura
27	<i>Cymbopogon Citratus</i>	Lemon ghaas
28	<i>Cannabis sativa</i>	Bhang
29	<i>Calotropis procera</i>	Ak
30	<i>Abutilon indicum</i>	Peeli booti
31	<i>Achyranthes aspera</i>	Puth kanda
32	<i>Aleo vera</i>	Kawar gandal
33	<i>Althea rosea</i>	Gul-e-khaira
34	<i>Anagallis arvensis</i>	Billi buti
35	<i>Argemone Mexicana</i>	Satyanashi
36	<i>Carthamus Oxycantha</i>	Poli
37	<i>Convolvulus arvensis</i>	Lily
38	<i>Cucumis melo var.agrestis</i>	Chiber
39	<i>Euphorbia helioscopia</i>	Chatri dhodhak
40	<i>Euphorbia hirta</i>	Dhudi kalan
41	<i>Euphorbia prostrate</i>	Dhudi khurd
42	<i>Malva sylvestris</i>	Pick-cheese
43	<i>Mentha longifolia</i>	Jungali pudeena
44	<i>Ocimum basilicum</i>	Niazbo



45	<i>Oxalis corniculata</i>	Khatti booti
46	<i>Solanum nigrum</i>	Makoo
47	<i>Taraxacum officinale</i>	Dandelian
48	<i>Mimosa pudica</i>	Lajwanti
49	<i>Sonchus asper</i>	Sgandi
50	<i>Withania somnifera</i>	Asgand

Fauna:

Animal Species:

Domestic cat, squirrel and Jungle cat are faunal species common in this region, other fauna including different types of butterfly, house mouse, crow, and parrot. The area also possesses few frogs spp.

Project site is free from any protected species.

No.	ANIMAL SPECIES	COMMON NAME
1	<i>Canis aureus</i>	Geedhar
2	<i>Canis lupus</i>	Kutta, Dog
3	<i>Funambulus pennantii</i>	Palm squirrel
4	<i>Rattus Rattus</i>	Roof rat
5	<i>Herpestes mungo</i>	Indian mongoose
6	<i>Golunda ellioti</i>	Bush rat
7	<i>Mus musculus</i>	House mouse
8	<i>Felis chaus</i>	Jungle cat
9	<i>Felis catus</i>	Domestic cat

Socio-economic Environment:

Language:

The predominant language of the district is Punjabi, which according to the 1998 census is the first language of 98% of the population, while Urdu is the first language of 1.1%.

Education:

SCHOOLS						
Schools	H. Sec	High	Middle	Primary	sMosque	Total
Male	06	64	72	536	19	697
Female	08	65	117	360	01	551

Demography:

According to 2017 census the population of the district has 517,850 households and its population reached to 3,460,426 of which 1,789,956 are males and 1,670,310 are females. This census shows that 2,258,636 persons live in rural while 1,201,790 live in urban areas. It is further reported that there are number of transgenders in this area



Safe Drinking Water:

Water is crucial for all forms of life and is required in almost all human activities. It is now universal human right to gain access to clean and safe freshwater (United Nations Committee on Economic Social and Cultural Rights, 2003). About 70% of people in Pakistan use ground water for domestic usage (Malik et al, 2010). 20 to 30% of all hospital cases and 60% infant deaths are due to water borne diseases (Government of Pakistan, 1999).

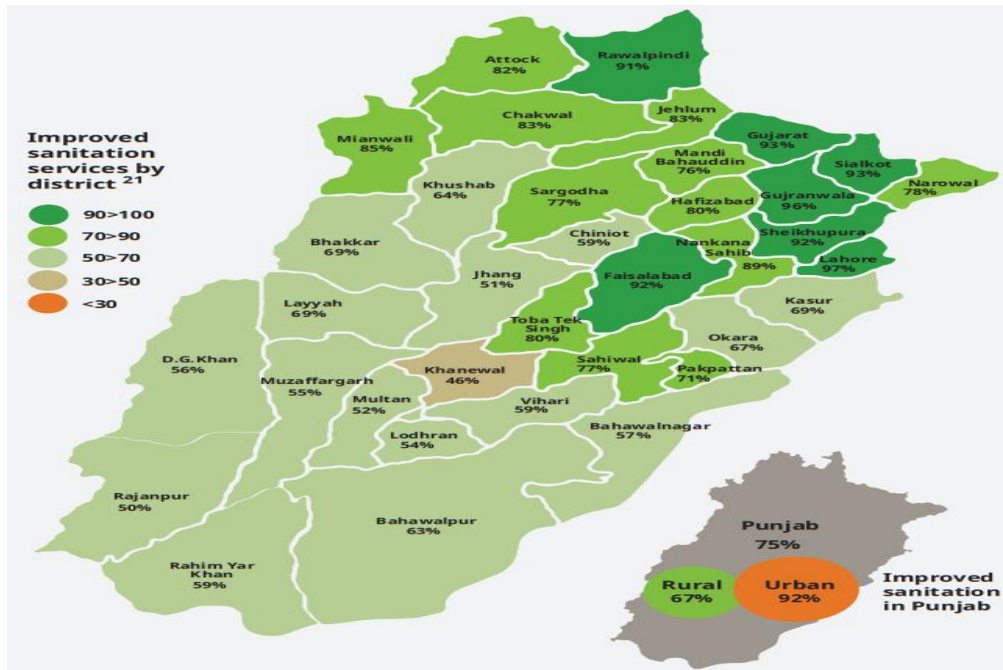
Waste water disposal:

As per Punjab MICS 2017-18, 95.8% of the population is living in households who use improved sanitation facilities, which is higher in urban as compared to rural areas.

USE OF IMPROVED AND UNIMPROVED SANITATION FACILITY (%)	
Piped sewer system	26.7
Septic tank	67.9
Pit latrine	1.1
DK where	0.1
Ventilated improved pit latrine	0.1
Pit latrine with slab	0.0
Pit latrine without slab/ Open pit	0.1
Bucket	0.0
Open drain	1.4
Other	0.4
DK/ Missing	0.1
Open defecation (no facility, bush, field)	2.2
Total	100.0
Percentage using improved sanitation	95.8

Ref: (MICS, Punjab 2017-18)





Industry:

Punjab has numerous large industrial concentrations such as in textiles, leather and light engineering goods. There are also geographically distinct industrial clusters in the province, the most famous of which is the 'industrial triangle' which includes Gujranwala, Sialkot and Gujrat. In total there are seven industrials zones/clusters in Punjab, these are, Lahore, Gujranwala, Faisalabad, Sialkot, Sheikhupura, Wazirabad and Islamabad/Rawalpindi.

The three main industries in Sheikhupura district are textile, food and machinery and equipment. Across clusters, Sheikhupura and Faisalabad are clear outliers; more than 80 percent of the firms in these industrial zones reported electricity shortages to be the most serious obstacle to their business. Although more than 80 percent of firms in Sheikhupura reported electricity as the most serious constraint, the losses reported by firms in that zone were on average around 7 percent which is the lowest in the Punjab. Sheikhupura is among the least affected districts by macroeconomic instability.

Ref: Constraints faced by Industry in Punjab, Pakistan (2012)

INDUSTRIES IN DISTRIC LAHORE	
Textile	315
Chemical	57



Board & Paper	51
Steel	72
Flour	24
Medicine	65
Rice Mills	97
Fertilizers	02
Auto industries	55
Others	574
TOTAL	Approximately more than 1,000

Agriculture:

Major crops and fruit of district Lahore are sugarcane, wheat, rice and guava. A variety of vegetables are also grown in the district. There are 23 flour mills, 93 rice mills, 4 fruit juices, 4 solvent extraction units and 15 vegetable ghee/cooking oil units already operating in the district. In view of the availability of various raw-materials and existing industries, there exist little additional scope for flour mills and rice husking units. However, there exist good prospects for fructose from rice bran, rice husk briquettes, corn oil, furfural from maize cobs, fruit juice/pickles/squashes and vegetables dehydration units.

Social Setup:

Punjabi is the main language spoken in the district. More than 99 per cent of the population is Muslim, with small minority communities including Christians and Sikhs.

Men are the dominant force in the household, with final say in the affairs of all members of the family. Women, by comparison, play a subservient role and observe *pardah* (veiling) especially in rural areas compared to urban setup, where women freely move and participate in different social activities.

Poverty:

DISTRICT LAHORE INCIDENCE OF POVERTY FROM 2004-05 TO 2014-15 (%)		
2004-05	2008-09	2014-15
38.3	30.6	21.4
DISTRICT LAHORE MULTIDIMENSIONAL POVERTY INDEX (MPI) 2014-15		
MPI	Incidence (H)	Intensity (A)
0.093	21.4%	43.5%

Ref: Punjab Economic Report, Poverty Profiling in Punjab



CHAPTER # 5

SCREENING OF POTENTIAL ENVIRONMENTAL IMPACTS & THEIR 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 project location, design, constructional and operational phases have been assessed and mitigation measures are provided accordingly.

Methodologies for impact identification:

The methodology adopted for impact evaluation includes the Project Impact Evaluation Matrix.

Project Impact Evaluation Matrix

The impact Evaluation matrix was developed by placing project activities on x-axis and different environmental parameters likely to be affected by the proposed project actions grouped into categories i.e. Physical, Biological and Socio Economic Environment. For the impact assessment, project impact assessment matrix is used by dividing the project action into different phases (Construction phase and operation phase). A project impact evaluation matrix is attached in next section of this chapter.

The evaluation of impacts has been carried out on the basis of developing matrix, in which impacts have been rated on the basis of their significance. For rating impacts significance following criterion has been developed;

NA – Not Available

O – Insignificant (No or minimal impact)

LA – Low Adverse (Short term, reversible or less damage to environment)

MA- Medium Adverse (Long term reversible damage to environment)

HA – High Adverse (severe irreversible adverse damage to the environment)

LB – Low Beneficial (Short term benefits or less beneficial to the environment)

MB – Medium Beneficial (Long term benefits to environment)

HB – High Beneficial (Continuous benefits to environment)



	Physical Environment							Biological Environment		Socio-Economic Environment							
Environmental Project	Topography & Drainage	Soil Quality	Landscape	Surface water quality	Ground water quality	Air quality	Noise	Flora	Fauna	Agricultural Land	Health & Safety	Disruption of Public Utilities	Employment	Population Disturbance	Social Disorder	Cultural Values	Traffic Management
Placement of construction machinery on site	LA	LA	MA	LA	O	O	O	MA	LA	MA	LA	O	O	MA	LA	LA	HA
Parking of heavy vehicles	LA	O	LA	O	LA	O	O	LA	O	LA	LA	O	O	MA	MA	MA	HA
Transportation of raw construction material	LA	MA	MA	LA	O	HA	HA	MA	HA	LA	HA	O	MB	HA	HA	LA	HA
Temporary storage of raw material	LA	LA	LA	MA	LA	MA	O	LA	O	LA	LA	O	LB	LA	O	O	HA
Loading and unloading of raw material	LA	LA	MA	MA	O	HA	MA	LA	LA	LA	MA	LA	MB	HA	LA	O	MA
Labour camping on site	O	O	LA	LA	O	O	LA	LA	O	LA	LA	HA	O	HA	MA	MA	O
Storage of oil and fuel	LA	MA	LA	LA	O	LA	O	LA	LA	LA	MA	O	LB	O	O	O	O
Extraction of ground water	O	O	O	O	MA	O	O	MA	O	MA	LA	HA	O	O	LA	O	O
Construction material mixing/ preparation	LA	MA	LA	LA	LA	LA	HA	O	O	O	HA	HA	HB	MA	LA	MA	O
Welding/ cutting and steel fix ring process	O	O	O	O	O	MA	HA	O	O	O	HA	O	HB	MA	LA	LA	O
Shuttering/ beams	O	O	O	O	O	MA	HA	O	O	O	HA	LA	HB	MA	MA	MA	O
Excavation	HA	MA	MA	LA	LA	HA	HA	MA	LA	O	HA	O	HB	LA	O	O	O



Water tank/ pond on site for temporary storage	O	O	O	LA	LA	O	O	O	B	O	LA	LA	B	LA	O	O	O
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Legend:

O=Negligible/No impacts

B=Beneficial

LA=Low Adverse

MA=Medium Adverse

HA=High

Adverse



Impact analysis and prediction:

In order to evaluate the socioeconomic and environmental impacts, field surveys are extremely essential. In addition to the surveys at the preliminary stage, consultation with the community and their active participation plays a vital role in successful implementation of the project. For the impact analysis and predictions following methods were adopted.

Consultations/ 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.

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 build 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 factory workers, villagers, shopkeepers, drivers etc.
- Environmental consultants and social specialists and documenting the opinions of the stakeholders expressed during the meetings etc.

ANALYSIS OF IMPACTS AND RECOMMENDED MITIGATIONS



The project activities during construction phase will involve clearing of vegetation along the route alignment wherever required, excavation for installation of towers, erection of towers, civil works related to transmission line and line stringing. For Grid station, it will involve excavation for building and equipment foundations, civil works and erection of equipment.

During the operation phase, most of the construction phase impacts will get stabilized and the impacts will be restricted only to the operation and maintenance of the project.

Environmental Impacts due to project location

Proposed site does not fall in the category of sensitive area and no environmentally sensitive localities exist within radius of study area. The only issue which can arise due to the location of the subject project could be the issue of traffic congestion due to transportation of the construction material at the project site. If the project proponent maintain HSE conditions and comply with the PEQS limits than, there will not be any significant impacts of the project on the environment.

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 or may be positive

Nature of impact: Direct

Duration: Long-term

Timing: Operation phase

Reversibility: NA

Likelihood: Low (unlikely),

Consequences: Mild or may be positive

Mitigation Measures for location phase impacts

- Project site should have good road infrastructure and efficient road infrastructure already exists there that is used currently to access the site and there is no issue of the road congestion due to the wide, good and paved road.
- Location can be considered as the positive impact due to transmission of electricity in the same area.
- The project will provide the jobs to the local residents as well as to those from the suburban areas.

Environmental Impacts due to the project design



Subject project is the proposed installation of 132 KV GIS Grid Station at Sector-T (Gobindpura_ Phase-VII(Overseas Enclave), DHA Lahore. Firefighting plan, health & safety plan, tree plantation plan, emergency response plan will be incorporated during the designing phase of the project. The subject project will consist of;

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

- Soil structure and soil bearing capacity
- Road infrastructure design
- Emergency exit in the proposed project
- Firefighting system
- Rain water harvesting capacity of the drainage system
- Electricity hazards

Impact significance: moderate to high or may be negative

Nature of impact: direct

Duration: Long-term

Timing: Constructional phase & Operation phase

Reversibility: NA

Likelihood: moderate to high

Consequences: moderate to high or may be negative

Mitigation measures and recommendations

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

- Emergency exit points should be marked within the project building.
- Firefighting system should be designed for the emergency situations.
- Electricity system should be designed safe and sound.
- Electricity wires should be covered by thick plastic/electricity resistant covers.

Environmental Impacts during the construction phase

Impact significance: moderate to high or may be negative

Nature of impact: direct

Duration: Short Term

Timing: Construction phase



Reversibility: NA

Likelihood: moderate

Consequences: moderate

Impact on Physical Resources

Impact on Topography

During the construction of substation, the topography will change due to excavation and erection of tower, fill and cut for leveling the tower erection place. The most prominent impact on the surface topography will be due to the removing of the vegetation at the tower erection site and all along the Right of Way for construction facilitation.

This will lead to change in the surface features only. The impact will be irreversible as the present features along the 15m Row will be changed due to presence of the transmission line.

No topographical changes are envisaged during the operation phase of the transmission line and the substation. The existing access routes will be utilized during the operation and maintenance of the transmission lines.

Impact on Environmental Resources

Impact on Air Quality

During the construction phase, the activity would involve excavation for the tower erection, movement of transporting vehicles carrying the construction materials etc. along the haul road (through un-built roads, but are not maintained). At majority of locations, movement of heavy vehicles may not be possible; from approach road to construction site material will be head loaded. All these activities would give rise to emission of dust particles thereby affecting air quality marginally at the site which will be transitory in nature.

Mitigation Measures

Sprinkling of water during excavation will reduce the dust emission to a great extent.

The operation of transmission line and the Grid station will not have any negative impact on the air quality of the region.

Impact on Noise Levels



During the construction phase, the major sources of noise pollution are movement of vehicles transporting the construction material and equipment to the site. Most of the access roads along the alignment are feasible for motor vehicles. The major work of the construction is expected to be carried out during the day time. All areas have heavy load of traffic and public access. People shall be fairly warned about the severity of the works.

Mitigation Measures:

Following measures will help to keep noise and vibration in acceptable level during Construction phase:

- ✚ Contractor shall equip their heavy construction equipment and plants with exhaust silencers to limit the engine noise so as not to exceed 75 dB (compactors, loaders, vibrators and cranes) and regularly maintain all construction vehicles and machinery that should meet the National Environmental Quality Standards.
- ✚ Contractor shall limit working time for activities that create noise only from 7.00 am to 8.00 pm except for construction site near public sensitive receptors. Construction related activities closer to sensitive receptors have to be scheduled in coordination with the relevant authorities. During the operation phase of the project, there will be corona noise from the conductors which will be felt only up to 15 to 30 m area; hence the ambient noise level shall meet the 85dB limit of NEQS.

Impact on Surface Water Quality

The construction and operation of the transmission lines will not have any significant impact on the surface water quality in the area since no surface water body was found. Proposed activities will create temporary impacts to the existing drainage system in the area. Stagnation of water will also create temporary breeding sites to mosquitoes, which will have direct impact on public health.

Mitigation Measures:

Ensure that minimum water is lost during construction activities and no water remains stagnant at any place.

Impact on Ground Water Quality

Ground water contamination might take place during construction activities. In case of an accidental spill or maintenance works of vehicles, machineries and different components of the



transmission line and grid station; chemical substances and oily wastes, which are often used in the construction vehicles and machineries, may leach into the soil and percolate to the ground water. In rainy seasons, the quality of soil is vulnerable since the porosity increase and leachate formation is escalated which may eventually bring an impact on the ground water resources.

Mitigation Measures:

Thus following measures will be required in order to prevent deterioration of water from the construction and construction related activities:

-  All construction vehicles and equipment should be maintained in proper conditions to avoid any leakage
-  Contractors shall use silt traps and erosion control measures where the construction is carried out in close proximity to the water bodies to avoid cement particles, rock, rubbles and waste water entering the surrounding water bodies.
-  Construction activities should be restricted to dry season.
-  All liquid raw materials and semi-liquid components must be kept at impermeable floorings and covered properly with appropriate labeling which shall avoid any leakage that might occur due to accidental spill or rain water runoff.

Impact on Soil and Geology

Project activities including excavation, cut and fill operations, removal of trees and green cover vegetation etc., will enhance the soil erosion during the rainy season. Removal of trees and green cover vegetation will reduce infiltration rate of rainwater. The impact on soils will be due to the soil erosion at the tower construction site and along the access routes. Excavation activity and land clearance in the erosion prone areas have to be minimized while conducting site selection for towers. Leveling and stabilization of tower construction sites will be done after completion of construction activity which will avoid surface runoff and damage to the topsoil.

Mitigation Measures:

The impact associated with landslides due to excessive erosion and other civil works can be avoided or minimized by following mitigation measures:



- ✚ Maximum effort should be taken to minimize removal of trees and green cover vegetation.
- ✚ Minimize obstruction or destruction to natural drainage pattern of the surrounding area.
- ✚ Proper treatment of clearing and filling areas against flow acceleration
- ✚ Turfing work should be taken prior to rainy season around the Grid station.
- ✚ Contractors shall restrict cut and fill operation around sharp/deep slope areas.
- ✚ Top soil (2-3 cm from the top of the soil), which is removed during construction from the cultivated lands must be stored separately for future utilization of cultivated lands near tower leg locations.

Construction Waste

Construction waste management

Almost all the activities from excavation to erection will generate waste, however the waste will be of inert nature, in addition the waste will mainly comprise of cement and concrete waste, the concrete material resulting from batching and mixing will harden the ground surface resulting in growth inhibition of plant growth. This would also result in unaesthetic environment of the site

Mitigation Measures:

Thus, following measures are needed to protect and enhance the quality of environment during the construction stage:

- ✚ It is strongly recommended that waste should be reduced at source and by reusing the residual waste
- ✚ It will be ensured that waste will be segregated and collected, however recyclable waste will be sent to the recycling unit
- ✚ The waste which cannot be reused or recycled will be dumped to the proper and allocated containment facility
- ✚

Impact on Ecological Resources

There is no national wildlife park, bird sanctuary, wetland in the route alignment of the proposed transmission line. The study area for route alignment has sparse plantations area. The ecological impacts are briefly described in the following sections



Effect on Flora and Fauna

None of the declared environmentally sensitive areas is located within the project-affected area since it is an urban settlement. Migratory paths of small mammals and reptiles may be affected due to construction activities. However, noise, vibration and emission from construction vehicles, equipment will occur during construction and pre-construction stages in temporary manner.

Mitigation Measures:

The impacts related to above activities are temporary and can be mitigated through following measures:

-  Strict attention on worker force regarding disturbance to surrounding habitats, flora and fauna including hunting of animals and unnecessary cutting of plants
-  Construction activities must begin with low intensity which may serve as an early warning system for the fauna to leave the area and go to safer areas
-  Ensure habitat conservation by avoiding dumping of construction and sanitary waste like debris, bricks, gravel, litter, food leftovers in open areas and seek a place with the municipal office to extricate a place to release them.

Impact on Terrestrial Ecology

There is no sensitive ecological area / protected forest area such as national wildlife park, or bird sanctuary crossing the proposed route alignment. The removal of herbaceous vegetation from the soil and loosening of the top soil generally causes soil erosion. However, such impacts would be primarily confined to the project site during initial periods of the construction phase.

Mitigation Measures:

These would be minimized through adoption of mitigation measures like paving and surface treatment and water sprinkling.

Removal of Trees

No plant species will be removed from project site. The initial construction works along the alignment involving land clearance, cutting, filling, and leveling may cause loss of vegetation. This will be irreversible impact.



Mitigation Measures:

Care has been taken to avoid the thick plantations/vegetation as far as possible and tower locations are selected at plain paddy fields where the vegetation is thin. This will minimize the tree loss. Replanting of similar species with the ratio of 6 against 1 will be implemented.

Effect on Local Road Network

Transformers, tower material, substation equipment, iron bars, concrete materials, equipment etc. will be transported through the provincial and local road network to the project site. Heavy transportation vehicles might disturb the local traffic especially at peak working hours. Excavation at roads will bring impact on traffic flow and also lead to traffic jams. Visibility is usually minimum during night time where there are less street lights; this will pose as a hazard for the local traffic travelling in night time.

Mitigation Measures:

-  Contractor should properly maintain all road sections, which will be utilized for the construction related activities
-  Construction vehicles will only be allowed to operate at times when there is minimum traffic load
-  The site that has to be excavated will be barricaded by means of safety signs and symbols, such as using reflectors to improve indication of excavated sites in night time
-  Diversion routes must be allocated for normal and construction vehicular traffic to maintain normal traffic flow
-  Emergency routes must be kept clear and ensure that they are easily accessible.

Impact on Human Environment

Health and Safety

Health and safety is one of the major concerns during the construction and operational phase, almost all activities are having potential to cause harm, this includes; Manual lifting of construction material resulting in severe body pains as well as work related stress.

The activities like manual lifting, lifter operation as well as operations of other construction vehicles and other activities associated with construction and operation phase will enhance the work-related stress. The accidents may be caused due to electrocution, lightening, fires and



explosions. The local people living nearby the site where excavation and erection has to be done are more susceptible to road side accidents and noise. Improper lifting of extra tools and storage, while erecting towers is a potential hazard. The accidents may be caused due to electrocution, lightening, fires and explosions.

Mitigation Measures:

- ✚ Organize awareness programs relevant to personal safety of the workers and public in the area.
- ✚ Installation of warning signs to particular locations such as transverse points of local road network by transmission lines, additional workers and general people specifically children will not be entertained for accessing the work place especially during erection
- ✚ Necessary training regarding safety aspects to the personnel working at the line will be provided by the contractor.
- ✚ Ensure that hazards associated with manual lifting are controlled by proper lifting techniques, work rotation system will reduce the chances of being exposed to work related stress associated with construction activities
- ✚ All the workers involved in construction, operational and maintenance activities will be provided with proper PPEs including; safety belts, footwear, helmets, goggles, eye shields, and clothes to workers depending on their nature of work
- ✚ During operational phase it will be ensured that the site having high electrical voltage will be barricaded by means of impermeable walls, this would reduce the probability of being exposed to severe electrical shocks
- ✚ Only trained operators will be allowed to access high voltage area.

Socio-Economics

Social services like road, traffic, utility lines as well as routine market activities and general business may be affected, however the impact is only limited to the construction phase. The positive impact during construction of transmission line will generate local employment, as number of unskilled labors (men/women) will be required at the time of construction activities, in summary there is no major impact on social environment, rather it is a developmental activity for the benefit of community.



Mitigation Measures:

The following measures will have to be taken:

-  Advance notice to the public as well as major utility providers about the time and the duration of the utility disruption, and restore the utilities immediately to overcome public inconvenience
-  Alternate routes should be planned and will be kept clear to keep the traffic and general public services in flow and momentum.
- 

Environmental Impacts during Operation Stage

Main environmental issues associated with Project operation are as follows.

- Health and safety issues for workers may arise during the project process e.g. Particulate matter may be generated during the project process, which may cause the health issues for the workers and noise of machinery can also be a negative impact on the health of workers.
- Fire due to short circuits and other activities.
- Solid waste generation due to domestic and project related activities.
- Noise pollution from generator and other machinery.
- Health hazards including the electricity hazards.

Impact significance: moderate to high or may be negative

Nature of impact: direct

Duration: Long-term

Timing: operational phase

Reversibility: NA

Likelihood: moderate to high

Consequences: moderate to high or may be negative

Recommendations

- Safety of workers should be ensured through proper training and PPEs must be ensured during the working hours.



- A well design firefighting system will be constructed to cope with fire situations in the subject project.
- Solid waste bins should be installed at designated processes and Installed Solid waste bins should be regularly cleaned and solid waste must be handed over to the contractor.
- Sludge from septic tanks will be handed over to the certified contractors.
- Electricity monitoring/Thermography should be conducted by the proponent quarterly for the safe supply.
- Project proponent should submit all the monitoring reports in the EPA Punjab for the compliance of the PEQS.

Electro Magnetic Fields (EMF)

EMFs are generated at the operational phase when the current is passed from the lines. There are no significant impacts on the environment but there are some aspects of minor concerns. EMF causes changes in flight directions of migratory birds. Moreover, referenced from WHO research archives, it is found that EMF has some effects on human health, such as neuropsychological disorders or cardiovascular diseases, but the data is not sufficient to confirm the risks, however more research is being done in this regard.

Mitigation Measures:

There are no mitigations to consider, however the following steps can be taken to

Minimize any possible risks:

- Appropriate cabling with protective shields to suppress electron flux.
- Health-based exposure limits must be mandated to protect public health.
- A labeled zone shall be highlighted to indicate EMF in the area.
- Telecommunication service providers must be alerted about the activities and the level of EMF in the corridors and around stations to minimize exceeding levels in other communication devices.

Electric shock

This may lead to death or injury to the workers and public in the area.

Mitigation Measures:

This can be minimized or avoided by:



- Security fences around Grid station and looping areas
- Display of warning signs.

Noise Generation

Nuisance to the community around the site can occur during the project implementation stage.

Mitigation Measures:

- 🚧 Workers and operators, working in close proximity to the grid station will be provide adequate PPEs
- 🚧 General public will be restricted to stay away from those areas to a safe zone
- 🚧 Construction activities must be limited to day time and avoided at night
- 🚧 Properly tuned vehicles and machineries will be used for all construction activities to reduce noise generation.

Oil Spillage

Contamination of water on land/nearby water bodies by the transformer oil can occur during operation due to leakage or accident.

Mitigation Measures:

Substation transformers will be located within secure and impervious areas with a storage capacity of 75% spare oil. Also proper drainage facilities will be constructed to avoid overflow or contamination with natural flow paths

Potential Environmental Enhancement Measures

The proposed project will be installed with all precautionary measures to enhance and safe the environment. Following necessary measures will be adopted during construction and operation:

- 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 waste treatment system 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's 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.

Purpose of Mitigation measures

What is the problem i.e. in terms of “major environmental impacts” which may arise by the subject project activity?

The major impacts may arise by the subject project include particulate matter & dust, noise, solid waste and wastewater. Other impacts are of minor importance. These impacts will arise during construction and operation but precautionary measures will be adopted prior to start the activity, during the activity and post activity.

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

Any impact that would arise due to the subject project activity 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 environmentally friendly.



Where and how the problem should be addressed?

HSE manager/environmental manager along with site manager will be appointed to assess any impact that could be arisen during both phases. He would be responsible to address the problem and to mitigate it.

Whys of achieving mitigation measures

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.

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.

Compensation in money terms:

Management will adopt such plan that will assure the minimum impact on the environment and health by implementing proper mitigation measures. Design of the project will assure the structure stability and project life in a long run.

Replacement, relocation and rehabilitation:

will develop Restoration/ reclamation or tree plantation plan to restore the project area. Maximum Plantation will be done with native species within the building, along the boundary wall and along the road side if directed by EPA. Also, in-front of main area, horticulture plan will be formulated and area for this will be kept reserved.



CHAPTER # 6

ENVIRONMENTAL MANAGEMENT AND MONITORING PROGRAM

Purpose and Objectives of the EMP:

The primary objectives of the EMP are to:

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

Management Approach:

The overall responsibility for compliance with the environmental management plan rests with the project proponent.

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.

Environment Management team

Following functionaries will be involved in the implementation of EMP:

- Project Proponent
- HSE/Project Manager
- In-Charge Administration
- Supervisor of project

Training Schedules

Training for the management/contractors/engineers and workers on environmental aspects of the project will be arranged on biannually basis during the constructional phase of the project and on quarterly basis during the operational phase of the project. It will be imparted by a team of experienced trainers.

Training of building contractor

Training of building contractor & workers will be the part of the TORs regarding the construction of the scheme. The provisions given in EIA Report *Chapter 4 Screening of Potential Environmental Impacts & Their Mitigation Measures* will be followed.

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.

Responsibility of EMP

Overall responsibility for implementation of EMP will be that of 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 condition at the PEQS.



Equipment Maintenance Detail

The subject project is the proposed installation of 132 KV GIS Grid Station Sector-T (Gobindpura) Phase-VII(Overseas Enclave),DHA lahore.. The company will maintain the records for Health Safety & Environment and will hire HSE manager to check and deal with the HSE issues. The company shall maintain PPEs, medical facilities, firefighting Equipment's as fire buckets, fire hydrants and fire extinguishers and records for their periodic fillings or replacement.

Environmental 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.

Company will allocate the 2% of the total cost as Environment Budget for the Training, maintenance and management of Environment that will include filling and maintenance of equipment's, restoration, plantation, and availability of PPEs, strategic planning to cope with any emergency situation and formulate the disaster management plan to cope with natural disaster. Any equipment or devices failure or replacement will not be included in this budget.

Proposed monitoring program to asses performance or output of EMP

Monitoring for following Environmental Parameters is recommended:

- **Ambient Air**

Monitoring for ambient air should be conducted on regularly during constructional phase of the project and report should be submitted to EPA Punjab.

- **Noise**

Regular monitoring for noise level should be maintained periodically during construction and operation phases of the project and report should be submitted to EPA Punjab.

- **Water quality**

Regular monitoring of water quality should be conducted on monthly basis during construction and operation phases of the project and report should be submitted to EPA Punjab. Record should be maintained regarding the underground water pump and consumption.

Proposed EMP reporting and reviewing procedures



To oversee the environmental performance of the project through its lifecycle to 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.

HSE manager is responsible for reviewing the performance of the project with respect to the guidelines mentioned in EMP. Internal audits should be done on biannual bases to check to the project performance with respect to the guideline proposed in the EMP.

Environmental Monitoring data log book should be maintained by the project proponent



Description of impacts and proposed mitigation actions:

Summary of impacts and their mitigation measures

Serial	Environmental Issues/ Impacts	Mitigation Measures
PLANNING, SITE SELECTION AND DESIGN STAGE		
1	Observance of administrative and legal formalities	It is recommended for obtaining of approval from other relevant departments.
2	Acquisition of land	The proposed land is the property of the project proponent.
3	Loss of environmentally sensitive areas	There is not any sensitive area near the project site however the project proponent will achieve the PEQS at the boundary wall of the subject project to avoid the environmental impacts on the nearby industrial unit.
4	Changes in traffic pattern	There is no need to change the traffic pattern due the development of the subject project because no. of industries have been developed at the same link road only few vehicles will visit the project on daily basis.
5	Potential conflicts with stakeholders	There is not any conflict at the current stage of the project. Neighboring industries were visited regarding their concerns. They have no objection regarding development of the subject project as per proposed design.



		It is recommended to Settle the issues through scoping and specific group discussions.
6	Resettlement issues	No resettlement issues
7	Project Design	Provision of Emergency Exits, Assembly Points, firefighting arrangements, water storage for firefighting should be incorporated in the design.

SITE DEVELOPMENT STAGE

1	Erosion due to stripping and site clearance	Sprinkling of water on road sides or dusty tracks
2	Generation of dust	Careful loading and unloading of construction materials is recommended. Sprinkling of water on construction site and surrounding areas is recommended.
3	Generation of noise	• Avoid using forbidden horns at the site. • Do not throw heavy equipment and construction materials in haphazard manner.
4	Local flooding/ponding	Immediate repair and maintenance of water supply pipes and sewers in case of any defect will be undertaken.
5	Outbreak of fire	Firefighting equipment must be maintained at the site in good working condition.
6	Safety	Safety of the workers and others must be ensured. Privacy of the neighbors must not be disturbed.



7	Labor issues	Employ the local labor as far as possible Wages of the labor should be as per Government policy
CONSTRUCTION STAGE		
1	Minor erosion of land	There are two types of erosions: 1. Wind Erosion 2. Water erosion • It is recommended to construct the boundary wall first that will reduce the soil erosion due to wind and chances of water erosion due to water flow from the adjacent will be reduced also. • Clearing of land should be step wise; vegetation should be removed only from the area where main building will be developed. • Add more vegetation, restore the land by more plantation • Sprinkle water on dusty tracks is recommended
2	Contamination of land and water	Hazardous substances like oil, fuel, etc. should be kept on concreted surface. Essential services like water supply, sewerage disposal and solid waste management must be in working condition.



3	Impacts of dust, noise and flue gases on neighbors	Sprinkling of water on dusty tracks is recommended. Avoid suing forbidden horns at the site. Do not throw heavy equipment and construction materials in haphazard manner. Proper tunings of vehicles and machinery must be ensured. Schedule construction timings should be implemented for minimum disturbance to neighbors. Continuous Environmental monitoring must be ensured as per proposed monitoring plan.
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OPERATION STAGE

1	Contamination of land and water sources	Continuous vigilance on maintenance of services. Tarpaulin sheets must be placed to avoid leaching of oil into ground.
2	Fire breakouts	Training of workers regarding flammable substances will be ensured. SOPs of fire prevention will be adopted like forbidden of smoking, regular testing of electricity infrastructures and regular testing of gas supply system to theDHA.Firefighting equipment must be kept in working condition at site.
3	Safety/security concerns	Safety of the workers and others will be ensured. Privacy of the neighbors will not be disturbed.



4	Malfunction of utilities	It is proposed to appoint maintenance engineer with technicians like plumber and electrician for smooth operation of utility services.
5	Occupational Health, Safety and Environment	• Regular medical check-ups must be ensured to improve the working condition and efficiency of workers. • Safety of management, workers and visitors must be ensured. • Observance construction and safety codes must be ensured. • Provision of emergency exits must be ensured.
6	Production of Solid Waste	Area for solid waste must be reserved within the subject project. The solid waste must be managed on regular basis. The domestic waste will be disposed-off in environment friendly way.

ENVIRONMENTAL MANAGEMENT PLAN

Aspect	Impact	Mitigation	Monitoring parameters	Location	Monitoring	Frequency monitoring	Responsibility
Construction phase							
Air	Chronic health affects Reduced visibility on roads	Sprinkling of water Tuning of construction vehicles & machines Dust masks for laborers	Particulate Matter Smoke CO, Sox	All project locations	Vehicular emissions Dust Ambient air quality	Quarterly for emissions and daily for dust	HSE Manager/ Proponent
Noise	Stress Hypertension Hearing loss Headache	Avoid working at night Lubrication of construction vehicles Ear plugs	Noise levels	Project location close to residential areas	Noise monitoring device		HSE Manager/ Proponent
Land & Soil	Erosion due to excavation Formation of pits due to improper backfilling	Proper backfilling and stone pitching around the excavated site if required	Surface topography	All project locations	Visual assessment Photographic evidences	From beginning till completion of project	HSE Manager/ Proponent



Vegetation	Cutting of trees	Avoid unnecessary cutting of trees In case of cutting of trees, one plant should be replaced by 6 plants	No of trees cleared or cut Disposal of chopped trees Ensure replantation by 1:6 ratio of same species	All project locations	Visual assessment Photographic evidences	From beginning till operational phase	HSE Manager/ Proponent
Water	Wastage and misuse of water	Avoid unnecessary use of water Prevent leakages	Water supply and use	All project locations	All project locations	From beginning till the end of project	HSE Manager/ Proponent
Construction debris	Formation of heaps Remaining concrete material results in hardening of ground surface	Avoid wastage of concrete material Reuse remaining construction material	Quantity & quality of construction material	All trenching areas	Visual assessment Photographic evidence	Weekly	HSE Manager/ Proponent



Social Environment	Disturbance to routine market and local business activities Conflicts between laborers and local communities	Specify time scale for construction activities Discussion with local people regarding conflicts if any	Maintenance of complaint register	All project locations	Review of complaint register Local consultations	Monthly	HSE Manager/ Proponent
Roads and networks	Traffic congestion Night time visibility of drivers is reduced	Diversion routes must be allocated to maintain traffic flow Signs and reflectors must be boarded for driver's visibility	Signs and detours are being followed	Intersections of diversions	Observations Local residents consultations and log book	Weekly	HSE Manager/ Proponent
Health and safety	Lack of awareness to general public about safety may lead to accidents Incompetent and untrained workers	Safety symbols and instructions will be boarded at work sites Trained personnel will be appointed for the specific work	Safety precautions Use of PPEs	On all project sites	Tool box talk Visual assessments Record of PPEs	Daily	HSE Manager/ Proponent



	might cause harm to themselves and others. Construction works may include many risks and hazards that may lead to injuries or even death	Appropriate PPEs must be used for technical work					
Operational Phase							
Electric Magnetic Field (EMF)	Human health impacts such as, neuropsychological disorders or cardiovascular diseases	Increase depth of cables to suppress the EMF levels Appropriate cabling with protective shields to suppress electron flux	EMF Intensity	Residency units near the corridor and grids	Electromagnetic meter	Biannually	HSE Manager/ Proponent
Transformer oil spillage	Contamination of soil and water bodies	Regular checking of storage tanks and machines	Soil sampling for oil and grease	Grid station	Visual assessment Soil analysis Equipment maintenance record	Bi annually	HSE Manager/ Proponent



CHAPTER # 7

STAKEHOLDERS PARTICIPATION

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.

In order to evaluate the socioeconomic and environmental impacts, filed surveys are extremely essential. In addition to the surveys at the preliminary stage, consultation with the community and their active participation plays a vital role in successful implementation of the project. 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 pages.

Objectives of Consultation

Public consultation plays a vital role in studying the effects of the project on the stakeholders and in the successful implementation and execution of the proposed project. Public involvement is a compulsory feature of environmental assessment, which leads to better and more acceptable decision making. The objective of the consultation with stakeholders is to help verify the environmental and social issues that have been presumed to arise and to identify those which are not known or are unique to the construction of the proposed unit.

The important general objectives of the consultation process are:

- Information dissemination, education and liaison;
- Identification of problems and needs;
- Collaborative problem solving;
- Reaction, comment and feedback on proposed project;
- Documenting mitigation measures proposed by the stakeholders;

Methodology of consultation:

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 workers, villagers, shopkeepers, drivers etc.
- Environmental consultants and social specialists and documenting the opinions of the stakeholders expressed during the meetings etc.

Proponent's Environment management team

Possible impacts and mitigation measures related to the subject project were discussed with the project proponent and management. They assured to take all suggested mitigation measures to control any discrepancy arose by the project and to make the project environmentally friendly.

Responsible Authority

Management of, DHA Lahore. is the responsible authority to take all measures prior to start the activity.

Environmental Practitioners and experts

Team of M/s Pak Green Enviro-Engineering Pvt. Ltd visited the project site, had discussions with stakeholders and consulted with the local people of nearby and other villages to evaluate the project socio-economic impacts. People provide the massive information about the project and have positive remarks regarding the project development.

Other departments and agencies

For the impact analysis detailed meetings were held with the DHA Lahore. local community, education institutes, health institutes, hospital and NGOs. Issues were discussed that may affect the environment and also the implementation of proposed project. All possible mitigation measures were considered and incorporated in the Environmental Management Plan.

Scoping sessions, focused group discussion and way side consultations were held with the relevant stakeholders in the area. The purpose of such consultations is to obtain the feedback from the relevant persons.

ENVIRONMENTAL PRACTITIONERS AND EXPERTS

Team of Pak Green Enviro Engineering visited the project site, had discussion with stakeholders and consulted with the local people of nearby and other villages to evaluate the project socioeconomic impacts. People of the area belong to different professions like mostly belong to employment, own businesses, doctors, some of them communicated but according to social value of the area they mostly hesitate to communicate comfortably and get pictured. People provide the massive information about the project and have positive remarks regarding the project development.



TARGET POPULATION

The target population was comprised of the Site workers and the people living nearby the site area.

METHODS OF PUBLIC CONSULTATION

Public Consultation was carried out for two days. The following methods were used for public consultation with project stakeholders in order to ascertain their concerns regarding project implementation.

- Focused Group Discussion (FGD)
- Scoping Sessions
- Formal Group Meetings
- Informal Group Meetings

Affected & Wider Community

There is no affected community present in the radius of our study area. PGEE team has consulted with the inhabitants of the different villages. They provided positive remarks regarding the subject project and in the favor of the subject activity for the proposed plant. Stakeholders' participation Performa's and socioeconomic questionnaire were get filled by the inhabitants to evaluate the project socio-economic impacts. List of respondents and socioeconomic questionnaires are attached as Annexure-F with the report. Stakeholders consultation forms are attached as Annexure-F

STUDY AREA

The proposed plant site and its surrounding areas were visited for socio-economic aspects. The people of following surrounding village of the proposed plant site were consulted:

In addition to the above categories, authorities of administrative and educational institutions, commerce and Investment Department (C&I), Environmental Protection Department (EPD) etc. were also consulted for more effective participation and appraisal of the proposed project.

STUDY SIZE



About twenty-three (23) individuals from general community with different socio-economic conditions were surveyed. These were ranged in age from 20 years to more than 50 years. The information of these respondents is summarized in table 5.1 below.



Issues Discussed:

Following issues were discussed during the stakeholder consultation:

- Overall activities of the project;
- Possible impacts on natural vegetation, air, land and properties;
- Possible mitigation measures;
- Benefits of the project specifically for the local people.

STUDY INSTRUMENT

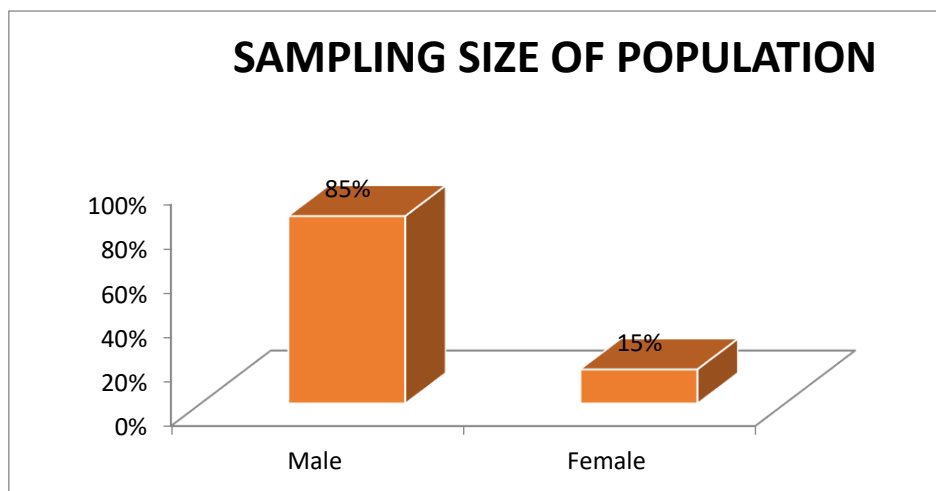
Data collection tool used was questionnaire; it was 18 items based semi structured questionnaire attached as Annex-3. The questionnaire was designed to address education, employment and population issues. Their responses were duly recorded. Some of the questions were asked not only to get the information but also to get the impression of an interviewee.

pictures

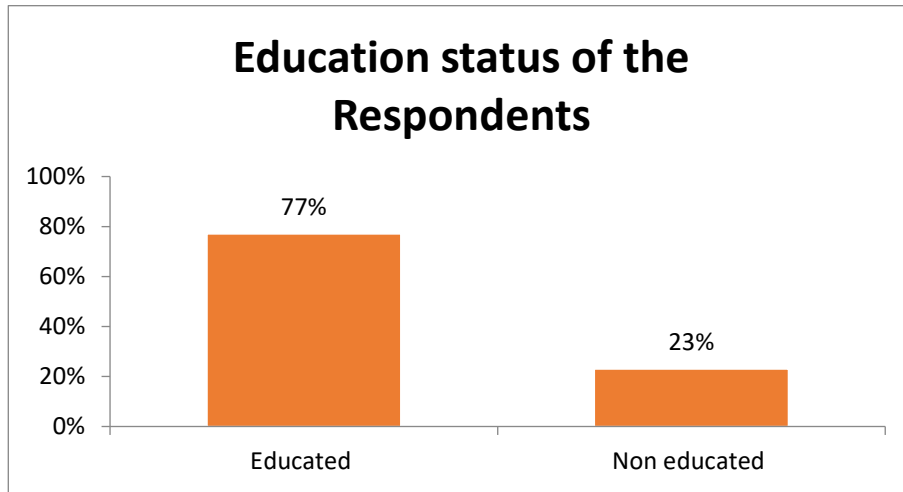
Statistical Analysis

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

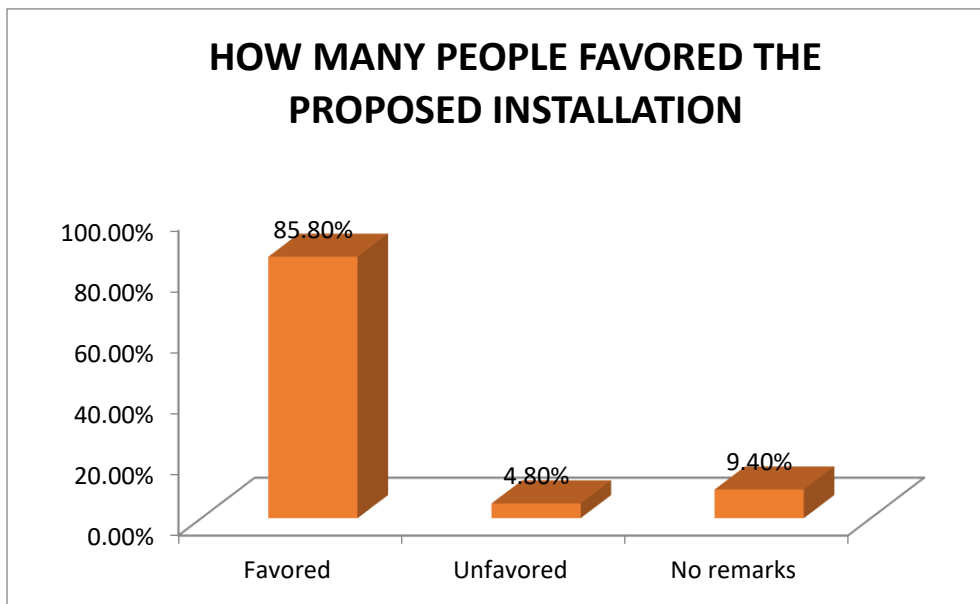
Graphical representation of analysis is given below:



In the sampled population, 85% respondents were male while 15% respondents were female. The number of female respondents is less as compared to male respondents because according to the social binding female hesitates to respond or communicate comfortably.

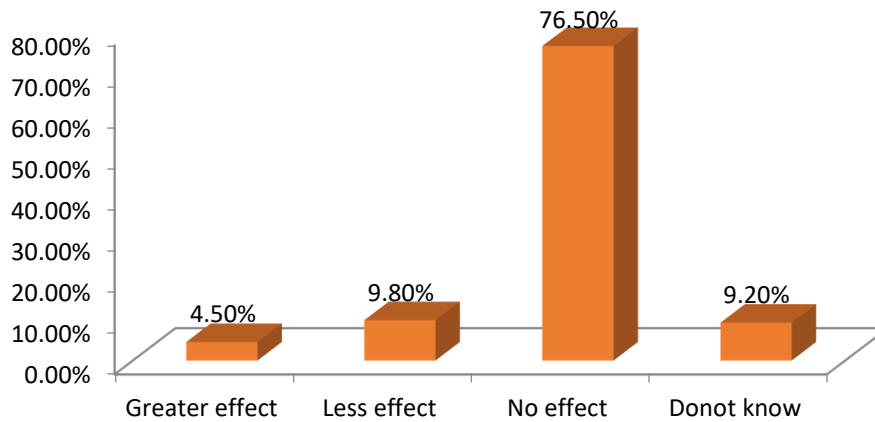


In the sampled population, 77% respondents were educated while 23% were uneducated. Overall education status of the area is good.



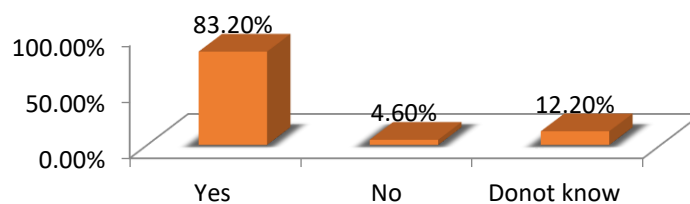
As per survey, 85.80 % people favored the proposed project and they gave positive remarks regarding the subject project. While 9.40% respondents had no opinion regarding the project and 4.80% respondents were not satisfied with the proposed project because they think that development will affect the natural aesthetics of the area.

ACCORDING TO YOU, HOW MUCH EFFECT THE PROPOSED PROJECT WILL HAVE ON ENVIRONMENT?



As per survey, 4.50% respondents said that subject project will affect the environment of the area, 9.8% said that there will be less effect on the environment, 76.50% respondents said that the project will not affect the environment and 9.20% said that they have no idea regarding the subject project. Most of the population was not aware about the environmental importance; they were giving their remarks according to their own knowledge.

ACCORDING TO YOU, WILL THE PROJECT IMPROVE THE STANDARD OF THE AREA ?



As per survey, 83.2 % people said that the project will improve the standard of the area, 4.60% said that it will have no impact on the area while 12.20 % respondents gave no remarks.

Findings of the Overall Discussion:

- It will enhance the socio-economic conditions/values of the area.
- Project will increase revenue generation for the Government.
- It will create employment opportunities.



- Local people will be given preference for employment in the proposed project.
- Installation of Grid Station will be completed in the designated timeframe to limit adverse impacts of construction.
- There will be no significant additional load on the existing infrastructure i.e. utilities of water, telephone, electricity etc. due to the development of the proposed project.

Majority of people favored the proposed project in a sense that the construction of the said project will generate employment opportunities for local people and revenue for the government, will enhance the socioeconomic conditions of the area and automatically will contribute to the national economy of the country.



CHAPTER # 8

CONCLUSION AND RECOMMENDATIONS

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

Conclusions

The EIA of the proposed transmission network project has achieved the following goals:

- Identification of national environmental regulatory requirements that apply to the proposed project activities;
- Identification of the environmental features of the project area including the physical ,biological and social disturbance and likely impact of the project on the environment;
- Recommendation of appropriate mitigation measures that Management of Sector -Sector-T (Gobindpura_ Phase-VII(Overseas Enclave),DHA lahore will incorporate and ensure as per this EIA into the project to minimize the adverse environmental impacts.

Baseline physical, biological and socio-economic and cultural data and information was collected from a variety of primary and secondary sources, including field surveys, review of relevant literature and online publications. The collected data was used to organize profiles of the physical, biological and socio-economic environments, likely to be affected by the project. Communities were consulted as per public consultation processes including women, men and institutional stakeholders. The aim of public consultation was to assure the quality, comprehensiveness and effectiveness of the EIA; as well as to ensure that the views and opinions of the local people were adequately taken into account in the decision-making process. Further an Environmental Impact Assessment Report was made to highlight the potential impacts of the described project on the area's physical, biological and socio-economic, gender and cultural environments.

It is concluded that the potential impacts of the proposed project (Grid addition) will be insignificant on most of the environmental receptors, provided that the EMP and its mitigation measures proposed in this report are implemented in true spirit. However, some area will need special care with regards to the disturbance to the community of the area. Management of Sector-T (Gobindpura_ Phase-VII(Overseas Enclave),DHA lahore must be constituted to ensure minimum impacts.

Recommendations

- In view of the comprehensive screening process and findings of the present study there is no need of conducting further investigations.



- Tree plantation inside the unit and near the unit is recommended.
- The untreated wastewater will not be reused for irrigating the vegetation and lawns.
- High standards of bio-security and safety will be enforced during operation stage. Safety of the workers will be top priority for the management.
- The Management of Sector-T (Gobindpura_ Phase-VII(Overseas Enclave),DHA lahorewill continue to assist the local communities as a corporate/social responsibility.
- The present EIA report is enough to meet the administrative and legal framework. Therefore, the environmental approval may be accorded for the present project.

