Final Report

Environmental and Social Due Diligence Assessment of Sangrur RNG Pvt. Ltd., Vill. Fatehgarh Panjgaraian, Tehsil- Dhuri, District- Sangrur, Punjab.

Input Feed Material- 240 TPD Paddy Straw
Output- 20 TPD CBG & 113 TPD Manure

Submitted on: **10 June 2023**

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Preamble

This report is based on the Environmental and Social Due Diligence (ESDD) assessment carried out for assessing EHS performance and compliance of the Sangrur RNG Pvt. Ltd., Dhuri, Punjab developed by M/S EverEnviro Resource Management Pvt. Ltd. (ERMPL) with national legal requirements on environment, health & safety; International Finance Corporation (IFC) Performance Standards; Eversource ESGMS and World Bank Group's Environmental Health and Safety Guidelines. The findings and conclusions included in this report have been arrived at through site visits, interactions with relevant team from the Company, and review of compliance mechanism and management system.

Telecon dates	*06th December 2022 with* • *Mr. Sandeep Shrivastava (Head - ESG)* • *Mr. Shajahan Ali (Vice President - Environment)* • *Mr. Rajkumar RG (ESG Manager)*
Assessment Location and Field discussion	*13th December 2022 with* • *Mr. Rajkumar RG (ESG Manager)*
Assessment conducted by	• *Akshay S. Nare (Auditor)* • *Anjali Pala (Auditor)* • *Megha Roy (Auditor)* • *Vishwa Trivedi (Team Leader)*

It should be noted that, while efforts have been made to address as many significant aspects and issues as possible to verify conformance with the reference framework, the assessment is subject to the documents and records presented by the company; sampling during audit; discussions with company representatives and understanding of site conditions through discussions and photographs. Therefore, absence of a comment on any environmental and social related issues does not necessarily imply conformance with the relevant requirements of the specified standard/ regulations.

The material in this report reflects EMC's best judgment in light of the information made available to it at the time of report preparation.

Any use that a third party makes of this report, or reliance on, or any decision to be made based on it, is the responsibility of such third party. EMC accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions taken based on this report. In addition, the information provided in this report is not to be construed as legal advice.

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Abbreviations

BMTPC	Building Materials and Technology Promotion Council
CPCB	Central Pollution Control Board
DG set	Diesel Generator set
EC	Environmental Clearance
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
E&S	Environmental and Social
EHS	Environmental, Health & Safety
EHSS	Environment Health Safety and Social
EMC	Environmental Management Centre
EPF	Employee Provident Fund
EPRP	Emergency Preparedness and Response Plan
ESAP	Environmental and Social Action Plan
ESDD	Environmental and Social Due Diligence
ESMS	Environmental and Social Management System
ESI	Employee State Insurance
HR	Human Resources
HSE	Health, Safety and Environment
IFC	International Finance Corporation
INR	Indian National Rupees
KWH	Kilo Watt Hour
KVA	Kilo Volt Ampere
LPG	Liquified Petroleum Gas
MSDS	Material Safety Data Sheet
NABL	National Accreditation Board for Testing and Calibration Laboratories
NOC	No Objection Certificate
NGO	Non-Governmental Organization
OHS	Occupational Health and Safety
PPE	Personal Protective Equipment
PM	Particulate Matter
PUC	Pollution Under Control
RCC	Reinforced Cement Concrete
RO	Reverse Osmosis
SHE	Safety Health and Environment
STP	Sewage Treatment Plant
SPCB	State Pollution Control Board
WB-EHS	World Bank Group's General Environmental, Health & Safety Guidelines

1 Introduction

1.1 Background & Scope

EverEnviro Resource Management Pvt Ltd (ERMPL, the Company) is involved in the business of handling Solid Waste Management encompassing Municipal Waste, Agricultural Waste like Paddy Straw, and Press Mud (waste from sugar mills), and Construction & Demolition Waste.

ERMPL engaged Environmental Management Centre Private Limited (EMC) to conduct Environment and Social Due Diligence (ESDD) assessment of its eight (8) projects across India with the objective to determine risks and impacts associated with the projects and aligning with EverEnviro's EHS policy and commitments for its projects mentioned in **Table 1** with the timeline mentioned in the schedule.

Table 1: List of Eight (8) Projects for ESDD Assessment

#	Type of Project	Location	Number of Projects	Dates
1	**Paddy Straw to Bio-CNG Projects (State of Punjab)** This project procures Paddy straw from the farmers and uses anaerobic digestion to convert the feedstock into Renewable Natural Gas (RNG) and compost.	Dhuri, Patran, Jagraon, and Gurdaspur	**4**	12 – 16 December 2022
2	**Press Mud to Bio-CNG Projects (State of UP)** This project procures Press Mud from the Sugar Mills and uses anaerobic digestion to convert the feedstock into Renewable Natural Gas (RNG) and compost.	Balarampur and Kumbhi	**2**	19 – 21 December 2022
3	**MSW- Bio-CNG projects (Delhi, UP, Gujarat and Karnataka)** This project collects and transports Municipal Solid Waste and using anaerobic digestion converts the feedstock into Renewable Natural Gas (RNG) and compost.	Okhla, Delhi	**1**	19 – 21 December 2022
4	**C&D Waste Recycling Project** This project collects and transports construction and demolition waste and converts them into aggregates and value- added products using sustainable technologies.	Jahangirpuri, Delhi	**1**	19 – 21 December 2022
Total Number of Priority I Sites to be assessed			**8**	

This report presents EMC's assessment of the **Sangrur RNG Pvt. Ltd., Dhuri, Sangrur, Punjab** project based on requirements of the reference framework, and an Environmental & Social Action Plan to address the non-compliances and gaps identified.

1.2 Reference Framework for ESDD

The reference framework for the ESDD included:

a) Applicable local, national, and international environmental and social (including occupational health and safety) legislation in India.
b) Good International Industry Practices (GIIP)

i. IFC Performance Standards, 2012.
ii. IFC/World Bank EHS General and Sector Specific Guidelines as applicable.
iii. ESGMS requirements of GGEF (developed by EverSource)[1]

1.3 Approach and Methodology

The approach and methodology for undertaking the ESDD as per scope of work and reference framework outlined in Section 1.1 and 1.2 respectively is presented in **Figure 1** and detailed in the subsequent sub-sections.

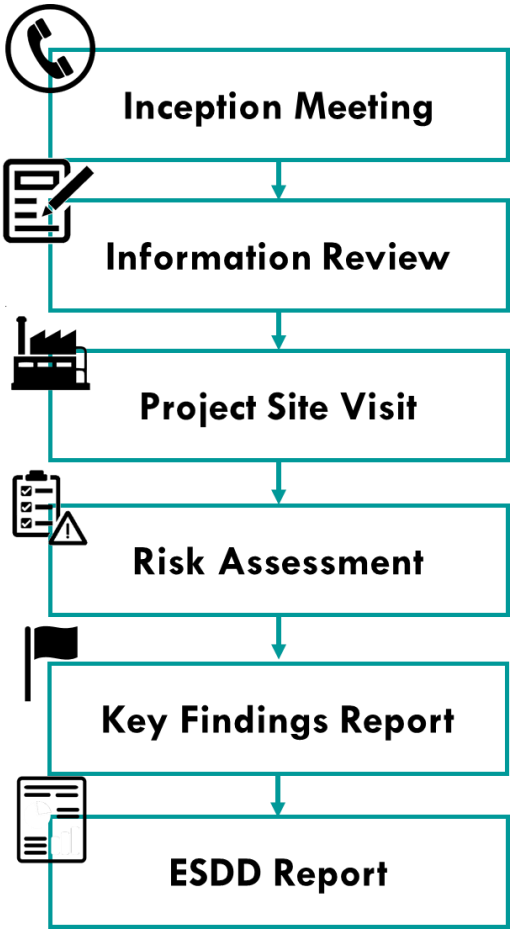


Figure 1: Approach and Methodology adopted for undertaking the ESDD Assessment

1.3.1 Inception Meeting

A conference call was conducted between EMC Team and the Company on 06 December 2022 with the following objectives:

- Explain the background of the assessment (by the Company)
- Obtain a brief overview and updates on the overall operations of project sites (by the Company)
- Explain the approach and methodology that was to be adopted for the assessment (by EMC)

- Finalize timeline of the assessment (by all, and agreed upon mutually)
- Finalize days/dates for conducting the site visits and logistics.

The inception meeting was also be used to identify the point of contact for the ESDD at the Company's end and at the project sites, identify departments and functions with whom discussions would need to be conducted as part of the assessment, and boundaries of assignment.

1.3.2 Information Review

Information obtained from Company.

EMC prepared a **Preliminary Information Checklist** for obtaining information about the Company and the project site under the assessment scope. The checklist covered aspects related to corporate management and project specific information. A list of documents to be kept ready by the point of contact during the project site visit was also included in this checklist.

The information request included (but not be limited to):

- Details about the project site in terms of size, exact location, etc.
- Consents, permits, approvals, and licenses related to the environment, health and safety, and employee welfare.
- Human resources on roll/ contracted/ casual breakdown by gender at various facilities.
- Systems to ensure occupational health and safety; Life, Fire, and Safety (LFS) procedures; and disaster and emergency response management plan.
- Reports of studies- Conducted for the projects such as Environmental Impact Assessment, and Resettlement Action Plan, Records associated with the implementation of management plans presented in the studies.
- Systems to ensure resource efficiency and pollution prevention such as hazardous waste management, effluent treatment, water use.
- Documents related to the management practices and implementation of procedures adopted by the Management on environmental, social, and health and safety at corporate level.

Secondary Literature Review

A review of secondary literature on the Company and the project under the ESDD scope for the items listed below was conducted and is presented in this report:

- Proximity of project to sensitive receptors such as municipal dump sites, critically polluted areas, protected areas, hazardous waste landfills
- Sources of pollution around the project location, especially industrial activities
- Vulnerability to natural disasters
- Company and projects reputation in public domain on E&S aspects

1.3.3 Offline Assessment of Project

Assessment of Project and Company Management was carried out through telephonic discussions on 06th December 2022 with the Company. Discussion topics included:

- Understand the measures planned/ undertaken for environmental, safety and social management on site including grievance handling, worker engagements and training,

procedures for prevention of sexual harassment for women workers, and external grievance management.

- It also involved understanding the following aspects of project implementation:
  - Organization structure, and management at project level
  - Organization's capacity on management of E&S aspects of their business was also understood.
  - Management of implementation of legal compliance requirements in the projects.
  - Land procurement/ purchase procedures for projects, management of land use conflicts.
  - Review of procurement procedures, contracts/ agreements/ work orders to assess the environmental and social aspects included in primary supply chain management/ contractor management.
  - Past actions on management of grievances from community neighboring the projects.
  - Other items from consents, clearances, EMP that are practice based and need to be implemented at site.
- Review of **documents and records** related to environmental and social legal requirements, clearances/ consents/ approvals obtained, records related to compliance with conditions of these clearances etc.
- Review the **emissions** (air quality and noise monitoring), water and wastewater quality monitoring, resource efficiency, energy efficiency, waste management initiatives etc. employed on site.
- Review of **management system documents** (such as E&S policy, emergency plan, standard operating procedures including EHS aspects, system for maintaining legal documents, incident reporting and investigation mechanism, etc.), **records** supporting implementation of the management systems (such as emergency mock drill records, incident investigation reports, training records, worker & community grievance logs etc.).
- Strategy on resource efficiency

1.3.4 On-site Assessment of Project

A site assessment of the project was carried out on 13th December 2022. A walk-through of the project site was conducted, and the key aspects reviewed during the walkthrough included:

- Verification of information provided during the **offline assessment.**
- Extent of implementation of **good and safe construction practices**
- **Occupational health and safety** practices adopted by workers.
- **Housekeeping** across the site
- **Waste management** (construction waste, limited hazardous waste, scrap etc.)
- Worker **housing conditions**
- **Management of plants/ equipment** setup in the project area (such as batching plant, diesel generator sets, electrical room)
- Presence of **child labour, adolescent labour**
- Review of **resource use** such as energy, water, and other materials as relevant based on the secondary data made available by the Company.
- Review of **working conditions at the site** for on roll and contract workers (including but not limited to employment relationship through safeguarding worker rights under national labor

and social security laws and regulations; non-discrimination; forced labor and child labor; freedom of association and collective bargaining; etc.)

- Understanding of worker and labor camp management practices

Procedure of Audit adopted for On-site Assessment of the Project

- The project team was familiarized with the audit scope and agenda. It was followed by an understanding of the project layout, organizational structure, contract details, and status of operational activities at the site.
- A detailed reconnaissance was carried out throughout the project site to understand the ongoing activities, drainage, health & safety, waste management, and labour welfare practices that were being followed at the project site.
- Discussions with the project in charge, safety manager, site admin, contractor's team members, labourers, and security personnel were conducted to understand the implementation of Environmental Health and Safety (EHS) practices at the site.
- E&S regulatory compliance and management system documents and records related to the
- site and its operations were reviewed and discussed with the respective team members. Additional documents required to be reviewed were identified and a request list for the same was shared during and after the site visits.

The list of personnel interviewed during the site visit include:

Table 2 : List of Personnel Interviewed at the Dhuri Site

From ERMPL (the Company)
1. Pankaj Kumar, Project Head
2. Shirish Yadav, EHS Head
3. Prashant Kumar, Operations Manager
4. Prashant Sahu, Mechanical Engineering In charge
5. Shubham Maheshwari, Civil Engineering In charge
6. Sunny Kapoor, HR, and Admin
7. Vivek Jindal, Feedstock In charge
8. Naivi Garg, Store In charge
9. Ashish Verma, Electrical Engineering In charge
From Pooja Jadhav and Associates (the Sub-contractor)
1. Pooja Jadhav, Site In charge
2. Ketan Jadhav, Site In charge

1.4 Risk Assessment

A Desk based Risk Assessment at a Company Level and site visit-based assessment of project was carried out. Documents were reviewed to further analyse the risks to the Company. A Gap Assessment against the Reference Framework was carried out.

1.5 Key Findings Report

Post conclusion of the site visit & interviews, and review of documents received from the Company, a concise back-to-office key findings report focusing on principal findings and identified risks, impacts, and opportunities was prepared. This summary of major observations during the site visit were discussed with ERMPL on 29 December 2022 over a video call and a key findings report in form of a slide deck was shared with them on 31 December 2022.

1.6 ESDD Report

This document presents a detailed final report fully reflecting the scope of work suggested in the proposal submitted by EMC to the company. EMC shared this final ESDD report after incorporating feedback received from the company on the draft ESDD issued to them.

1.7 Organization of the ESDD Report

The conclusion from assessment of the project with the reference framework and actions to address the non-compliances is presented in this report. The report is organized into the following sections:

- The ESDD background, scope and methodology followed are elaborated in Section **1.**
- **Section 2** presents brief details about the Project. The results of the secondary information review, summary of the labour camp, EHSS practices adopted by the Company are also presented in this section.
- Status of compliance of the project under the scope of work with the EHSS Legal Regulations is presented in Section **3.**
- **Section 4** presents the alignment of the project with IFC Performance Standards and WB- EHS guidelines.
- A detailed E&S Action Plan addressing the identified non-compliances and non- conformances in the project under the scope of work indicating prioritization for each action has been presented in **Section 5.**
- Project Categorization is presented in **Section 6**.
- Additional recommendations of the assessment are presented in **Section 7**.

2 About the Project

Project at a Glance

SPV Name	Sangrur RNG Private Limited
Location	Manal -Sikandarpura Road, Vill. Fatehgarh Panjgaraian, Dhuri, Sangrur, Punjab-148020
Project land area	13.7 acres
Coordinates	30°31'02.9"N 75°41'37.7"E 30.517472, 75.693806
District	Patiala
Nearest Access Road	Manal -Sikandarpura Road
Nearest Highway	13 km from SH-13 – Mullanpur Dhaka High way
Nearest Substation	Gurubakhspura Substation at a distance of 5.5 km
Water Required	200 KLD
Source of Water	Ground water
Liquid Fertilizer	Using for making solid compostand Distributed /Sold to Farmers as a Liquid fertilizer
Power Required	11,500 kwh /day
Paddy Straw intake capacity	200 MT per day
Biogas Generation	25,440 m^3 raw biogas per day
Biogas Utilized for Genset	1215 m3/day
CBG Generation	20 TPD
Expected Manure Production (Solid)	~ 113 TPD.
Total Project Cost (including IDC andGST)	Rs 832 Mn.

Project Location:

- The project is located in the village of Fatehgarh Panjgaraian within the Dhuri tehsil of the Sangrur district in the State of Punjab[2].

Status of Work:

- The project is currently in construction phase and is expected to commence operations in 2024.

Connectivity:

- The project is located on Manal-Malerkotra road that connects State Highway 51 and is well connected by road. The project is bordered by Manal-Malerkotra Road on south, while other three sides of project is bordered by farmlands.
- The nearest highway accessible from the project location is the State Highway 51 located approximately 10 km north-east from the project location.
- The nearest railway stations are Barnala (approximately 25.1 km south) and Malerkotla (approximately 20.7 km east). In addition, the project is also located in proximity to the Malerkota Bus Depot (approximately 20.6 km east).
- Shaheed Bhagat Singh International Airport, Mohali is located approximately 140 km east of the project.

Social Infrastructure:

- Civil Hospital, Malerkota is located at approximately 20.5 km.
- Thilluwal Police Station is located at approximately 7.0 km distance on Manal-Malerkotra Road to the south side of the project.
- Raikot Fire Station is the nearest Fire station from the project location at a distance of 21.2 km to the north of the project.

2.1 Project Description

Feed materials

Rice Straw will be the principle feed stock material in this project. Daily 100 MT feed need to be fed in to the digester containing max. 15% moisture.

Particle size of Rice Straw has to be restricted to 0.8-4 mm which is planned to ensure through introduction of a Coarse and fine shredders. Rice straw will be received in the form of bales. Bales will be lifted through Bale grabber and transferred from one place to another. De-baler will help to lose the biomass and then fed to the coarse shredder through conveyer which will further go to fine shredder through another conveyer. In case of round (cylindrical) bales, de-baler will separate the nylon cover and open the bale directly on the feed conveyor. In case of rectangular bales, the bale twine will be cut and removed manually when the bales are getting onto the conveyor.

Conversion factor table

Expected conversion factor (yield of Biogas from a ton of feed type mapped along with content moisture) is presented in the table below:

Sr. No.	Feed	Moisture	Yield Biogas m^3/ton of feed (as is approx.)	Methane Content (approx.)
1	Rice Straw	Max. 15%	378	52%
	100 Ton		37,825 m^3 Biogas 14.8 ton CBG	

Storage of Feed

A platform will be constructed to receive feed. Feed handling will be mainly manual through deployment of trained work force for the job.

The operational details and sequencing will be formulated and announced after Beta testing during commissioning period.

Shredded material will be stored on a platform and from here, the total load will be transferred to feed mixing tank by conveyer.

Feed Mix Tank

It is proposed that there will be Three (3) feed mix tanks. The dimensions of feed mix tanks are designed as 9 m dia. and 4 m height with 2 ~2.5 m below the ground level and 1 ~1.5 m above the ground level. These tanks will be open from top.

The platform height is adjusted such that sedimentation, if any, within the tanks that may happen over a period of time can be easily removed with the help of poclain/JCB or the loader.

There will be one submersible mixer in each feed mixing tank. The slanting mixer will be mounted through the wall with anchoring at the bottom. Each tank will have one mixer, level sensor, high level switch and nozzles for inlet and outlet of slurry.

Signals are picked up from level sensors and high level switch. These signals are used to control pumping downstream of feed mix tanks. Alarm system or an annunciator will be in place for solid liquid separator that is feeding slurry in form of permeate to the feed mix tanks.

Equipment required and functionality

Sr. No.	Equipment	Functionality	Automation
1	RCC Feed mix tanks, 5 Nos.	Feed mixing pit	Level sensor, high level switch, low level switch
2	Slant mixers	For mixing the slurry with feed	Nil

Pumping Platform

There would be three progressive cavity pumps. These pumps are meant to handle viscous fluids. Pumps are equipped with temperature sensors, pressure sensors at both ends (inlet and outlet). Any restriction in the pump operation will be indicated through signals from substrate meter, winding temperature and pressure sensors at both ends of pump. These are basic controls available for both pumps.

On the downstream of the pumps there will be a common header connected to the inlet nozzle of the Digester. The arrangement of pumps will be in such a manner that all pumps will be connected to all three feed mixing tanks. Pump A will be able to pump either from Tank A, Tank B or Tank C and simultaneously Pump B will be able to pump from either Tank A, Tank B or Tank C or all will be able to run simultaneously if need be. This logic will be built in PLC.

Equipment required and functionality

S. N.	Equipment	Functionality	Automation
1	Feed pumps 3 nos. @ 100m^3/hr capacity	Feeding slurry to digester	Temperature, Pressure inlet, Pressure Outlet
3	Substrate piping and fittings	Carry slurry to digester	Nil
4	Knife valves	Isolation for feed tanks, pumps, digester nozzles	Pneumatic circuit signal to be configured in DCS

Digesters

Total Three (3) digesters are proposed. Size of digester will be 32 m Dia x 8.5 m height with about 65cm of free board height. The digesters proposed are RCC digester of the Continuously Stirred Tank Reactor (CSTR) type. Essentials of CSTR digester are

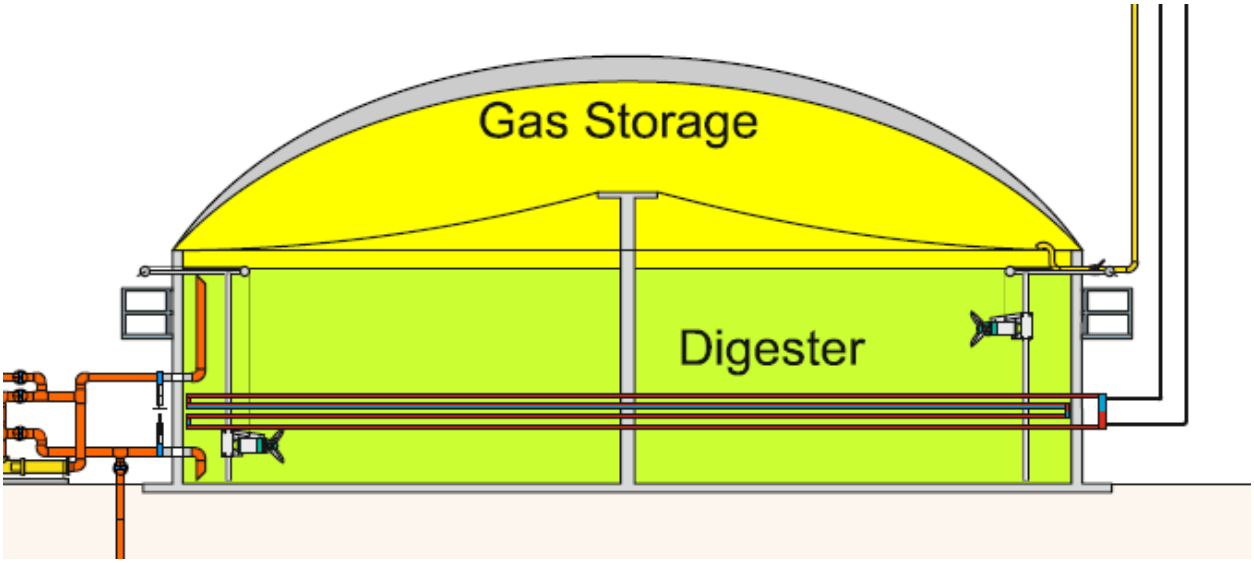
a) Stirred continuously and homogenously
b) Temperature controlled
c) pH monitored

The quintessential characteristics of the stabilized CSTR digester will be a uniform slurry and a steady temperature of about 37~39 Deg C. (mesophilic). Slurry Total Solids (TS) content is maintained at around 6% - 8%.

Equipment Required and functionality

Sr. No.	Equipment	Functionality	Automation
1	Turbo speed Mixer	For continuous stirring	Nil
2	Mast	Adjustment of height & angularity of mixers	Nil
3	Bull eye	Side view window	Nil
4	Over-/Under pressure Sensor	For Under Over pressure control	Pressure sensor
5	Ex- Light	Lighting for bull eye	Nil
6	Ex-CAM	Lens camera for bull eye	Nil
7	Monitoring Island, gas zone	O/U pressure & foam Liquid max level monitoring	Gas Level sensor
8	Monitoring Island, Submerged level	Substrate sample testing, temp monitoring & liquid level control	Nil
9	Thermowell Analog Thermometer	For temperature monitoring in digester	Nil
10	Hoy water generator and heating coils inside digester	For service media as hot water (coils of SS)	RTD/Thermocouple
11	Pneumatic Valve	Actuator for Knife valves	Nil
12	Max Level watchdog	Monitor max slurry level in digester	Level Sensor
13	Liquid Level sensor	Liquid level monitoring in tanks	Level Sensor

Digester Tank



Temperature calculations and heating system design

The digester system will have heating coils inside digester with inlets and outlets to these coils. The water circulating in these coils will be maintained at certain temperature. Based on the signals from RTD/thermocouple, we will start/stop the hot water pump which will draw hot water in from the hot water tank. The hot water tank will gain heat from boiler using raw biogas as feed to the boiler.

Mixers Nozzles and Connections

Based on the TS and Viscosity anticipated, it is proposed to install 6 (six) mixers on each digester so total Eighteen (18) nos. of Turbo Speed mixers of 17 kW each to ensure CSTR conditions. These mixers are proposed to be fitted on Eighteen (18) masts with arrangements for adjustment of height and angularity that can be done from outside of the digester. The assembly will be such that we will be able to rotate mixers on three masts at any desired degree and the vertical position of the mixers will also be adjustable form outside. The positioning arrangement is manual. This is ensured with a special mast design. Mixers are fitted on a bracket that travels on the mast and is held at a place with help of a guy rope. The rope can be wound from outside. Mast is fitted to bottom in a manner that it can be rotated along its axis to certain degrees. Bracket has a mechanism to allow mixers to be fitted horizontally or at an angle to the horizontal tilting upwards or downwards.

Digester has various inlet outlet nozzles each fitted with manual knife valve and automatic knife valve. The automatic valve is pneumatic type. The solenoid and pneumatic circuit will be controlled by PLC. The logic will be built in our PLC.

There will be one inlet and one outlet nozzle for slurry. This will be required because not always the liquids from separator would suffice quantity of fluid required to be mixed with feed. We may have to draw additional slurry from digester directly. Hence the outlet nozzle would be necessary. All piping is proposed

to in PVC and of the grade PN10. Pipes will be painted from outside. All pipe connections are DIN connections. Pipes are glued and fusion welded to the fittings.

There will be a digester monitoring platform where we would receive output of temperatures at different points. There's an RTD probe and a thermocouple attached to it. We would receive 4-20 mA temperature signal from digester which will have to be configured in the PLC. The gas outlet pipe would come from the bottom of the digester. All nozzles would be at the bottom of digester. Core cutting will be all near the bottom mostly except for the Bull Eye view that will be at the top.

Digester would have a liquid level sensor, gas pressure sensor and gas level sensor. The gas pressure sensor would give us indication of pressure inside the gas roof which will be further useful as input signal to start scrubbing system. The liquid level sensor will tell us how much to feed. Multiple temperature sensors will tell us quantity of water to be circulated and the intervals at which circulation needs to be done.

Equipment required and functionality

S. N.	Equipment	Functionality	Automation
1	Turbo speed Mixer (17kW)	Stirring	Nil
2	Mast	Adjustment of height & angularity of mixers	Nil
3	Automatic Knife Valve	Isolation	Pneumatic circuit signal to be configured in DCS
4	Bull Eye	For view	Nil

Gas roof

It is proposed to install a double membrane gas roof for the digester. Gas roof is made up of two membranes with a gap between two membranes. The outer membrane is made up of PVC coated polyester fabric. The gap will always be pressurized to maintain conical shape of outer membrane. Pressurization will happen through blowers positioned at 180 degrees from each other. Electrical power would be supplied to these blowers through an online UPS backed up by sufficient battery back-up system to ensure that outer membrane never collapses on inner membrane to avoid caving of the roof. This is very important from safety point of view. Damage could also cause economic loss to the plant. These blowers and their management hence needs to be planned very carefully.

The pipe for gas collection will run vertically on the wall of the digester and open in the head space area/gas roof area to draw biogas out.

Inside the digester there is a central pillar to support gas roof. Inside the digester. On the periphery, gas roof fitment is done by a taut tube which is an inflated pneumatic pipe with a certain air pressure. We have provided a dedicated air compressor for that. This compressor is different from air blowers. The function is only to provide the tightening pressure to the tube which fits in groove on flat surface of RCC tank to hold the conical roof.

It is proposed to install a pressure sensor to know the pressure (and thus) the gas storage inside gas roof at any point of time. Another mechanical content gauge assembly with a wound rope to show inflation of the

inner membrane to know gas storage volume is also provided. Signals of both these will be configured on the DCS.

There is also a high-pressure electronic alarm for gas roof and a mechanical assembly for over pressure relief and under pressure (vacuum) protection.

Equipment required and functionality

S. N.	Equipment	Functionality	Automation
1	Blower	To maintain gap between Inner & Outer membrane	UPS Supply
2	Air Compressor (7 bar)	To maintain air supply & pressure to the taut tube for holding conical roof	Pressure Sensor, Gauge assembly
3	Mechanical PVRV	Over pressure & under pressure protection	Nil

Gas Up-gradation / Refinery

Gas generated in the digester and collected in gas roof is transferred to refinery. The lowest point of the premises in the path going towards the PSA system is identified and a condensate pit is constructed to accumulate moisture in the raw biogas. This pit will have moisture trap and condensate pump. Pump will have automatic operation. The signal for this operation will be generated using a level sensor in this condensation pit. The condensation pump will have to operate on this signal to take excess water out to accommodate further condensate.

After the moisture trap, E&H flow meter will be installed on the line. One tap downstream to the pipeline would go to the boiler to fire the gas and heat up the heater. The main pipeline would go to the Minor Pressure Swing Adsorption (MPSA) system.

MPSA system is a typical PSA system that operates on very moderate pressure (< 1 bar(g)) and a vacuum pump (generating about 700 torr/mmHg vacuum). We have designed a system divided in two parts viz. phase-I and Phase-II system. Phase I will have a blower followed by H_2S removal unit followed by moisture removal system that consists of a heat exchanger (backed by a cooling tower), condensation (effected by a chiller) and desiccant dryer (purge is synchronized with CO_2 removal vacuum cycle). So it will sequentially remove H_2S, moisture and then will pass through Phase-I CO_2 removal system. The exhaust of CO_2 removal system will be collected in a cylindrical balloon. The balloon is a simple balloon with a safety vent with practically no instrumentation there. Occasionally we could take readings there with the help of hand held analyzer. Pure gas from phase-I PSA will go to surge tank and further to the buffer tank. It will then go for further compression process. The exhaust from Phase-I collected in balloon will act as a feed for the Phase-II system. In Phase-II system, pure gas will again go to buffer tank and then to compressor. Exhaust from the Phase-II PSA system will be released to atmosphere.

A handheld analyzer is proposed to be procured to measure the percentage of methane that we let out. In the entire MPSA system we will be monitoring pressure and temperature at various points, H_2S post moisture

removal system with an additional tapping. We may measure dew point also using the same of different tapping close to it. Then we will have CO_2 monitoring system and at the end we will again measure all the parameters including CO_2, CH_4, H_2S, Dew point of moisture and O_2 levels. All this could be measured on a combined panel. The system could be a dual channel system to have pre scrubbing and post scrubbing readings. All recorded data is expected to go to DCS and hence a separate data recorded is not expected to be placed here.

Equipment and Functionality

S. N.	Equipment	Functionality	Automation (i/os)
1	Condensate Pump	To take excess water out from condensate pit	Level sensor
2	Ultrasonic Flow meter (E&H make)	To measure biogas flow	Flow, Pressure
3	Vacuum pump (700 mm of Hg)	For biogas purification system pressure	Nil
4	Roots Blower (0.7 bar)	To increase biogas system pressure	Pressure sensor
5	Desulphariser	H2S Removal	Nil
6	Pre-cooler	Biogas cooling	Nil
7	Chiller	Biogas Condensation	Nil
8	Moisture Separator	Moisture removal	Nil
9	Dryer	Moisture removal	Nil
10	MPSA Tower	Removal of H2O,CO2 & H2S	Nil
11	Surge vessel (30 m3)		Nil
12	Fine filter		Nil
13	Pneumatic actuated changeover valves	For Isolation	Pressure Sensors
14	Portable analyzer	Measure CH4 %	Nil
15	Gas Analyzer	Measure CH4,CO2,H2S,O2,N2	Data recording to DCS
16	Buffer Tank	Pure Gas Buffer storage	Pressure Sensors/transducer
17	Bio Gas Cylindrical Balloon	Feed for Phase-II PSA System	Nil
18	Cooling Tower (40TR)	To supply utility water for MPSA System	Temp Sensors
19	Air compressor	To supply Instrument air	Pressure sensor
20	FRL Unit with auto drain	For Instrument air to system	Nil

At the end of this sequence is a buffer tank with design pressure of 1.5 bar (g) and normal operating pressure of 0.1 to 0.7 bar. Pressure sensor/transducer is installed to detect pressure in the tank. Based on this pressure reading we will have to start the compressor which is downstream of the scrubbing system and is located in the E & F license area of the installation

The buffer tank is directly connected to the compressor and hence the pulsating load calculations for that will have to be made. Compressor will have VFD, with a typical lag/ramp up time of 8 to 10 seconds. It is expected that it manages pulsating load/high suction load using this VFD.

Entire MPSA system operation hinges on effective operations of number of pneumatic solenoid valves. A reliable air compressor and an air receiver is proposed to be installed to ensure trouble free operation. A robust Filter, Regulator and Lubricator (FRL) unit is also proposed to be installed with automatic drain system.

Filling and Storage

Filling and storage area is covered under PESO license under Gas Cylinders Rules, 2016 under form E&F. We are complying with all distance and safety requirements stipulated under the rules and as directed in the approval letter by PESO. There is a fire resistant, and impact resistant wall erected separating high pressure compression area and cylinder cascade. Valves of all cylinders face the wall.

Buffer tank situated at the end of line in the PSA zone contains pure Methane complying with the specifications laid down under BIS 16087:2016. The same is transferred at about 0.5 bar (g) to the compressor situated in the E&F licensed area. The compressor is a water cooled four stage compressors with a capacity of handling 300 Nm^3/hr and capable of developing pressure of over 220 bar (g). This requires a principal utility of a cooling tower/system of 10TR with close circuit radiator.

It is proposed to carry compressed gas to cascades through high pressure piping starting with a manifold. This manifold will house the safety relief valves, non-return valves, a mass flow meter and a tapping connecting to the high-pressure regulator to reduce pressure for gas analysis.

The details of this manifold system, the PID, and all other detailing appears in the bill of quantities.

The compressed and measured AgroGas (BioCNG) is proposed to be filled in cylinder cascades to be dispatched to the daughter station. It is proposed to have two filling points for the cylinder cascades. Fill post will typically include installation of emergency switch, fill press button and Elaflex/staubly high pressure hoses, pressure transmitter and a zero potential contact to switch off compressor.

We then have flameproof Electrical Overhead Travelling (EOT) crane for cascade loading mechanism. It is proposed that the floor level (FL) of this shed is not far above the ground level (GL). Truck transporting cascade will arrive at premises and will park itself in reverse direction inside the shed in such a manner that EOT hook will be able to lift empty cascade from the floor of the truck. Once the cascade is lifted using EOT and lifted high enough for truck to pass, truck will shift forward to allow EOT to keep the empty cascade away. Truck will be again brought back to the position where it stood while unloading the empty cascade. EOT would now pick up a filled cascade and load it on the truck. Cascade will be secured using anti-static belts while lifting and lowering. Loading bay will have crash guards installed to prevent backing of truck into filling area. Wheel chokes are applied to truck once it is in position in the bay. All vehicles in the plant are made to wear Spark Arrestors (anti sparking cover for vehicle silencers) before entering the premises (except for the safe zone/s). There would be a map of premises clearly showing hazard areas and safe zones.

Clear instructions and illustrations are placed at all locations with safety signs and DOs and DONTs.

Except for limit switches on the FLP EOT, no automation is proposed in this region. These switches would be hard switches restricting movement beyond predefined boundaries. EOT panel should have these inputs hard coded in its control system.

Equipment required and functionality

S. N.	Equipment	Functionality	Automation (i/os)
1	Compressor (300 Nm3/hr)	To compress pure gas & storage into cylinders	Low Gas Suction Pressure, High Gas Discharge Pressure, Low lubricating oil pressure, low cooling water pressure/ flow, high gas discharge temperature, Inter stage gas pressure, Oil pressure.
2	Cooling Tower (10TR)	For cooling of compressed gas	Temp sensor
3	EOT Crane (10T)	Handling of Gas cylinder cascades	Limit switches
4	Gas Cylinder Cascades	Storage of compressed Biogas	Nil
5	Mass flow meter	To measure quantity of compressed gas (Bio-CNG) in Kg	Mass Flow, Pressure
6	High pressure piping, tubing, fittings, valves with manifold	To transfer compressed bio gas (Bio-CNG)	Nil

Fire Fighting System

Layout drawing for the site shows the extent of fire-fighting system shown in the license premises. Actually, in case of methane there is hardly anything that water can do besides keeping metal cylinders cool during fire outbreak. Methane being lighter than air it dissipates upon releasing in atmosphere. We have taken care to allow maximum dissipation in construction shed.

Gas Leak Detection (GLD)

The shed will have GLD system. We have proposed a well laid state-of-the-art GLD system interfaced with emergency switches. Emergency switches will be provided in control panel room, in digester control panel, main office area and in the cascade filling area. There will be emergency switches at both filling points in

cascade filling area. All the emergency switches are interlocked with each other so that upon pressing any emergency switch or detection of combustible gas beyond 10% of the Lower Explosion Limit (LEL) level, everything will be stopped right from scrubbing or post buffer tank. There will be sufficient alarm and annunciation to announce potential situation and departure from the standard operating procedure (SOP).

Equipment required and functionality

S. N.	Equipment	Functionality	Automation
1	Emergency switch	To stop system of Control panel room, digester control panel, main office area, cascade filling area	Interlocked each other detecting LEL level of combustible gas

Solid Liquid Separation

For measurement of TS in digester, we have laboratory set up at the plant. We would have muffle furnace and oven to measure Total Solids (TS) and Volatile Solids (VS) of slurry respectively. It is proposed to install a viscometer/densitometer to measure viscosity of slurry.

It is proposed that the solid liquid separator will come with a hopper atop. In order to monitor the slurry pumped out of digester, in the solid liquid separator, it needs a minimum head of 2m (0.2 bar). The solid Liquid separator would be placed such that the tractor trolley should be able to go under the separator. Permeate from separator will go to filter press and then after processing to feed mixing tank. The tractor trolley will carry solid substrate (digestate/sludge) with 60% moisture to the composting yard where windrows will be formed with the help of an aero tiller.

The entire system (as a whole) will be a Zero Liquid Discharge (ZLD) system satisfying the principle criteria laid down by Central Pollution Control Board (CPCB).

Equipment required and functionality

S. N.	Equipment	Functionality	Automation
1	Tractor trolley	To carry Solid substrate (digestate/sludge)	Nil
2	Muffle Furnace & Oven	To measure bacterial count& TS of slurry	Nil
3	Viscometer	To measure viscosity of slurry	Nil
4	Solid liquid separator	To separate solid & liquid from slurry	Nil

Byproducts-Manure

Being zero liquid and solid discharge plant, permeate will be recirculated in the main system and the undigested solids will be used after drying either for manure or briquettes.

Overall work flow of the manure development

1. Solids or liquid extracted from Biogas plant will be used as the raw material.
2. Raw material will be dried under in wind-rows or in dryer to reduce the moisture content.
3. The addition of salts or manure culture will be based on the targeted product development.
4. Raw material will be mixed with the desired salt or culture in blender
5. The final mixed manure will be packed or transported in loose form.

2.2 Desk-based Assessment

Figure 2 below presents the site layout and surrounding land use within 500 meters radius. As can be seen in the figure, the land use in the area within 500 meters of site is cropland.

Figure 2: Dhuri Project Site Layout and Surrounding Land use (500 m radius)

Additionally, to identify the sensitive receptors around the project site, a 10 km buffer was considered for mapping to review secondary data. Preliminary desk-based assessment was undertaken for the project area to:

- Identify presence of any eco-sensitive sites, sanctuaries, reserved forests and/or wildlife areas within 10 km radius of the Project components to assess any critical ecological issues of concern and any impacts from the asset to local ecological and biological system.
- Identify water bodies and streams and any related impacts.
- Identify presence of indigenous communities / Schedule V areas across the Project components and evaluate any impacts from the asset operations/ activities and.
- Evaluate possible risks arising from natural hazards such as earthquakes, floods, cyclones etc.

Recommendations related to any identified impacts have been provided under each sub-section.
Land Use Land Cover (LULC) was extracted for the study area from World Cover, a global 10m baseline product, based on the Sentinel-1 and 2 data. The distribution of various land cover in the 10km radius of project site is shown in **Figure 3**.

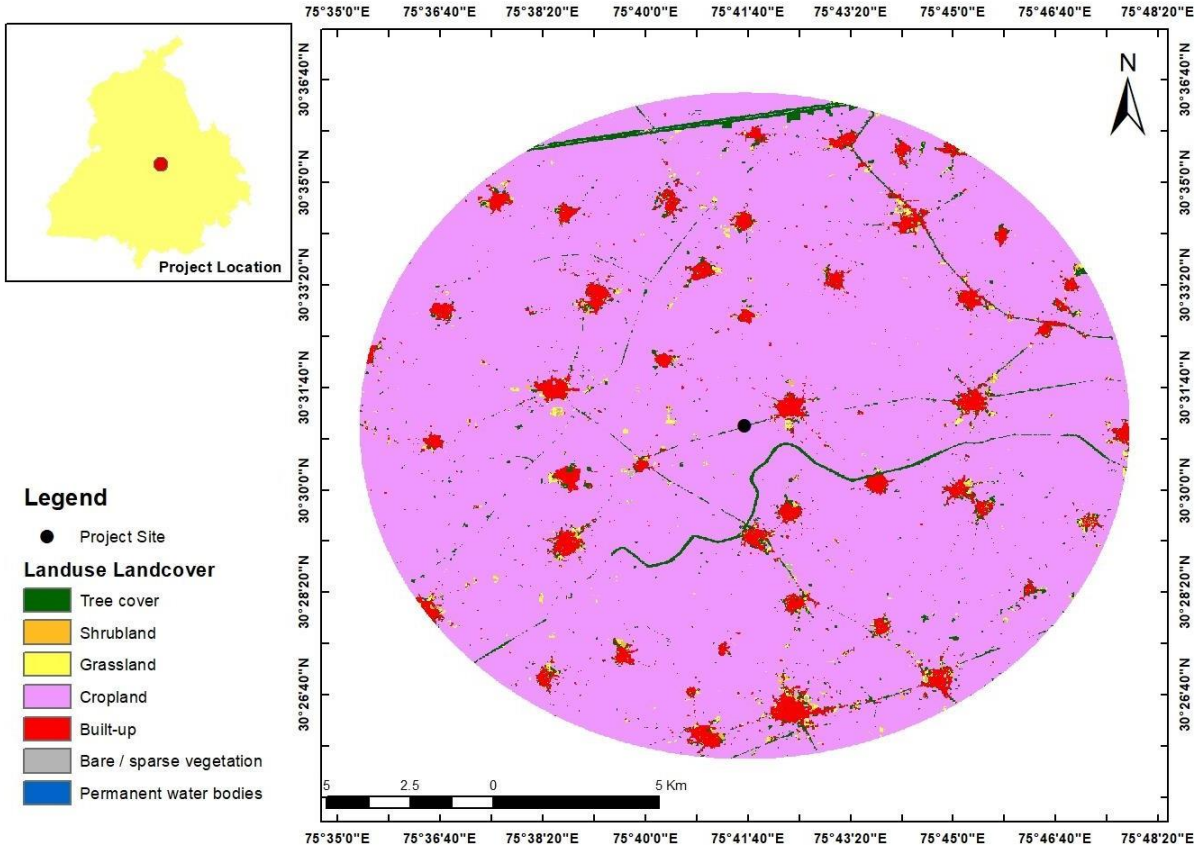


Figure 3: Land use Land Cover Map of Dhuri Site

It can be inferred from the LULC analysis that about 92.45% of the land is covered by cropland. The built-up is about 3.85%. The tree covers occupies about 2.50% of total area. Shrubland and grassland contribute to less than 1% of the total area.

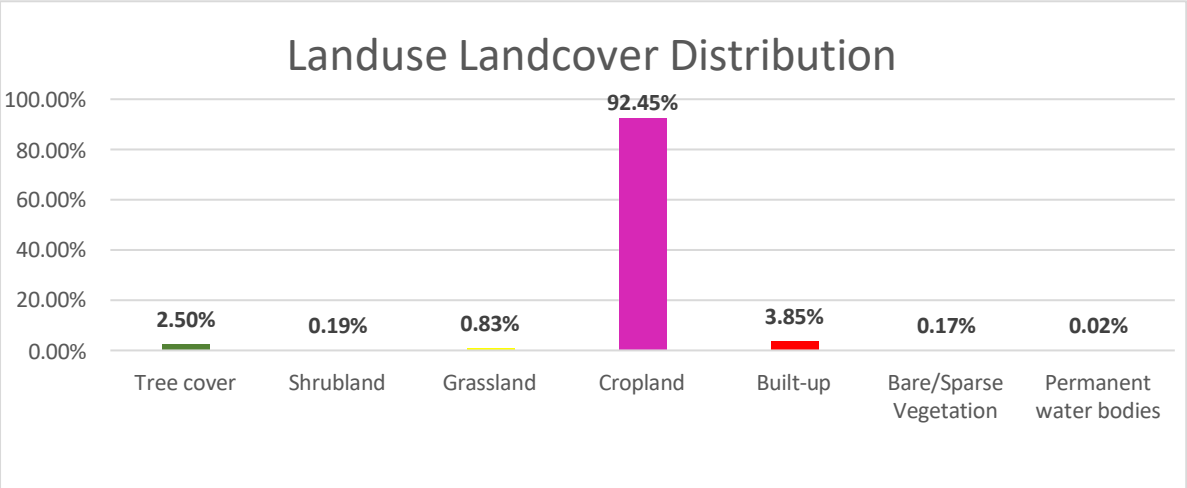


Figure 4: LULC Analysis

2.2.1 Protected Areas and Ecological Important Habitats

1: 50K Open series Toposheets were procured from Survey of India to identify Reserved forests in the study area. **There are no National Park/ Wildlife Sanctuary, Notified Eco-Sensitive Zones, Notified Important Bird Areas, Ramsar Sites (Wetlands), Open Forests/ Social Forests/nesting or breeding grounds falling within the Study area that can be directly impacted by the project.**

2.2.2 Places of Cultural Heritage and Archaeological Importance

No areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related values were found within the 10 km study area.

2.2.3 Schedule Tribes

Study area is not located in any of the tribal districts as per the list of fifth schedule areas. No indigenous communities were found to be present in close proximity to the project locations which was confirmed during the visit. Please refer to the Annexure 2 to see the state-wise list of fifth schedule areas defined under the Article 244 (1) of the Indian Constitution.

Vulnerability to natural disasters:

- Seismology – **The project lies in Zone III i.e., Moderate Damage Risk Zone (MSK VII) according to the Building Materials and Technology Promotion Council (BMTPC) Earthquake Hazard Map. The region has experienced earthquake of magnitude 3.8 on Richter scale at Ludhiana – Sangrur border in 2017 and magnitude 3.6 on Richer Scale in Sangrur in 2022.**
- Cyclones – According to the BMTPC Cyclone Hazard Map, the project does not fall under cyclone prone zone.
- **Floods – The project falls in the area liable to floods according to the BMTPC Flood Hazard Map.**
- **Wind – The project location lies in Very High Damage Risk Zone – B (V0 = 50 m/s) according to the BMTPC Wind Hazard Map.**

Proximity of project to sensitive receptors:

Sensitive Receptors	Remarks
Municipal Dump Site/ Hazardous Waste Landfills (Within 10 km of municipal waste dump sites / hazardous waste landfills)	There are no hazardous waste landfills within 10 km of the proposed project site.
Critically/Severely Polluted Area (Within 10 km of Notified Critically/Severely Polluted Areas)	Ludhiana (aerial distance of approx. 60 km North) is the nearest critically polluted area (CPA) as classified by Central Pollution Control Board as per Revised CEPI Concept and directions issued in April 2016. The risk of pollution exposure to the project is negligible.

Sources of pollution around the project location:

There are no major sources of pollution within the immediate vicinity of the project.

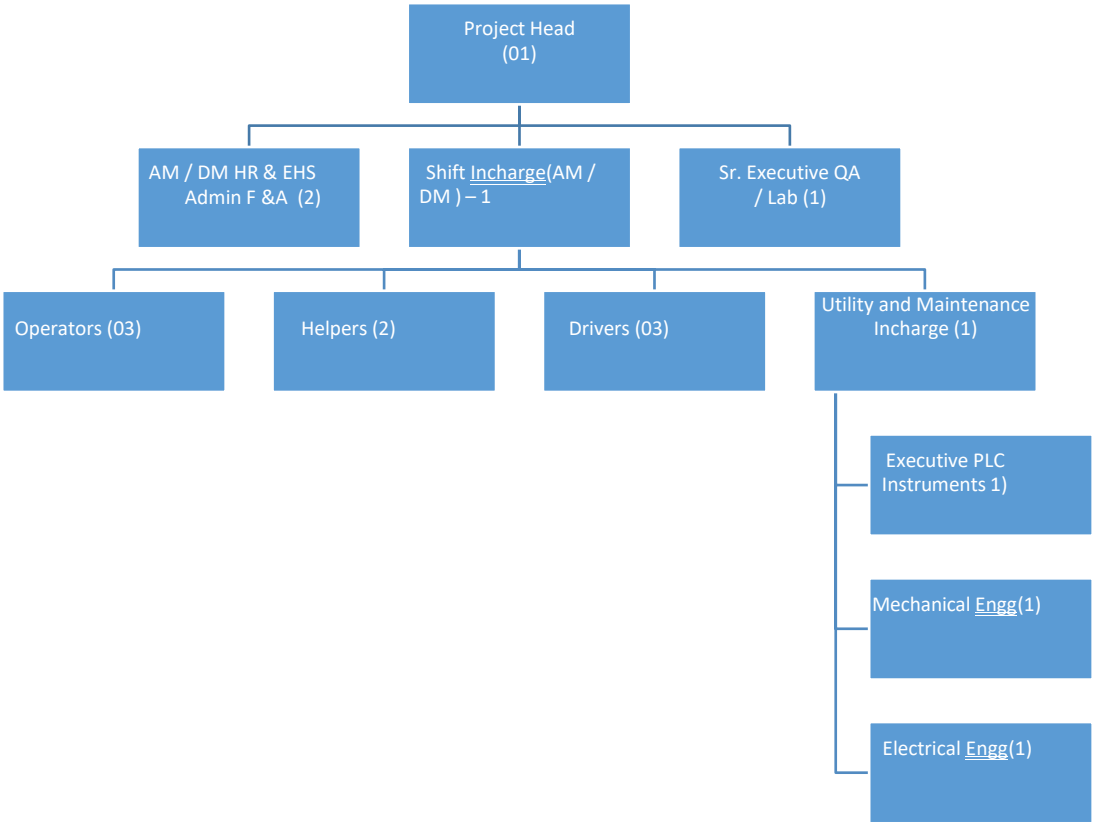
2.3 EHSS Organization Structure and Responsibilities

EverEnviro is responsible for overall project monitoring as well as implementation of regulatory requirements across project operations. EverEnviro has appointed one (1) Project Head, one (1) Plant Head, one (1) EHS Head, one (1) Admin/HR Head, and three (3) Operations Staff (one each for overseeing civil work, mechanical work, and feedstock management) at the site. EverEnviro Resource Management Private Limited has outsourced project works (civil and mechanical) to Thermax Limited and further subcontractors. There are four subcontractors engaged on the project: Pooja Jadhav and Associates (civil), JP Industries (mechanical), Primove Engineering Pvt Ltd (mechanical), and Atmos Power (operations).

As per the Contract Agreement of EverEnviro Resource Management Private Limited with EPC Contractor Thermax Limited, the contractor and further subcontractors are primarily responsible for the implementation of EHS aspects on site. Individual contractors and subcontractors are responsible for OHS and Welfare of the workers.

The Safety Officer of Thermax Limited reports to the EHS Head appointed by EverEnviro and is responsible for implementation of site safety requirements. Thermax Limited has developed an occupational health, safety, and environment (OHSE) policy and procedures for site safety. This policy has been reviewed and approved by EverEnviro. The Safety Officer of sub-contractors report to the Safety Officer of Thermax Limited. All the Safety Officers are responsible for compliance with the OHSE policies and procedures.

Organizational Structure and Manpower Requirement of the Plant



Proposed Organizational Structure

Operation and Maintenance Plan

S.No.	Designation	Qualification	Experience (Yrs)	Nos
1	Project Head	Masters in Environmental Sciences/Bio-technology	10	1
2	Manager Operations	Chemical Engineering	8	1
3	HR & Admin F&A Officer	Graduate	5.-8	1
5	Electrical / Utility Engineer	Graduate/Diploma in Electrical Eng	5-6	1
6	Shift In charge	Graduate/Diploma in Mechanical Eng / Ele / Instrument	4	1
9	Operators	Intermediate/ITI	3.-5	3
10	Mechanical Fitters	ITI	3.-5	1
11	Electricians	ITI	3.-5	1
12	Helpers	Intermediate / High school	0-5	3

13	Drivers	HV DL	3.-5	3
14	Security	Supervisor - Ex service man		
15	EHS Person	Manager / Asst.Mnager	7-8	1
			Total	17

2.4 Environmental Management During Construction Phase

Environmental Aspects and Impacts during Construction Phase

S.N	Component	Aspect	Potential Impact
1	Air Quality	Dust emissions from site preparation, excavation, material handling and other construction activities at site.	Minor negative impact inside plant premises. No negative impact outside plant site. Short term
2	Water Quality	Surface runoff from project site Oil/fuel and waste spills. Improper debris disposal	Minor negative Impact, however mitigation measures provided
3	Noise Quality	Noise generation from construction activities, construction equipment and vehicular movement	Minor negative impact near noise generation sources inside premises. No significant impact on ambient noise levels at sensitive receptors. Short term
4	Land Use and aesthetics	Land development	Positive impact. Development of integrated plant will increase the aesthetics of the area.
5	Topography and geology	Site development	No significant impacts
6	Soils	Construction activity leading to topsoil removal and erosion.	No impact as plant site is currently being used for dumping of waste.
7	Ecology	Flora and Fauna Habitat disturbance during construction activity	Impact will be there as the proposed project area is having vegetation.
8	Traffic pattern	Haul truck / construction vehicle movement	Minor negative Impact

Environmental Management Plan (EMP) describes the process that an organization will

follow to maximize its compliance and minimize harms to the environment. The Environmental Management Plan (EMP) provides an essential link between predicted impacts and mitigation measures during implementation and operational activities. EMP outlines the mitigation, monitoring and institutional measures to be taken during project implementation and operation to avoid or mitigate adverse environmental impacts, and the actions needed to implement these measures.

The likely impacts on various components of environment impacts due to the project activity during construction and operational phases have been identified and measures for their mitigation are suggested. The EMP lists all the requirements to ensure effective mitigation of every potential biophysical and socio-economic impact identified.

The EMP comprises a series of components covering direct mitigation and environmental monitoring and a project site restoration plan. Therefore, environmental management plan is prepared for each of the proposed developmental activities.

Environmental impacts during construction phase, will be mainly due to civil works such as site preparation, RCC foundation, construction etc.; material and machinery transportation, fabrication and erection etc.; storage and handling of different kinds of flammable/hazardous materials etc. The construction phase impacts are of temporary nature and localized phenomena, except the permanent change in local landscape and land use pattern at the project site and are expected to reduce gradually on completion of the construction activities. However, they require due consideration with importance during project execution and also wherever applicable detailed protocol / procedures (in case of dismantling of existing units / infrastructure) shall be implemented to prevent / mitigate adverse impacts and occupational hazards.

Environmental management during Site Preparation

The site preparation and plant erection activities during construction phase will be carried out with proper preventive measures for pollution control as well as restoration of dismantled units / infrastructure and proper disposal of existing containments. At the time of civil works for proposed project units, it is necessary to control SPM levels through dust suppression methods.

Usually, preparation of site will involve excavation, site grading and stockpiling of backfill materials. Due care will be taken through slope stabilization to avoid water pollution problems during rainy season.

During dry weather conditions, it is necessary to control the dust emissions arising out of the excavation, levelling, transportation and stockpiling activities by proper water sprinkling.

Temporary tin sheets of sufficient height (3m) will be erected around the site of dust generation or all around the project site as barrier for dust control.

The top soil removed from construction areas if suitable, may be preserved to reuse for development of land-scape and horticulture in the later part of construction phase. Any excess soil will be disposed as per the C&D Waste management Rules-2016 after obtaining the permission from the authorities.

Tree plantations around the project boundary will be initiated at the early stages by plantation of 2 to 3 years old saplings using drip irrigation or by regular watering so that the area will be moist for most part of the day. While designing the development of landscape proper care will be taken so that no alien species will be introduced and only site specific plantations shall be carried out. Proper care will be taken to avoid any adverse environmental impacts during the construction phase.

While designing the drainage system proper care will be taken so that natural drainage system will be utilized as far as possible.

All vehicles carrying raw materials will be instructed to cover with tarpaulin / plastic sheet, unloading and loading activity will be stopped during windy period.

All construction materials and products will be stored in a proper shed or using coverage so that fugitive emissions will be less.

Amenities for Construction labor

The work force during construction phase would be around 35-40.
The manpower required for these activities should preferably be employed from nearby areas so that avenues of employment will be open to local people.

Necessary basic needs and infrastructure facilities to the families of construction workforce including fencing, Barricading and proper illumination at the site. All sanitary and hygienic measures will be carried out before starting the construction activity and will be maintained throughout the construction phase.

Occupational Health and Safety

The Organization shall take due care to include necessary clauses in respective construction tender / work awards for maintaining strict compliance of occupational health standards for workers during duty period including provision and usage of personal protective equipment (PPE) to mitigate occupational health hazards.

If necessary, the personnel working in poorly ventilated work places will be provided with respiratory protective equipment. Fire hazard safety norms are required to be strictly followed.

Adequate security arrangement will be made to ensure that the local inhabitants and the stray cattle are not exposed to the potential hazards of construction activities. Round the clock security personnel will be appointed to restrict entry of unwanted people to the site.

The movement of heavy equipment should be done with proper precaution to prevent any accidents on the road. Occupational risk should be minimized at the project site through safety measures. Movement of vehicles with 20-40 km/hr imposed speed limits on internal roads will reduce risks of accidents or injuries.

Safety training will be provided to all construction workers on operation of equipment. Security will also be extended during non-working hours to ensure there is no uncontrolled access to the machinery and equipment.

The organization will be vigilant to detect workers showing symptoms of communicable diseases. All illness and incidents will be reported and recorded. First Aid boxes will be provided at the appropriate locations and necessary training will be also provided at regular intervals.

Management of Environmental Impact from operation of Construction Equipment

Both diesel and gasoline powered construction machinery, vehicles etc. put in to operation at project site will be properly maintained to minimize exhaust emissions as well as noise generation

Efforts will be made to prevent accidental spillage of any oil / grease from construction equipment maintenance activities, and empty containers, rubber & plastic materials etc generated during construction is expected to be properly disposed off and other solid wastes generated during the construction phase will be disposed as per the existing statutory regulations.

Though the effect of noise on the nearby inhabitants due to construction activity will be marginal, major noise prone activities will be restricted to only daytime

The construction machinery will be maintained properly to minimize the noise generation.

Safe Storage of Hazardous Materials

Inflammable materials such as petrol, diesel, lubricating oil, compressed gases, paint and varnishes as also explosives for blasting operations, if required at the construction site will be stored and handled strictly in accordance with the prevailing safety regulations.

Air Pollution Management during construction phase

During the construction phase, chronic gaseous emissions are expected from the heavy machineries deployed for construction. All other emission sources are intermittent and include emissions from heavy vehicles. Some generic measures to reduce fugitive and gaseous emissions during construction phase will include the following:

- Water sprinkling on main haul roads in the project area will be done, this activity will be carried out at least twice a day, if need arises frequency will be increased on windy days.
- Those sections of the working area that are being frequently used by vehicles will be damped by controlled application of water sprays (e.g. by water dowsers) as conditions dictate.
- All vehicles meant for loading / unloading of construction materials to the site or removing soil / debris will be enclosed and covered to prevent escape of dust
- Vehicles or equipment will be checked against stipulated norms for pollutant emissions
- Exhausts of other equipment used for construction (e.g. generators) will be positioned at a sufficient height to ensure dispersal of exhaust emissions and meet the standards set by CPCB
- Engines and exhaust systems of all vehicles and equipment will be maintained so that exhaust emissions do not breach statutory limits (set for that vehicle / equipment type and mode of operation by CPCB) and that all vehicles and equipment are maintained in accordance with manufacturers' guidance
- Dust masks will be provided to construction workers, while carrying out operations that may entail potential for dust inhalation.
- Construction materials stored will be covered with proper covers during transportation, storage to control the fugitive emissions as per statutory regulations.

Noise Management during construction phase

The following measures are recommended to mitigate adverse impacts on noise environment during construction phase:

Personal protective equipment like earmuffs, helmets covering ears should be provided to the onsite workers, working near noise generating equipment and should be seen that, workers use the protective gadgets regularly.

Earth movers and construction machinery with low noise levels should be used.

Periodic maintenance of construction machinery and transportation vehicles should be undertaken.

Water and Wastewater Management

Sources of Water

The water required for construction purposes will be locally sourced from authorized vendors. The drinking water requirement will be met from packaged water / water transported through tankers to the construction sites. Construction laborers should be provided with adequate quantity of drinking water of potable quality.

Water demand during construction shall be reduced by use of curing agents, super plasticizers and other best construction practices and treated water from Sewage treatment plants shall be used.

In case ground water is used during the construction or operational phase, necessary statutory permissions will be obtained.

Mitigation Measures for Prevention of Water Pollution

Sufficient and appropriate sanitary facilities will be provided in order to maintain hygienic conditions in the rest rooms of construction labourers. The domestic wastewater generated from temporary toilets used by the work force will be diverted to septic tank followed by soak pit. Therefore, impact on water quality due to proposed unit would be insignificant.

The solid waste generated should be collected and disposed off in an appropriate manner. The existing workshop areas at the complex should be used for the maintenance of vehicles and construction machineries so as to avoid accidental spills of oil/oily wastes. The waste generated from the site work shop will be segregated like used oil, lubricants, etc and disposed to authorized recyclers.

EMP During Operation Phase

Air Pollution Sources and Mitigation

The main activities from the proposed project which cause air pollution are, dust particulates due to movement of vehicles and road sweepings, temperature & Odour from Processing areas.

The following measures are recommended to mitigate adverse impacts on air environment:

Air Pollutions of DG Set

Diesel power generating sets as source of backup power for lifts and common are illumination should be of enclosed type and conform to rules made there under Environment (Protection) Act 1986, prescribed for air and noise emissions standards are as per CPCB guidelines. Exhausts should be discharged by stack raised to 4 meters above the rooftop.

As much as possible the fuel requirement of all power generating equipment should be replaced with renewable natural gas instead of diesel.

All the DG sets are installed within acoustically treated DG rooms located in basements and conforms rules made under Environment (Protection) Act 1986, prescribed for air and noise emission standard as per CPCB guidelines.

The stack height of DG set should be 4 meters above the roof level and 11 meters from the ground level. meter above the ground level.

Emissions from new diesel engines used in generator sets have been regulated by the MoEFCC, Government of India**.**

Stack Emission will be tested and certified by an external agency every six months. The DG set will be calibrated from the manufacturer in case any deviation in the emission parameters.

Emission limits for new diesel engines ≤ 800 kW used in genset applications were set in 2002 and strengthened in 2013.The regulations also set noise limits for diesel generator sets up to 1000 kVA.

Air Pollution of Storage Feed Stock Section

The unloading, storing and processing of the paddy straw would generate dust and odors. Unloading of feed stocks from trucks will be carried out into a specially designed storage area.

Air Pollution in the Bio-Methanation Process

Regular monitoring of scrubbing system for purification of biogas provided by the equipment vendors prior to compression / Cascading should be done to ascertain for absence of SO_2 emissions.

Ambient air quality with respect to PM_{10}, $PM_{2.5}$, SO_2, NOx, Ammonia, VOC's and CO should be monitored regularly at different sampling stations selected in consultation with

Municipal Corporation and SPCB within the impact zone. The sampling stations should be selected based on the maximum ground level concentration anticipated and keeping maximum stations in the downwind direction and at least one in the upwind direction.

A weather monitoring station shall be operated continuously and regular data logging shall be done**.** Proper moisture, oxygen and C:N ratio shall be maintained to minimize the odour and to maintain adequate temperature in compost plant
Green belt shall be provided along the internal roads and plant boundary and 33% of the overall plant area will be maintained under the plantations.

To control fugitive emissions of VOCs / Odors, **Bio-Scrubbers** will be provided and following steps shall be taken:

- Provision of internal floating roof tanks with flexible double seal for storage tanks
- Provision of mechanical seals in pumps
- Regular inspection of floating roof seals and proper maintenance of floating roof seals for existing tanks
- Preventive maintenance of valves and other equipment
- Fugitive emissions monitoring at regular intervals
- Strengthening / Maintaining existing plantation
- Use of high grade gasket material for packing
- Implementation of Leak Detection and Repair (LDAR) program using a portable VOC detection instrument

Inventory of odorous compounds should be maintained and release of such compounds due to leakages should be prevented by following strictly the relevant guidelines for storage and handling of such materials.

Gas powered or low sulphur diesel and unleaded petrol in conventional vehicles may be used within the project area.

Idling of vehicles should also be minimized during transport and handling activities
Loading / unloading and storage areas should be paved to reduce dust emissions
All access roads (internal as well external) to be used by the project authorities shall be covered either with concrete or bitumen to suppress the dust generation along the roads

Emissions from individual stacks should comply with the emission standards stipulated by MoEFCC / CPCB for proposed units.

Ambient Air Quality

Ambient air quality is defined as the quality of air outside and sometimes inside. Air Pollutants means any solid, liquid or gaseous substance (including noise) present in the atmosphere in such concentration as may be or tend to be injurious to human beings or other living creatures or plants or property or environment.

Air quality monitoring is the process of assessment of pollutants present in atmosphere by their quantity and types as per air quality standards. Air quality monitoring helps us to take action based on pollutants present in atmosphere to improve air quality.

In order to arrest the deterioration in air quality, Govt. of India has enacted Air (Prevention & Control of Pollution) Act in 1981. The responsibility has been further emphasized under Environment (Protection) Act, 1986.
An In-House Ambient air quality monitoring station is setup within the plant premises which provides following parameters on-line. The National ambient air quality standards (NAAQS) have been established for six “criteria” or major of outdoor air pollutants: lead, carbon monoxide, ozone, nitrogen dioxide, sulfur dioxide, and particulate matter.

Sources of Fugitive emissions affecting work environment & Ambient Air Quality

Major air pollution generating sources in the RNG Plants are:

- Loading & Unloading activities of feed stock in the dumping areas and feeding into machineries.
- Incoming / outgoing vehicles
- Due to machinery used in handling waste operations

Mitigation Measures to reduce Fugitive emissions affecting work environment & Ambient Air Quality

1. Areas to be earmarked for unloading of feed stock.
2. A sheet cover over all the incoming/outgoing vehicles carrying waste/finished products.

3. Abatement of Dust from Vehicle Movement

Dust abatement due to transport activities arising due to vehicles movement (operation of vehicles within, entering or leaving the site) can also include the following:

- Transportation of solid wastes should be done in covered vehicles to prevent fugitive dust emission.
- Regular checking and maintenance of vehicles should be ensured (valid PUC)
- Earmark areas for parking vehicles.
- Parking should be only within the premises and not outside of the project site earmarked.
- Smooth movement of incoming & out going vehicles / trucks.
- Roads within plant premises must be tarred or concretized.

- Weigh bridge should be operational all the time.
- The speed limit within the premises should be 10km/hr.

4. Dust abatement from machinery used in the operations
The latest NAAQS standard defined by CPCB.

Ambient Air Quality Monitoring

It is necessary to assess the present and anticipated air pollution through continuous air quality survey/monitoring programs. It is therefore stated that both legally and ethically all industries should assess their air quality standards in and around the plant locations.

Ambient air quality monitoring is carried out so as to generate data that meets the objectives of monitoring. Ambient air quality monitoring program are needed to determine the existing quality of air, evaluation of the effectiveness of control program and to develop new program.

The ambient air quality monitoring network involves measurement of a number of air pollutants at number of locations at the site so as to meet objectives of the monitoring. Any air quality monitoring network thus involves selection of pollutants, selection of locations, frequency, duration of sampling, sampling techniques, infrastructural facilities, man power and operation and maintenance costs. The network design also depends upon the type of pollutants in the atmosphere through various common sources, called common urban air pollutants, such as Suspended Particulate Matter (SPM), Respirable Suspended Particulate Matter (RSPM), Sulphur dioxide (SO2), Oxides of Nitrogen (NOx), and Carbon Monoxide (CO) etc. The areas to be chosen primarily are such areas where machinery operation, emission source, public complaints if any and the land use pattern etc. Generally, most of the time the basis of a network design are the pollution source and the pollutant present.

Procedure to Conduct Ambient Air Quality Monitoring:

- **Ambient Air Quality** Monitoring should be done at an interval mentioned in the CTE/CTO/EC from the reputed NABL accredited lab facility.
- Method of sampling should be as per IS-5182(P-14) as given in the CPCB direction.
- **Ambient Air Quality** Monitoring for Waste to Energy plants should be done for at least five basic parameters like PM, NO_x, Sox, HCL and CO.
- **Ambient Air Quality** monitoring and Sampling should be done as per the procedure mentioned in the latest guide lines for Ambient Air Quality Monitoring issued by pollution control boards. The frequency of **Ambient Air Quality** monitoring shall be as per the latest guide lines, however in general **Ambient Air Quality** monitoring shall be done at least twice a year.

Water Pollution Sources and Mitigation Measures

Sources of Water

The water requirement for domestic and process will be supplied by the municipal corporation. Proper connection will be obtained from the Jal board or water supplying authority and water consumption will be recorded using the ultrasonic water meters and log books will be maintained. In case bore water inside the plant premises is used, necessary statutory approvals will be obtained from the concerned authorities.

Waste Water Sources and Treatment

The plant will have a zero liquid discharge system and will not discharge any liquid to the environment in any form.

Zero liquid discharge (ZLD) is a strategic wastewater management system that ensures that there will be no discharge of industrial wastewater into the environment. It is achieved by treating wastewater through recycling and then recovery and reuse for industrial purpose.

Domestic Waste water will be treated through Septic tank / Sump pit.
Storm water drainage system shall consists of well-designed network of open surface drains and rainwater harvesting pits along the drains, so that all the storm water is efficiently drained off without any water logging. The storm water drain is will be separate and free from the effluent/waste water at any point of time.
Rain Water harvesting will be planned and implemented from the construction phase itself. Rain Water harvesting pits will be constructed and rain water is diverted to the drain wells.

Solid Waste Management

All hazardous waste generated will be segregated as per its category and be stored, handled and disposed off as per Hazardous waste (Management & Handling) Rules, 2016.
E-waste generated within the premises will be used properly, collected and disposed off/ sent for recycling as per the prevailing statutory guidelines/rules of the regulatory authority as per E-Waste Management Rules 2016.

Noise Pollution

Sources of Noise Pollution

1. Due to Vehicle movement:

Due to vehicular traffic and material transportation within applied area.

Noise abatement measures:

- Regular checking and maintenance of vehicles should be ensured (valid PUC)
- For long distance transportation overhaul routes to be judiciously selected.
- No parking outside the plant premise.
- Earmarked areas for parking vehicles within premise.
- Smooth movement of incoming & out going vehicles / trucks.
- Roads within premise tarred.
- Minimum use of horns.
- Operational Weigh bridge

2. Noise due to heavy earth moving machinery /crushing deployed.

Noise abatement measures

Noise Pollution control of DG Set

Noise abatement measures for diesel generator sets:-

- Noise from DG set shall be controlled by providing an acoustic enclosure or by treating the room acoustically
- The acoustic enclosure or acoustic treatment of the room shall be designed for minimum 25 dB (A) insertion loss or for meeting the ambient noise standards, whichever is on the higher side (if the actual ambient noise is on the higher side, it may not be possible to check the performance of the acoustic enclosure/acoustic treatment. Under such circumstances the performance may be checked for noise reduction up to actual ambient noise level, preferably, in the night time). The measurement for Insertion Loss may be done at different points at 0.5 m from the acoustic enclosure/ room, then averaged.
- The DG set shall be provided with proper exhaust muffler with insertion loss of minimum 25 dB (A).
- These limits shall be regulated by the State Pollution Control Boards and the State Pollution Control Committees.

Noise abatement in Plant areas

- To control the noise regular preventative maintenance of equipment to be carried out. Regular and proper maintenance of noise generating machineries to avoid noise increase.
- Periodical monitoring of noise will be done to adopt corrective actions wherever needed.
- Ear plugs to be made available to workers during the operational hours.
- Besides the operators prepare Noise Mitigation Plan (NMP) which addresses: management and mitigation strategies to prevent an environmental nuisance caused by construction / demolition / recycling activities impacting ambient noise levels.
- Other initiatives include

- Maintain records of equipment / machinery maintenance
- Maintain records of monitored noise levels
- maintain records of complaints on noise
- Comply with Consent conditions issued by State Pollution Control Boards / PCCs and concerned authority
    - Plantation activities: Plantation reduces propagation of dust and noise.

Procedure for Noise Monitoring

1. Noise monitoring has to be done at the specified intervals mentioned in the CTE/CTO/EC.
2. Noise monitoring has to be done at the specified number of locations within the plant site as per CTE/CTO/EC.
3. Noise monitoring should be conducted by a NABL accredited lab.
4. Noise monitoring should be done prominently near the gate, Work environment, DG set and office blocks. The frequency of Noise monitoring should be as per the latest guide lines or as in general practice it should be done at least twice a year.

Occupational Health Management

There will be routine observation of health as certain sufferings are likely to appear as result of exposure by the workers during operations of various facilities. All the employees shall be required to undergo a medical checkup before joining the facility. Medical checkup will be conducted on regular basis and the health conditions will be monitored. First aid facilities required to attend immediately for meeting emergency situations shall be made available at the facility.

Fire Protection System

The fire protection system will protect the entire site area from fire hazards happening accidentally.

This fire protection system comprises of a ground level water storage tank to store the anticipated requirement of water. One electric motor driven pump and one diesel high pressure pumps will be provided to pump the water to a high pressure header from where the water is distributed to various high pressure hydrants provided at selected locations. Necessary fire hoses terminated with spouts will be kept ready at each hydrant location to facilitate fire fighting. The header also caters to a multi fire system to automatically sprinkle water through sprinklers provided.

Development of Greenbelt

The main objective of the green belt is to provide a barrier between the source of pollution and the surrounding areas. The proposed greenbelt development should be of a suitable width along the periphery of plant and space between the units located within the plant, along the roads, the areas of unloading / loading and storage of feed stock and compost respectively

The green belt helps to capture the fugitive emission odours and to attenuate the noise generated apart from improving the aesthetics. Development of green belt and other forms of greenery shall also prevent soil erosion and washing away of topsoil, besides helping in stabilizing the functional ecosystem and further to make the climate more conducive and to restore water balance.

While making choice of plant species for cultivation in green belts, weight age has to be given priority to the natural factor of bio-climate. It is also presumed that the selected plants will be grown as per normal horticultural (or forestry) practice and authorities responsible for plantation will also make sure that adequate provision for watering and protection of the saplings exists at site.

The plant species will be selected so that their capacity to reduce noise and air pollution impacts is higher and providing food and habitat for local micro and macro fauna. The species which could not survive should be replaced by more tolerant species.

Criteria for selection of Plant Species

The plant species suitable for green belt development should be selected based on the following characteristics.

- It should have thick canopy cover
- They should be perennial and evergreen
- They should have high sink potential for pollutants
- They should be efficient in absorbing pollutants without significantly affecting their growth.
- It should be Indigenous

Social Impact and mitigation

It is revealed that the youth in the project area are devoid of employment opportunities. They can be a potential source of workers with minimum handholding and vocational education skills. Similarly, this would also trigger many direct and indirect benefits for economic advancement and social development of project area.

The proposed project would take a pivotal role in developing health, education, skill development, environmental management of the villages in the project area.
The socio-Economic status of the population in the project area shall be improved through CSR and focused community development interventions. Some of the salient activities are illustrated below:

Youth empowerment programs through awareness creation about various government

schemes, providing appropriate opportunities with relevance to their qualification and skills, conducting skills inculcating programs etc.,

Social awareness program about the importance of conservation of local flora and fauna will be conducted periodically. The visitors and other inhabitants will be strictly warned to avoid throwing non-degradable waste materials in the project area, so that ecosystem should not get harmed.

Social welfare activities will be undertaken in collaboration with the local bodies and the information regarding the project activity and its plans. Social welfare program should be circulated in the form of booklets and shown as audio-visually.

In order to improve Socio-Economic status in slum area, will consider extending welfare measures to the local people under the community development program.

Periodical health checkup camps need to be conducted
Sensitization and awareness programs on child and mother health, sanitation and personal hygiene, HIV/AIDS etc.
Mother-child care awareness programs and need based health camps.
Veterinary camps and Para-Vet services to enhance the milk production of existing milk producing households.

A number of CSR activities can be initiated in the project area villages on convergence mode whilst partnering with exiting Government schemes and financial support from developmental institutions like NABARD.

The social impacts due to the proposed project is studied and given in 3 stages.

Impact during pre - construction phase
Construction phase
Operation phase

Impact during Pre-construction Phase

Land clearing, digging for construction activities etc will be performed during pre-construction phase of the project. Local labour force will get direct employment for this phase. During land clearing noise from machines and dust generation during clearing at the site will affect nearest residential areas at some extent.

Positive Impact in Construction phase

RNG (Renewable Natural Gas) plant construction Increased employment opportunities

Construction for RNG plant would encompass the following key activities removal of vegetation and general site grading, construction of administrative, control and other support buildings and Installation of utilities. These all type of works need manpower, local population will get employment opportunities in construction phase.

Increased business opportunities in local market

During construction of plant, local market will be benefited by supplying the raw material for the construction, Small hotels, shops will benefited by the project.

Public service and utilities

The proposed project will require infrastructural facilities e.g. Road, power, communication facility, water etc. will improve in the project area; these facilities will be a positive impact for the population living in surrounding villages.

Negative impact in construction phase

Increased transportation

For construction activity, loading unloading of material will increased transportation activities in the study area, heavy vehicles will use village road for transportation purpose it will increased load on village roads.

Impact on noise

Noise and vibration generated by road traffic, and other vehicles activities also cause nuisances to local people.

Positive impact in operation phase

Employment generation
In operation phase employment generation will help to increase contractual employment pattern in the study area.

Impact on village development

Plant will contribute in village development activities in the field of CSR, in needy areas development/welfare activities will performed

Negative impact in operation phase

Impact on transportation

In operation phase, loading unloading of material will increased transportation activities in the study area, heavy vehicles will use village road for transportation purpose it will increased load on village roads. In operation phase there will be increased transportation activities, transportation of material activities can disturbed day to day life of villagers

Mitigation Measures

Mitigation measures are presented below.

Construction of boundary wall

Before start any construction activity, boundary wall construction surrounding the plant site is needed to restrict the entry of children and animals.

Preference to local workforce in construction/operation phase

During construction and operation phase preference to local workforce will help to increase employment and income of surrounding villages

Proper provisions for labour during construction phase

During construction activities proper provisions like water, sanitation, rest room etc. Should avail on site.

Medical camps in surrounding villages (once in 3 months)

Arrange free ambulance service, medical camps in surrounding villages, free medicine distribution in medical camps.

Preventive measures to cover truck while transportation

During material loading unloading, transporting trucks should cover by sheets to reduce air pollution if any

Awareness program

Awareness of safety and environment through the plant authority for surrounding village.

Environmental & Social Governance (ESG) Cell

A full-fledged Environment and Social Management Cell needs to be established with multidisciplinary team of professionals, technical staffs and all necessary infrastructures; and the Cell is headed by Group Manager. This team will prepare the annual budget for implementation of Environmental Protection Measures along with item wise break up and obtain the approval for the same. The funds earmarked for the Environmental Protection measure shall not be diverted for other purposes. This team will be also responsible for all environment and social management activities including environmental monitoring, greenbelt development, ensuring good housekeeping, ensuring statutory compliance as well as creating environmentally aware work forces in the facility including the proposed project.

The said team will be responsible for:

- Monitoring and Analysis of air quality, noise levels, meteorology, water quality and other environmental parameters.
- Implementation and monitoring of the pollution control and protective measures/ devices etc.
- Co-ordination of the environment related activities within the project as well as with outside agencies.
- Green belt development and creation of land and adequate funds for strengthening of existing and additional development.
- Monitoring the progress of implementation of the environmental management program.
- Undertake regular Environmental awareness programs to bring forth the beneficial aspects of the projects and environmental management measures being undertaken for improving the quality of life.
- Compliance to statutory provisions, norms of State Pollution Control Board, Ministry of Environment Forests and Climate Change (MoEFCC) the conditions of the environmental clearance as well as the consents to establish and consents to operate.
- Prepare, submit and upload various statutory compliance statements within the prescribed time limit and at appropriate points including the websites.

A report on the energy conservation measures conforming to energy conservation norms finalized by Bureau of Energy Efficiency will be prepared by this team incorporating details about the building material and technology, R&U factors and submit to the State Expert Appraisal Committee and a copy to SPCB in three months' time of obtaining the approval.

Submission of Monitoring Reports to SPCB/MoEFCC

As per the requirements, the status of environmental clearance stipulation implementation will be submitted to MoEFCC in hard and soft copy as per the prescribed period. The conventional pollutants will be monitored on monthly basis and reports will be submitted to SPCB, as per the requirements.

S.N	Environmental Component	Parameters to be Analyzed
1	Meteorology	Wind Speed, Wind direction, Temperature, Relative Humidity, Rainfall
2	Ambient Air Quality	Parameters as per MoEFCC notification 2009 on NAAQS
3	Fugitive Emission	PM, SO_2, NO_X, CO
4	Water quality of surface and ground water	Physical and chemical parameters as per SPCB norms
5	Liquid effluents	Parameters as per SPCB consent
6	Noise	Sound Pressure Levels (Leq) as per CPCB Guidelines

Compliance & Incident Reporting

Incident Reporting

Any environmental / Health and Safety /social incident shall be reported to the plant manager and Corporate ESG team by email or phone based on the severity of the incident. Based on the instructions, the corrective and preventive action (CAPA) shall be carried out. Progress of implementation of CAPA shall be periodically reported till its completion. The format of the Incident reporting will be as per the latest Solid Waste management Rules.

MIS

MIS report shall be sent to Corporate ESG team weekly and monthly.

Visit of MC, SPCB & Other officials

Scheduled visit of officials of MC, SPCB & officials shall be immediately informed to Corporate ESG team by email and phone as soon as the information is received. Unscheduled visit can be informed to Corporate ESG by phone.
Plant personnel accompanying the external official should prepare a note and send the same to Corporate ESG team immediately after the visit.

External Reporting

Draft of any submission or reporting to MC or SPCB or CPCB will be prepared at least 10

working days in advance and sent to Corporate ESG team. After approval of Corporate ESG team it will be submitted to the concerned authorities.

Form-III will be submitted to the ULB/Local authorities in the prescribed format mentioned in the latest Solid Waste management rules before 30 the April of Every year. The format for

FORM-III has been given in the Solid Waste Management Rules-2016.

Form-V will be submitted to the SPCB in the prescribed format mentioned in the latest Environmental protection act before 30 the September Every year. The format for FORM-V has been given in the Environmental Protection Act.

CTO & MSW Authorization Compliance report will be submitted to the SPCB every year before the date of CTO expiry or along with CTO renewal application.

2.5 Company and Project's Reputation in Public Domain on E&S aspects

A review of publicly available media sources through a web search was conducted to identify any past issues of the Company on aspects related to the environment, occupational health and safety, labor welfare and community welfare and safety. The review also included search for any ongoing or past NGO attention/campaigns, or items that may lead to reputational risks to the Company and/or Investors.

Keywords used for the search included EverEnviro, Indo Enviro, biofuel, CBG, stop work orders, NGO, controversy, issues, legal cases, social concerns, environmental issues etc. in various combinations. The review did not bring forward any issues on aspects related to environment, occupational health and safety, labor welfare and community welfare and safety.

3 Status of Compliance to EHSS Legal Requirements

3.1 Land Acquisition Procedure

SOP for Land Purchase and Lease Agreement

Ever Enviro follows a defined SOP / procedure to purchase land from the willing seller through negotiations and following a strict monitoring mechanism.
The SOP for land purchase and lease management helps Ever Enviro streamline its land-related activities, reduce risks, ensure legal compliance, and optimize its use of land assets. It also promotes transparency and accountability in the decision-making process, ultimately contributing to the organization's overall success and sustainability.

Land Requisitioning

- Land Parcel requirement will be gathered by the Head-Land Acquisition from the CCO & other CFT members basis the management plan to set up new plant/ Feedstock storage land.
- At the time of defining the complete specification of land parcel by the Head-Land acquisition, it is mandatory to refer the latest ESG guidelines with respect to setting up of new plant for Land acquisition/ Feedstock Land

Land Parcel Identification

- Land brokers should possess a good local reputation and reference of Sugar Mills, Village Sarpanch, mandatory experience in big land parcel dealing in past 3-5 years etc. Land brokerage charges and workorder will be prepared as per SCM SOP.
- Basis discussion with the Brokers and Landowners, prepare a consolidated list of Land parcel with clear details of Number of Landowners, land size, proposal for Lease/ Purchase, agreed for long term lease minimum 25 years. There should be minimum 3 options for Purchase or lease separately as per Management Requirement, exception to be separately approved from MD &CEO.
- Head Land Acquisition must diligently assess all land proposals by conducting an initial background check. This process involves collaborating with fellow brokers, seeking local references such as from Sugar Mills and regional employees, as well as consulting other reliable sources. Based on the findings, he can then decide whether to proceed with a physical site visit and request photocopies of pertinent land-related documents (Registration Documents). On need basis, Head Land Acquisition may also involve third party firm for end-to-end land acquisition process in consultation with the Executive committee.
- Land Team Acquisition will visit all Land parcel and submit visit report to Head Land Acquisition with the comments on specific parameters which are defined in the standard template.
- Head Land Acquisition is required to share an email to provide information about the land availability, option of Purchase/ Lease and tentative prices for Management decision. Prices

are required to be cross checked with the Patwari, Circle rate, other brokers, reference from the recent land purchase/ lease rental in past 3 months and regional sources.

Internal Clearance

It is mandatory to have at least 3 options for Land Lease or Land Purchase. Else exceptional approval to be taken from MD & CEO

Management Approvals-Price Negotiation

Prices are required to be cross checked with the Patwari, Circle rate, other brokers, reference from the recent land purchase/ lease rental in past 3 months and regional sources.

Token Agreement, Due Diligence (Pre & Complete) and IC Approval

Token agreement with the farmers to be executed on Stamp paper (Stamp value to be determined in consultation with the Head Legal) with the individual Farmers. In case landowners are part of one family, then only one agreement will be executed with them. Token amount will be INR 50,000 maximum (Exception to be approved as per Payment DOA for Land) as token money. Agreement clauses will be provided by the Legal team. Payment to be approved as per Payment DOA within 3 days of submission and Accounts (RNG finance controller) will provide cheque within 2 days from the date of management's approval, to sign token agreement thereafter land team will sign token agreement with the owners.

The token agreement does not apply to storage land leased for a duration shorter than the plant land tenure without the need for Change of Land Use (CLU), as assessed by the Head Land and CCO. In such cases, only Pre-Due Diligence will be conducted instead of a complete due diligence.

IC approval Note is required to be prepared considering both the options a) availing stamp duty exemption b) without stamp duty exemption. IC approval is a parallel activity which will initiate post positive Pre- DD and it is required to obtain IC approval before getting complete Due Diligence report.

In the event that the IC does not grant approval, cease the complete due diligence process and proceed to re-initiate the land identification process in accordance with the recommendations provided by the IC.

Stamp Duty Exemption for Purchase and Lease Option

Head Land Acquisition will apply for stamp duty exemption in case of Land purchase & Leased option as per state rules. In case of Bank Guarantee applicability, F&A team will be responsible to furnish the BG as per requirement.

Land Registration/ Lease Rental Agreement

Template for Fund requirement should mandatorily include the maximum approved by the IC, details breakup of all the expense like stamp duty, farmer wise payment, brokerage with the timeline for payment. Parallelly, get the Work Order prepared from the Purchase team for Broker Fees basis Management Note as per DOA.

Registration of Storage land lease agreement will be the decision of CCO & Head Land.

Document Retention

Share all the original document with the Company Secretary for safe storage.

3.2 Applicable EHSS Regulations

The local, national, and state level (Punjab) EHSS regulations applicable to the project site are listed below in **Table 3**. This table highlights only the regulations applicable to the projects. The specific section and/or subsections applicable to the project under the stated regulation, the compliance status of the projects on applicable EHSS legal regulations, and the corresponding E&S Action Plan is presented in the following sections.

Table 3: Applicable EHSS Regulations

Applicable Regulation	Applicability	Reason for Application
Environmental		
1. Water (Prevention and Control of Pollution) Act, 1974; and Rules 1975	✓	The project generates wastewater and requires Consent to Establish and Consent to Operate from the SPCB.
2. Air (Prevention and Control of Pollution) Act, 1981; and Rules 1982	✓	The project operations generate air emissions and require Consent to Establish and Consent to Operate from the SPCB.
3. Construction and Demolition Waste Management Rules, 2016	✓	The project is in the construction phase and generated construction and demolition wastes.
4. Hazardous Wastes (Management, Handling and Transboundary Movement) Rules 2016	✓	The project operations will generate hazardous waste and are required to obtain an authorization from Punjab Pollution Control Board.
5. Solid Waste Management Rules, 2016	✓	The project is classified as a 'waste generator' u/r 3(56).
6. The Punjab Water Resource (Management & Regulation) Act, 2020	✓	The project site has a bore well within its boundaries that is used for construction and general purposes.
Occupational Health and Safety		
1. The Building and Other Construction Workers '(Regulation of Employment and Conditions of Service) Central Rules, 1998 & Punjab Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Rules, 2008	✓	The project is in construction phase and engages workers in various capacities.
2. The Punjab Fire Prevention and Fire Safety Act, 2004	✓	The project is classified as an Industrial facility and is required to obtain a Fire Safety Certificate or Fire No Objection Certificate.

Table 3: Applicable EHSS Regulations		
Applicable Regulation	**Applicability**	**Reason for Application**
3. The Electricity Act, 2003 and the Central Electricity Authority (Measures relating to Safety and Electric Supply) Regulations, 2010 as amended	✓	The project uses electricity and has a variety of electrical equipment and fixtures in the premises.
4. The Petroleum Act, 1934 and Petroleum Rules, 2002 as amended	✓	The project site may store and use petroleum in quantities that require a licence from PESO.
Employee and Social Welfare		
1. The Building and Other Construction Workers'(Regulation of Employment and Conditions of Service) Central Rules, 1998 & Punjab Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Rules, 2008	✓	The project is in construction phase and engages workers in various capacities.
2. Minimum Wages Act, 1948	✓	The project employs personnel of various skill levels in the facility.
3. The Employees' Provident Funds (EPF) and Miscellaneous Provisions Act, 1952	✓	The Company employs more than 10 personnel across their facilities.
4. Employees' State Insurance Act (ESI), 1948	✓	The Company employs personnel whose monthly remuneration is less than INR 21,000/-
5. The Contract Labour (Regulation and Abolition) Act, 1970; and Contract Labour (Regulation & Abolition) Central Rules, 1971	✓	The Company employs workers on contract for various operations at its facilities.
6. Inter-State Migrant Workers Act, 1979	NA	The project employs only local labours for construction activities.
7. The Child and Adolescent Labour (Prohibition & Regulation) Act, 1986 amended in 2016	✓	The project may employ personnel of various skill levels in the facilities.
8. The Maternity Benefits Act, 1961	✓	The company adheres to The Maternity Benefits Act,1961, however currently women employees not present ta the site.
9. Employee Compensation Act 1923 and Amendment Act 2009	✓	The Company employs personnel whose remuneration is more than INR 21,000/- and thus not covered under ESI.

10. Private Security Agencies (Regulation) Act, 2005	✓	The Company employs private security personnel to provide security to the facilities.

Table 3: Applicable EHSS Regulations

Applicable Regulation	Applicability	Reason for Application
11. The Sexual Harassment of Women at workplace (Prevention, Prohibition and Redressal) Act 2013	✓	The company adheres to The Sexual Harassment of Women at workplace (Prevention, Prohibition and Redressal) Act 2013, and provides periodical training however currently women employees not present at the site.

3.3 Method of Assessing Compliance

The compliance status of the projects on applicable EHSS legal regulations is presented in the subsequent sub-sections **3.3, 3.4 and 3.5**. The method of reading the tables is as follows:

- The regulations and their applicable requirements are listed in the first and second columns, respectively.
- The compliance of projects with legal requirements has been indicated based on the legend given below.

C	Regulation and its requirement are applicable to the project. The project is **COMPLIANT** to the requirement.
PC	Regulation and its requirement are applicable to the project. The project is **PARTIALLY COMPLIANT** to the requirement.
NC	Regulation and its requirement are applicable to the project. The project is **NON-COMPLIANT** to the requirement.
NA	Regulation and its requirements are **NOT APPLICABLE** to the project
Info	**INSUFFICIENT INFORMATION** to assess the status of compliance/conformance

- The last column provides remarks on the status of compliance. Text in bold describes the nature of non-compliance.

3.4 Assessment of Legal Compliance – Environment

	Regulation	Legal Requirements	Compliance Status	Details of Compliance/non-Compliance
1.	Water (Prevention and Control of Pollution) Act, 1974; and Rules 1975 Air (Prevention and Control of Pollution) Act, 1981; and Rules 1982	a) Combined Consent to Establish from SPCB u/s 25 Water Act and u/s 21 Air Act	C	• The Project has obtained a Consent to Establish (CTE) by PPCB vide CTE/Fresh/SNG/2022/21162934 of Green Category dated 12/10/2022 to establish Bio-BNG Plant of capacity 20 Metric Tonnes / Day, having validity till 11/09/2023.
		b) Comply with conditions of Consent to Establish	**NC**	• **It was stated that the Company has developed a system to track/monitor compliance with CTE stipulated conditions. However, this was not available for review.** • The CTE has a few conditions specific to construction phase, compliance to which cannot be ascertained in absence of relevant documents shared for review. One of the critical conditions is as below: ○ **As per Section B. Special Condition on page 8 of the CTE, the industry shall not carry out any further construction activity at site without obtaining site clearance u/s 41 (A) of the Factories Act, 1948 for the given project. In case, the SAC refuses site clearance to the project due to any reason, the Consent to Establish (NOC) shall be deemed cancelled and the PPCB shall not be responsible for any financial liability and/ or any other liability of the project proponent, due to grant of this Consent to Establish. The company had applied obtaining site clearance but had not received the same at the time of audit.**
2.	Construction and Demolition Waste Management Rules, 2016	a) Storage of C&D waste/debris b) Mode of disposal of C&D waste u/r 4	C	• The site did not have any demolition waste as there were no structures demolished before the start of the construction. The C&D waste generated from the project was limited to concrete

	Regulation	Legal Requirements	Compliance Status	Details of Compliance/non-Compliance
				waste generated from construction activities by civil contractors. • The concrete waste generated from construction activity is collected and stored within the site premises. It was informed that this waste collected will be utilized within the site premises for levelling.
3.	Hazardous Wastes (Management, Handling and Transboundary Movement) Rules 2016	Occupier shall be responsible for safe and environmentally sound management of hazardous and other wastes. u/r 4(2)	**PC**	• Generation of hazardous waste is limited to the waste oil, generated from the maintenance of DG set. It was noted that the waste oil from DG set is taken by service provider/maintenance agencies only for disposal. • Waste paints and thinners used as part of finishing are other sources of hazardous waste. **It was noted that the waste would be disposed by Contractor upon completion of work, however the Company does not monitor if the contractor does sound disposal of hazardous waste.**
4.	Solid Waste Management Rules, 2016	a) Segregated storage of waste into 3 streams bio-degradable, non-biodegradable and domestic hazardous wastes u/r 4(a) c) Disposal of segregated wastes to authorised waste collectors or as per the direction or notification by the local authorities. u/r 4(a)	C	• Solid waste generated on-site such as metal scrap (aluminum), wood, glass etc. is collected and stored at site in dedicated areas. • The company is in process of identifying the local scrap dealer to dispose this waste collected on site.
5.	The Punjab Water Resource (Management & Regulation) Act, 2020	a) Permission for extraction of Ground Water	**PC**	• The Project has obtained “ad interim permission” for extraction of ground water, from Punjab Water Regulation and Development Authority (PWRDA) for extraction of ground water at 200 m^3/day vide PWRDA/06/2022/L2/388 dated

	Regulation	Legal Requirements	Compliance Status	Details of Compliance/non-Compliance
				21/06/2022. • **As per the conditions of the permit, the unit shall install a water meter meeting with the specification approved by the Authority at each of its extraction structures within sixty days of issue of the permission letter. Till the installation of the water meter, the Unit is required to pay the full amount for the entire volume of groundwater permitted.** • **The borewells on site are not installed with flow meters to record quantity of water extracted from the borewells.** • The water extracted from the borewells was utilized majorly for construction purposes. However, **workers on site also used borewells as a source of drinking water.**

3.5 Assessment of Legal Compliance - Occupational Health & Safety

#	Regulation	Legal Requirements	Status of Compliance	Details of Compliance/ Non-Compliance
1.	The Building and Other Construction Workers' (Regulation of Employment and Conditions of Service) Central Rules, 1998 & Punjab Building and Other Construction Workers (Regulation of Employment and	a) Safety & Health – General Provisions (Chapter IV) – physical hazards, Personal Protective Equipment (PPE), electrical hazards, vehicular traffic	**Complied**	• The project has a dedicated EHS team on site for implementation and management of Safety and Health at workplace. • Mr. Shirish Yadav is the EHS Head at site by the Company. The Company has appointed M/s Thermax as their principal contractor who had appointed two sub-contractors. One Safety Officer (SO) was appointed by Thermax and one Safety Officer (each) by both sub-contractors appointed by them, who reported to the SO of Thermax. The Thermax SO reports to EHS Head - ERMPL. • Pre-employment medical fitness tests is carried out for all workers and records on the same are maintained on site which

#	Regulation	Legal Requirements	Status of Compliance	Details of Compliance/ Non-Compliance
	Conditions of Service) Rules, 2008			were reviewed. EHS induction is followed by pre-employment medical tests for all workers and records are maintained. ● The company had identified key EHS risks and hazards arising out of the site operations, developed necessary SOP's, Job Safety Analysis (JSAs), Work Permit System, preventive maintenance & Inspection system for tools and equipment.
		b) Fire Protection	C	● The project has installed sufficient fire extinguishers and fire buckets at appropriate places throughout the site and feedstock land. Periodic internal inspections are done to maintain the firefighting infrastructure in good condition. ● Portable fire extinguishers were arranged near hot work area. ● The feedstock area is equipped with two 5,000L fire water tanks to use in case of emergency. The fire water tanks get connected with the tractors to generate required pressure during the firefighting. ● Regular mock drills were conducted on site to train workers in the use of fire extinguishers.

#	Regulation	Legal Requirements	Status of Compliance	Details of Compliance/ Non-Compliance
				• Mobile cranes are equipped with fire extinguishers.
		c) Lifting appliances and gear (Chapter VII) – testing, safe load indicators, ropes	C	• The project uses mobile cranes, d-shackle, wire rope and chain pulley blocks on site as a part of lifting appliances and gears. • The contractor has maintained a valid TPI certificate for lifting appliances and gears which were reviewed which were satisfactory.
		d) Reporting of Accidents	C	• The project had a system to record all incidents, accidents, and dangerous occurrences occurred on the site. • These incidents were recorded in prescribed format where they were investigated for the root cause of the event and feasible preventive / corrective measures were taken with the aim to avoid reoccurrence of that incident. • It was reported that the project did not have any first aid or serious incident since commencement. The EHS team had also reported near miss and had recorded 5 near misses till date.
		e) Medical examination – crane operators, exposure to special occupational hazard	C	• The Contractor ensures that a pre-employment medical examination is done for all the workers working in site**.** Records of medical examination of workers were reviewed which were found to be satisfactory.
2.	Fire NOC from Municipal Corporation under the Development Control Regulations	a) Obtaining Provisional Fire NOC at the time of obtaining Commencement Certificate from the Municipal Corporation	C	• The project has obtained a Provisional Fire NOC vide Application Pin no. 211162934 dated 09/03/2022 for the BIO CNG Plant from Additional Divisional Fire Officer, Department of Local Government, Punjab Bureau of Investment Promotion.
3.	Central Electricity Authority (Measures relating to Safety and Electric Supply) Regulations, 2010	a) General safety requirements for: - Electric supply lines and apparatus safety - Cut-out - Earthed terminal	C	• The Company has obtained a temporary electrical line connection from Punjab State Power Corporation Limited (PSPCL) for construction phase. In addition to this the project has three (3) DG sets for power backup. Two DG sets were used on feedstock land (opposite to site), and one is used within the

#	Regulation	Legal Requirements	Status of Compliance	Details of Compliance/ Non-Compliance
		- Dangerous Notice - Flexible Cables		construction site. ● The project had identified one electrician for maintenance and periodic internal inspection of all electrical connections and power tools on site. Electricians mob. no. was posted in all key areas like electrical panels and distribution boards. ● Earth resistance testing was carried, and resistance and due date was marked on the earth pits. ● The Company had developed a system to 'green tag' all safe electrical equipment/ power tools and distribution panels by monthly inspections which is well implemented.
		b) Fire buckets filled with clean dry sand and ready for immediate use for extinguishing fires, in addition to fire extinguishers suitable for dealing with electric fires shall be kept at site	C	● Sufficient sand buckets and fire extinguishers were installed near electrical panels at key areas throughout the site. ● Firefighting equipment were found to be well maintained on site.
4	The Petroleum Act, 1934 and Petroleum Rules, 2002 as amended (u/r. 116)	Obtain required Licenses for storage of petroleum from PESO	NA	● The project did not store any diesel on site.
5	Central Motor Vehicle Act 1988 and Rules 1989 (amended 2016)	a) Driver to obtain a driving license authorizing him to drive/operate the vehicle b) Owner to obtain Certificate of Registration for the vehicle	**NC**	● The vehicles used on site were limited to tractors, mobile cranes, compactor and JCB excavator which belonged to the contractors. ● **The company did not have any system in place to monitor and track the vehicle fitness certificate, PUC, insurance, and driver's license of project vehicles.**

#	Regulation	Legal Requirements	Status of Compliance	Details of Compliance/ Non-Compliance
		c) For valid registration, a transport vehicle should have a Certificate of Fitness d) Owner to obtain insurance policy for the vehicle		• **In random inspection of one of vehicles it was observed that vehicle "PB13AR5237" has expired its PUC dated 02/11/2022.** • **The Company had no control over vehicles used for transportation of the feedstock.**
6	The Gas Cylinder Rules, 2016 as amended	Obtain required license for storage of compressed gas in gas cylinders from PESO	**PC**	• The project uses argon, oxygen, and LPG gas cylinders on site for welding purposes. • The quantity of these gas cylinders stored on site were minimal quantities below, however license for storage of compressed gas cylinders is not required. • **Gas cylinders were not color coded and identified as per requirements of gas cylinder rules.** • **Further, it was observed that these gas cylinders were stored in direct sunlight (without any weather protection shed) and safety caps were not placed on all cylinder valves to prevent physical damage.**

3.6 Assessment of Legal Compliance - Employee Welfare/ Social

#	Regulation	Legal Requirements	Status of Compliance	Details of Compliance/ Non-Compliance
1.	The Building and Other Construction Workers' (Regulation of Employment and Conditions of Service) Central Act, 1996 and Rules, 1998	Contractor to obtain certificate of registration of establishment and workers under the Act	C	• Certificate of registration (Form XIII of Punjab BOCW Rules, 2008) under BOCW Act vide registration number SGR00BO6759 has been obtained in the name of M/s Sangrur RNG Private Limited on 1 April 2022. • The registration has been obtained for a maximum of 500 workers.
		Hours of work, rest intervals & weekly off (Chapter XXVI)	C	• Hours of work are defined from 8 to 5, with a break in between for lunch. • Sunday is declared as the weekly off. Workers are paid overtime rates

#	Regulation	Legal Requirements	Status of Compliance	Details of Compliance/ Non-Compliance
	&			for working on the weekly off.
	Punjab Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Rules, 2008	Welfare of Building workers (Chapter XXVIII) – latrine, urinal	**PC**	• **Insufficient latrines and urinals provided in the construction site for workers. There are only 3 toilets on the site for construction workers.** • **There is no signage outside the latrines or urinals demarcating separate toilets for males and females.** • The source of water for the toilet is the borewell.
2.	Minimum Wages Act 1948	Payment of minimum wages as per latest circular. u/s 5&12	PC	• It was reported on site that the workers are being paid minimum wages as per the latest minimum wages notification. • **In absence of wage register of the major civil contractor submitted for review it cannot be ascertained if the Company ensures that the contractor paid wages to contract labour above minimum wages as prescribed under Minimum wages act.** • **A copy of latest minimum wages abstract was not displayed by Company / Contractor.**
3.	Employees' Provident Funds (EPF) and Miscellaneous Provisions Act, 1952 amended up to 1996	Deduction of employee contribution and deposit of employee and employer contribution with the authority. u/s 6	C	• The Company stated that it monitors Contractors' EPF contribution to workers. • It was reported on site that workers are being paid EPF, and Monthly Contribution Challans of EPF are filed by the contractors. • The Monthly Contribution Challan for the month of October 2022 was shared for review.
4.	Employees' State Insurance Act (ESI), 1948	Deduction of employee contribution and deposit of employee and employer contribution with the ESI Corporation. u/s 40(1)	PC	• The Company stated that it monitors Contractors' EPF contribution to workers. • It was reported that workers are being paid ESI, and Monthly Contribution Challans of ESI are filed by the contractors. • **However, the Monthly Contribution Challans were not shared for review.**
5.	The Contract Labour (Regulation and Abolition)	a) Company has certificate of registration for employing Contract	C	• The Certificate of Registration (Form II of Punjab Contract Labour Rules, 1973) vide registration number SGR00PE5521 has been obtained in the

#	Regulation	Legal Requirements	Status of Compliance	Details of Compliance/ Non-Compliance
	Act, 1970; and Contract Labour (Regulation & Abolition) Central Rules, 1971	Labour		name of M/s Sangrur RNG Private Limited on 27 June 2022.
		b) Contractors have obtained license from the Licensing Authority for the jobs assigned to them	C	• License (Form VI of Punjab Contract Labour Rules, 1973) vide License No. SGR00CL1133 has been obtained by contractor M/s Thermax Limited, valid for up to 100 workers. • The license was issued on 1 June 2022 and is valid till 30 December 2022. However, as on-site visit date 13/12/22 the license was valid.
6.	Inter-State Migrant Workers Act 1979	Companies Registration certificate & Contractor's license for engaging migrant workers (u/s 8)	**C**	• The project employs only local labours. No inter state migrant labours available at the site.
7.	Employee Compensation Act 1923 and Amendment Act 2009	Payment of compensation to employees.	**NC**	• **An insurance policy as required for workmen compensation covering all Contract workers was not obtained by the Company.** • **Insurance policies from other Contractors and Sub-contractors were not submitted for review so it could not be determined if all contract workers and Company employees engaged on site were covered under the insurance policy.** • **The Company does not have a system in place to ensure that all Contractors cover their workers under employee compensation policy.**
8.	Child Labour (Prohibition and Regulation) Act, 1986 amended in 2017	a) No child shall be employed or permitted to work in any occupation or process.	C	• No instances of child and adolescent labour employment were observed on site. • Aadhar cards of workers are verified during screening at pre-employment stage.
		b) Working conditions for adolescent labour		
9.	Private Security Agencies (Regulation) Act (PSARA), 2005	Private Security Agency to obtain a license. u/s 4	C	• M/s Skylark Cagers India Pvt Ltd have been hired as a third-party security agency by the Company. • PSARA license has been obtained by Skylark Cagers India Pvt Ltd vide Serial No. PSA/L/19/PB/2021/AUG/3/266. The license was issued on 1 August 2021 and is valid till 31 July 2026.

#	Regulation	Legal Requirements	Status of Compliance	Details of Compliance/ Non-Compliance
10.	The Maternity Benefits Act, 1961	Right to payment of Maternity Benefits. u/s 5	C	• The company adheres to the Maternity Benefits Act,1961, however at present there are no any women employees.
11.	The Sexual Harassment of Women at workplace (Prevention, Prohibition and Redressal) Act 2013	a) Constitution of Internal Complaints Committee (ICC). u/s 4 b) Receive complaints of sexual harassment. u/s 9 a) Submission of annual return to the District Officer c) Conduct enquiry on receipt of complaint. u/s 11	C	• Internal Complaints Committee has been constituted by the company at the group level on 21 September 2022. • At the site, no females were employed at the time of audit.

3.7 Assessment of Legal Compliance - Land

#	Regulation	Legal Requirements	Status of Compliance	Details of Compliance/ Non-Compliance
1.	Panchayats Act, 1994	Permission for construction of projects including the installation of machinery	C	• NOC has been obtained by the company from respective Gram Panchayat prior to construction and operation of project. • In addition, SDM Report (report on location of sensitive receptors 100 m away from project site Village Road, habitation, village boundary, Municipal area, Pucca houses), LoA issued by Punjab Energy Development Authority for setting up a Bio-CNG plant stating the location and capacity, and Certificate under the Right to Business Act 2020 issued by the District Nodal Agency issued to the company were available for review.

4 Status of Conformance to IFC Performance Standards

4.1 Applicability of IFC Performance Standards

There are a total of eight (8) Environmental and Social Performance Standards under IFC's Sustainability Framework of 2012, the applicability of which is assessed in **Table 4**.

Table 4: Establishing Applicability of IFC Performance Standards

Performance Standard	How the Performance Standard is applicable?	Statement on Applicability
Performance Standard 1: Assessment and Management of Environmental and Social Risks and Impacts	The project activities have the potential to cause environmental and social impacts.	**Applicable**
Performance Standard 2: Labor and Working Conditions	The project employs skilled, semi-skilled and skilled personnel for various operations.	**Applicable**
Performance Standard 3: Resource Efficiency and Pollution Prevention	The project consumes resources (water, energy) and generates effluent and waste (solid, e-waste, hazardous waste, construction, and demolition).	**Applicable**
Performance Standard 4: Community Health, Safety, and Security	The project could potentially impact the community health, safety, and security.	**Applicable**
Performance Standard 5: Land Acquisition and Involuntary Resettlement	The project does not involve land acquisition of any kind.	Not Applicable
Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	The projects do not interact with forests or biodiversity rich areas.	Not Applicable
Performance Standard 7: Indigenous Peoples	The projects have not been developed on Scheduled Areas or tribal lands	Not Applicable
Performance Standard 8: Cultural Heritage	The projects are not located near any place of cultural importance.	Not Applicable

4.1.1 World Bank Group's EHS Guidelines

The IFC Performance Standard 3: Resource Efficiency and Pollution Prevention refers to World Bank Group's EHS Guidelines. The **EHS General Guidelines** is applicable to the Company and the project site. For ease of reference, the General guidelines have been integrated with the IFC Performance Standards as applicable.

4.2 Method of Assessing Compliance and Gaps

The assessment of projects with requirements of IFC Performance Standards 1, 2, 3, and 4 and WB-General EHS guidelines is presented in the subsequent **sub-sections 4.2.2, 4.2.3, 4.2.4, and 4.2.5** respectively.

4.2.1 Method of Assessment

The method of reading the tables under these sections is as follows:

- The requirements of the IFC-PS and WB-EHS guidelines are listed in the first column.
- The level of alignment of the projects with the IFC-PS and WB-EHS guideline requirements has been determined and assessed based on the legend given below.

Aligned	Requirement is applicable to the project. The project is **in alignment** with the intended outcome of the requirement.
Partially Aligned	Requirement is applicable to the project. The project partially fulfils or **partially aligns** with the intended outcome of the requirement.
Not Aligned	Requirement is applicable to the project. The project **does not fulfill or align** with the intended outcome of the requirement.
Insufficient Information	Requirement is applicable to the project. **Information** to assess the level of alignment is **insufficient**.
NA	Requirement is **not applicable** to the project.

- The last column provides remarks on the status of alignment. Text in **bold** describes the nature of non-alignment.

4.2.2 Performance Standard 1 – Assessment and Management of Environmental and Social Risks and Impacts

#	IFC PS Requirements 2012	Alignment Status	Details of Conformance/ Non-Conformance
1.	Environmental and Social (E&S) Policy	Aligned	• The Company has developed a Health, Safety, Social, Environment & Quality (HSSEQ) Policy at Corporate level. • Further at project level, the EPC Contractor has developed an OHSE policy which is well displayed at the site at key locations.
2.	Process for identifying the environmental and social risks and impacts	Aligned	• The company has developed an E&S screening checklist to identify the environmental and social risks. • The screening of E&S risks and impact was carried out by the ERMPL team for this site. Further a site-specific HIRA was developed by the EPC contractor which was reviewed by the Company EHS Head. • Management programs, training requirements, operational controls etc. are developed for the risks identified as part of the HIRA. • The project has identified sufficient resources for implementation and monitoring of these management programs.
3.	Management programs for performance improvement measures and actions for identified environmental and social risks		
4.	Organization structure that defines roles, responsibilities, and authority to implement the ESMS	Aligned	• At present, seven (7) managerial employees of ERMPL are working on site who have defined roles and responsibilities for project monitoring and execution. • ***Please refer Section 2.2 of this document for Organization structure of the project.***
5.	Emergency preparedness and response (EPR) system	Aligned	• A site specific EPR manual is prepared by EPC Contractor (Thermax) for the project which has identified the potential emergencies which may occur on site. • Internal and external emergency contact numbers are identified as part of the EPR manual. • Periodic mock drills are conducted on site on all potential emergencies and records for the same are maintained.
6.	Procedures to monitor and measure the effectiveness of the management program, as well as compliance with any related legal and/or contractual obligation	**Partially Aligned**	• Compliance to projects specific legal requirements was monitored and recorded from the site office of the project. • **A suitable checklist/ tracker to monitor other contractual obligations had not been developed.**
7.	Stakeholder Engagement for	**Partially Aligned**	• Grievances from neighboring communities, if

#	IFC PS Requirements 2012	Alignment Status	Details of Conformance/ Non-Conformance
	information disclosure and grievance mechanism Procedure for external communications receipt, analysis, response, and action plan Ongoing Reporting to Affected Communities		any, would be directed to the Company representative present on-site. The Company representative would be responsible for redressal of the same. • **However, a grievance register is not maintained on site by the project team, and issues are heard and solved through verbal communication.**

4.2.3 Performance Standard 2 - Labour and Working Conditions

#	IFC PS Requirements 2012	Alignment Status	Details of Conformance/Non-Conformance
1.	Adopt and implement human resources policies and procedures	Aligned	• The Company has an HR department who has developed several policies and procedures for human resource management. The Company has developed policies to demonstrate its commitment to good corporate governance in its business operations. These policies include the following: ○ Care and Dignity Policy ○ Employee "Fair Play" and "Equal Opportunities" Code ○ EverEnviro's Care and Dignity Policy for protection against sexual harassment at workplace ○ Framework for Managing Conflicts of Interest ○ Whistleblowing Policy ○ Health, Safety, Social, Environment & Quality (HSSEQ) Policy ○ Anti-Corruption Policy ○ Anti-Money Laundering and Countering the Financing of Terrorism Policy ○ Code Of Conduct for Prevention of Insider Trading ○ Declaration of Fidelity and Secrecy • The company outsources HR related compliances to an experienced third-party vendor. The company (HR and IR Teams) supervises and tracks the status of compliance through an in-house excel-based tracker. • The company undertakes induction training for all its employees. A structured induction module was prepared and was under review

#	IFC PS Requirements 2012	Alignment Status	Details of Conformance/Non-Conformance
			during the time of audit. • The Company employs seven (7) full-time employees as part of their on-site team for the project.
2.	Provide workers with documented information regarding their rights under national labour and employment law	**Partially Aligned**	• The Company's HR provides employees with documented information regarding their rights under national labor and employment law in appointment letters. • **The workers appointed by the Contractors were provided with verbal communication on the work hours, wages, and other welfare benefits.** • **Sample appointment letter issued to the workers by the contractor were not available for review.**
3.	Respect collective bargaining agreement with workers' organization	Aligned	• Clauses discouraging collective bargaining or formation of worker unions were not observed as part of the HR policies of the Company. • Further during consultation with site staff and the corporate HR team, it was reported that no formal workers organizations were present at the Company or at the facility.
4.	Not discourage workers from electing worker representatives, forming or joining workers' organizations for collective bargaining. Will not discriminate against workers joining such organizations.	Aligned	• No instance of company discriminating against or discouraging workers from electing worker representatives, forming, or joining workers' organizations for collective bargaining collective bargaining agreement with workers' organization. • There does not exist a workers' organization or collective on site currently. • Most workers engaged were through Contractors and sub-contractors who had appointed supervisors to whom complaints if any, were addressed.
5.	Base the employment relationship on the principle of equal opportunity	Aligned	• No instance of unfair treatment or conditions creating unequal opportunity

#	IFC PS Requirements 2012	Alignment Status	Details of Conformance/Non-Conformance
	and fair treatment		were evidenced.
6.	Take measures to prevent and address harassment, intimidation, and/or exploitation, especially regarding women	-	• **Please refer section 3.5.11.**
7.	Provide a grievance mechanism for workers (and their organizations, where they exist) to raise workplace concerns.	Aligned	• It was reported that worker grievances related to work activities, if any, were addressed to their work supervisors and contractors. • It was also reported that no major grievances had been reported till date. • The grievances are maintained in an excel file at the company level.
8.	Not employ children in any manner that is economically exploitative, or is likely to be hazardous or to interfere with the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral, or social development	Aligned	• No instances of child labour were observed on site. • It was reported that child labour was strictly restricted and age verification mechanisms were put in place and the same was communicated to the respective Contractor while signing the work order.
9.	Not employ forced labour, which consists of any work or service not voluntarily performed that is exacted from an individual under threat of force or penalty	Aligned	• No instances of Company engaging in forced labour practices were noted during the discussions and site visit.
10.	Provide a safe and healthy work environment, taking into account inherent risks in its particular sector and hazards in work areas	***Intentionally left blank***	
	a) Slips & Falls b) Struck by objects. c) Work at Height d) Overexertion	-	• **Please refer to point no. 1 (a) of Section 3.4 for observations on slips, falls, work at height and struck by objects.** • Work hours were defined at 9 hours per day including rest periods for lunch and tea.
	e) Confined spaces & excavations	NA	• The present work did not involve excavations and creation of confined spaces.
	f) Moving machinery	Aligned	• No unsafe equipment / machinery could be evidenced on site.
	g) Dust	Aligned	• It was reported that the sprinkling of water

#	IFC PS Requirements 2012	Alignment Status	Details of Conformance/Non-Conformance
			would be carried out to minimize dust generation resulting from finishing works
	h) Exposure to dust, chemicals, hazardous or flammable materials, and wastes in a combination of liquid, solid, or gaseous forms	**Partially Aligned**	• Chemicals stored on-site were minimal, which included those required for waterproofing, paints, shuttering etc. • **Material Safety Data Sheets (MSDS) of the chemicals used on site were not displayed at storage locations. Awareness of MSDS was poor. Secondary containment and spill trays were not in place to retain accidental spills.** • **Please refer to point no. 1 (a) of Section 3.4 for observations**
	i) Fire precautions	-	• **Please refer point 1(b) of Section 3.4**
	j) Potable Water Supply	**Not Aligned**	• **Borewell water is used for drinking purposes by workers on site.** • **In absence of drinking water test records submitted for review, water potability cannot be ascertained.**
	k) First aid	Aligned	• First aid box was available on site and the contents were found to be satisfactory.
	l) Labour camps	-	• The Contractors are responsible for provision of labour camp and facilities to the workers. • **Please refer to point 5 under section 4.2.3.**
	m) Communication and Training • OHS Training • New Task Employee and Contractor Training • On-site first-aid training	-	• It was reported that tools box talks, induction, mock drills, incident reporting and investigation were carried out. Photographic evidence of the same was reviewed in the site office. • Records of the communication & training were maintained by safety officer.
11.	With respect to contracted workers, ascertain that the third parties who engage these workers are reputable and legitimate enterprises	Aligned	• It was reported that the Company primarily engages with Contractors with whom it has experience of working in past. • It was ensured that these contractors are legitimate enterprises.
12.	Monitor primary supply chain on an ongoing basis to identify new risks or incidents of child and/or forced labour, and life-threatening situations	**Not Aligned**	• The primary suppliers of the project include suppliers of construction material, and feedstock from farmers. • The company has a draft SOP for supply chain management. The company has a purchase policy and procurement policy in practice for the purchase of construction material.

#	IFC PS Requirements 2012	Alignment Status	Details of Conformance/Non-Conformance
			• **However, the Company does not have any influence over practices adopted by the feedstock suppliers. Monitoring of supply chain for feedstock is not practiced.**

4.2.4 Performance Standard 3: Resource Efficiency and Pollution Prevention

#	IFC PS Requirements 2012	Alignment Status	Details of Conformance/ Non-Conformance
1.	Implement technically and financially feasible and cost-effective measures for improving efficiency in its consumption of energy, water, as well as other resources focusing on core business areas. a) Energy Conservation b) Water Conservation	NA	• At present no specific measures related to conservation of energy and water have been implemented on-site. However, it was stated by the project site team that the measures have been incorporated in the project design.
2.	Take measures to avoid and reduce release of pollutants to air, water, and land due to routine, non-routine, and accidental circumstances with the potential for local, regional, and trans-boundary impacts.	***Intentionally left blank***	
	a) Noise & Vibration	Aligned	• Most of the activities carried out at present do not involve generation of high noise and vibration.
	b) Soil erosion	NA	• Project activities will not cause soil erosion and hence this requirement is not applicable.
	c) Air quality	**Partially Aligned**	• The project uses a DG set for power backup only. **However, stack monitoring of the DG sets is not practiced till date.**
	d) Solid Waste	-	• ***Please refer point #2 & #4 of Section 3.3***
	e) Hazardous materials	-	• ***Please refer point #3 of Section 3.3***
	f) Wastewater discharges	Aligned	• Wastewater discharges were limited to the sewage from toilets and washrooms which were collected in underground septic tanks.
	g) Contaminated land	Aligned	• No instances of land contamination were observed on site.

4.2.5 Performance Standard 4: Community Health, Safety, and Security

#	IFC PS Requirements 2012	Alignment Status	Details of Conformance/ Non-Conformance
1.	Design, construct, operate, and	Info	• The project is in construction stage and in

#	IFC PS Requirements 2012	Alignment Status	Details of Conformance/ Non-Conformance
	decommission the structural elements or components considering risks to third parties		absence of factory license & approved layout the compliance cannot be ascertained.
2.	Avoid or minimize the potential for community exposure to hazardous materials and substances that may be released by the project.	-	***Please refer points 2, 3, 4, 5 & 6 of Section 3.3 and points 2 (a)(b)(c) & (g) of Section 4.2.4 of this document.***
3.	Avoid or minimize the potential for community exposure to water-borne, water-based, water-related, and vector-borne diseases, and communicable diseases that could result from project activities	-	***Please refer points 2 (f) of Section 4.2.4 of this document for further details.***
4.	Assess risks posed by its security arrangements to those within and outside the project site.	-	***Please refer #9 of Section 3.5 of this document.*** • It was reported that the security staff present at these sites were unarmed and possessed no major threat within and outside the facility.
5.	Assist and collaborate with the Affected Communities, local government agencies, and other relevant parties, in their preparations to respond effectively to emergency situations. • Emergency Preparedness and Response • Life and Fire Safety	Aligned	• The Contractor has prepared site-specific emergency preparedness response plan for the project which has identified potential emergencies which may occur on site. • The EPRP identifies an Emergency Control Team on site which has defined roles and responsibilities in case of emergencies. • Regular mock drills on potential emergencies are conducted on site periodically.
6.	The project's direct impacts on priority ecosystem services may result in adverse health and safety risks and impacts to Affected Communities.	Aligned	• The projects do not result in loss of natural buffer areas such as wetlands, mangroves, and upland forests.
7.	Traffic Safety	**Partially Aligned**	• **Only verbal communication was carried out to the third-party vendors to ensure that all permits and licenses were maintained.** • In addition to this, security guards played a role for management of vehicular traffic on site.
8.	Restricting access to the site, through a combination of institutional and administrative controls	Aligned	• Site access was restricted to authorized persons only. • Security guards were present at the site to monitor and ensure restricted access to unauthorized people. • Barricading of the project boundary was carried out to ensure restricted access.
9.	Removing hazardous conditions on construction sites:	-	***Please refer points 1(a) of section 3.4 of this document.***

#	IFC PS Requirements 2012	Alignment Status	Details of Conformance/ Non-Conformance
	• covering openings to small, confined spaces • ensuring means of escape for larger openings such as trenches or excavations. • locked storage of hazardous materials		

4.2.6 Performance Standard 5: Land Acquisition

#	IFC PS Requirements 2012	Alignment Status	Details of Conformance/ Non-Conformance
1.	Land rights or land use rights procured through negotiated settlements with property owners or those with legal rights to the land if failure to reach settlement would have resulted in expropriation or other compulsory procedures	Aligned	• The private land for the entire project has been procured by the "willing buyer- willing seller" negotiations. It was confirmed that the project does not involve any force eviction and that the land sellers have been paid based on mutual negotiations and consultations.
2.	Payment of compensation for land purchased		
3.	Project situations where involuntary restrictions on land use and access to natural resources cause a community or groups within a community to lose access to resource usage where they have traditional or recognizable usage rights.	Aligned	• No such instances have been observed on site and during interactions it was reported that care is taken during land procurement that such involuntary restrictions are avoided or mitigated appropriately.
4.	Disclosure of relevant information and participation of affected communities – related to land	Aligned	• During the interactions and through the documents reviewed, it was understood that the local community and land sellers are informed of the end use of this transaction and all negotiations are undertaken in a fair and transparent manner.
5.	Grievance Redress Mechanism for affected communities – related to land	**Partially Aligned**	• For any concerns related to the land purchase, the Company is contacted. • During the site visit, it was reported by the site team that there have been no instances of major grievances till date on aspects related to land and thus it is not documented. • ***Please refer IFC PS 1, point 7 (Section 4.2.2. Point 7).***

5 Environmental & Social Action Plan

5.1 Prioritization of Actions

The actions to be undertaken for establishing compliance to legal requirements and conformance to IFC Performance Standards have been provided in the subsequent sub-sections.

The actions will be classified as 'High', 'Medium', 'Low' and 'Good Practice', to enable prioritization and planning of human and financial resources.

- '**High**' priority actions demand urgent attention. These actions if not implemented could lead to legal liabilities or emergency situations. These actions should be implemented at the earliest. These are mostly related to absence of consent/ permit/ approval from regulatory authorities that pose a threat to business continuity.
- '**Medium**' priority actions are those which are management program oriented. This also covers such actions, which if not implemented, can lead to potential legal labilities. These actions would need time to create a systemic approach.
- '**Low**' priority actions are those which are management program oriented. The actions are more practice oriented.
- '**Good Practice'** are actions, which if implemented by the company would add value to the system. Many of them have been identified as a result of IFC Performance Standards and EHS Guidelines.

5.2 Methodology of Action Plan

The E&S Action Plan (ESAP) for establishing compliance to EHS legal requirements, aligning to the IFC Performance Standards and WB-EHS guidelines has been provided in subsequent subsections.

The method of reading the E&S – Action Plan is as follows:

a) The second column lists the non-compliance / non-conformance identified during the evaluation presented in Section 3 and Section 4 of this report.
b) The recommended actions for closing the non-compliance/ non-conformance have been specified in the third column.
c) The fourth column assigns priority as High, Medium, Low, and Good Practice based on the nature of non-compliance/ non-conformance identified.
d) The responsibility of implementation and required timeline is presented in the fifth & sixth columns.
e) The seventh and eighth column provides monitoring guidance (evidence to be checked on completion of the action) and an estimate on cost/resources.

5.3 ESAP - Legal Compliance

#	Nature of Non-Compliance	Recommended Action	Priority	Responsibility	Timeline	Expected Deliverables	Estimated cost / Resource needs	Way Forward
A. Legal Compliance – Environment								
1	• It was stated that the Company has developed a system to track/monitor compliance with CTE stipulated conditions. However, this was not available for review.	• The Company shall ensure and periodically monitor compliance to conditions of CTE – the Company before starting construction activity shall obtain site clearance u/s 41 (A) of the Factories Act, 1948 for the given project	High	Company Management Project Site Management	3 months	Compliance Report of conditions of CTE along with required evidence	Managem ent time	The Company will develop a comprehensive CTE compliance report and adhere to the CTE conditions
2	• The borewells on site are not installed with flow meters to record quantity of water extracted from the borewells.	• The Company shall obtain NOC for extraction of water for all the borewells which are being utilized to extract ground water. • Water flow meters shall be installed on borewells to record and ensure water withdrawal within the permitted limits in the NOC/approval.	High	Company Management and Project Site Management	3 months	NOC/approval for water withdrawal **(2nd borewell)** Water flow meter installation on bore well and daily withdrawal records	Managem ent time Fees for obtaining the NOC. Cost of purchasing and installing flow meters	Application for NOC for water withdrawal has been applied and followed up with Punjab Water Development Board Water Flow meter will be fixed.

3	It was noted that the waste would be disposed by Contractor upon completion of work, however the Company does not monitor if the contractor does sound disposal of hazardous waste. The Company/Contractor has not identified any authorized agency f o r hazardous waste disposal.	The Company/Contractor shall identify hazardous waste generated from the site and collect it centrally in a hazardous waste storage area. • The waste generated shall be channelized to authorized hazardous waste recycler or dismantler, and the hazardous waste manifest shall be maintained.	**High**	Project Site Management Contractor's team	3 months	Tie-up and disposal records with authorised recycler	Managem ent time Cost of hiring an authorized vendor	• SOPs for waste management has been developed and communicated to all team members • Records of waste disposal maintained at the site. • Any hazardous waste generated if any will be disposed through authorized recyclers only.

B. Legal Compliance – Occupational Health & Safety								
4	Some gaps as mentioned below were observed during the visit: ● Work permit system does not mention no. of workers and TBT records on work permit is not filled by permit issuer. ● Chemical/paint storage do not have spill trays or secondary containment – MSDS display, and communication is not done. ● Safety latches and Automatic Safe Load Indicator (ASLI) is not installed in crane.	● The work permit system must be implemented effectively. The work permit shall record no. of persons to be engaged in the work activity. TBT sheet in the work permit is not filled. ● All chemical / paint storage shall be stored within a secondary containment with spill tray or bund walls to retain spills. MSDS of the chemical / paint shall be displayed and communicated to the user. ● Mobile crane shall be installed with safety latches and ASLI – periodic internal inspection shall be done to monitor	**High**	Project Site Management Contractor's team	3 months	Dated photographs of compliance	Managem ent time only	● Ever Enviro Business specific ESGMS was finalized in February 2023 that includes HSE and IMS. The systems and procedures are diligently followed.

#	Nature of Non-Compliance	Recommended Action	Priority	Responsibility	Timeline	Expected Deliverables	Estimated cost / Resource needs	Way Forward
5	The below gaps were observed during the site visit: • Electrical DB's found in poor condition – loose cable routing, splices in wires and no rubber mats in front of electrical installations.	• The Company must ensure periodic inspection of all electrical installations, distribution boards, power tools and cable routings. • All unsafe tools/equipment observed in periodic inspection must be tagged red and shall be removed from site until rectified. • Rubber mats shall be placed in front of all electrical DB's. • As per the CTE issued to the project, the industry shall put up canopy on its DG sets and provide stack of adequate height as per norms prescribed by the Board and shall ensure the compliance of instructions issued by the Board vide office order no.	High	Project Site Management Contractor's team	3 months	Records of inspection Electrical safety inspection reports (internal) Dated photographs. Purchase order issued for the installation of stacks and payments released.	Management time Cost of purchasing rubber mats and electrical safety gloves. Costs for fabrication (DG Set stack)	• Work permit system has been implemented at the site. • Appropriate usage of PPEs are being ensured. • All chemical /paint containers are stored in the separate secondary containment • Rubber gloves are being provided to the electricians.

#	Nature of Non-Compliance	Recommended Action	Priority	Responsibility	Timeline	Expected Deliverables	Estimated cost / Resource needs	Way Forward
		Admin./SA- 2/F.No.783/2011/448 dated 8/6/2010. • As per the CTE issued, for DG set of capacity between 0 kVA to 50 kVA, total stack height required = Height of building in which DG set is installed (m.) + 1.5 m. For DG set of capacity between 50 kVA to 100 kVA, total stack height required = Height of building in which DG set is installed (m.) + 2 m. For DG set of capacity between 100 kVA to 150 kVA, total stack height required = Height of building in which DG set is installed (m.) + 2.5 m. For DG set of capacity between 150 kVA to 200 kVA, total stack height required = Height of building in which DG set is installed (m.) + 3 m.						Proper Stack height shall be maintained
6	• The company did not have any system in place to monitor and track the vehicle fitness certificate, PUC, insurance, and driver's license. The Company had no control over vehicles used for	The company must establish a system in place to monitor and track the vehicle fitness certificate, PUC, insurance, and driver's license of all the project vehicles along with vehicles used for transportation	**Medium**	Project Site Management Contractor's team	6 months	Records of details of project vehicle/driver details	Management time only	• Ever Enviro Business specific ESGMS was finalized in February 2023 that

	transportation of the feedstock. • In random inspection of one of vehicles it was observed that vehicle "PB13AR5237" has expired its PUC dated 02/11/2022.	of feedstock. • A master list of the project vehicles can be maintained to keep a track.						includes HSE and IMS. The systems and procedures are diligently followed.

#	Nature of Non-Compliance	Recommended Action	Priority	Responsibility	Timeline	Expected Deliverables	Estimated cost / Resource needs	Way Forward
7	• Gas cylinders were not colour coded and identified as per requirements laid in gas cylinder rules. • Further, it was observed that these gas cylinders were stored in direct sunlight (without any weather protection shed) and safety caps were not placed on all cylinder valves to prevent physical damage. Suitable cylinder trolleys for easy movement of gas cylinders were not available.	• The Company must ensure that gas cylinders procured shall have color coding and identification as per gas cylinder rules. • Gas cylinders shall be stored in a well-ventilated space away from direct sunlight with safety caps always on the valve. • Transportation/movement shall be with securing the cylinder in a cylinder trolley.	High	Project Site Management	1 month	Dated photographs of gas cylinder with colour coding & cylinder storage area photos.	Management time Cost of achieving compliance	• Ever Enviro Business specific ESGMS was finalized in February 2023 that includes HSE and IMS. The systems and procedures are diligently followed. • Gas Cylinders will be stored in the proper designated location
C. Legal Compliance – Employee Welfare/ Social								
8	• In absence of wage register of the major civil contractor submitted for review it cannot be ascertained if the Company	• The Company shall ensure that all contract workers are paid remuneration by the contractor that is equal to or	High	Project Site Management Contractor's	1 months	Copy of revised Wage Register Copy of payment	Management time only	

#	Nature of Non-Compliance	Recommended Action	Priority	Responsibility	Timeline	Expected Deliverables	Estimated cost / Resource needs	Way Forward
	ensures that the contractor paid wages to contract labour above minimum wages as prescribed under Minimum wages act. • A copy of latest minimum wages abstract was not displayed by Company / Contractor.	above the minimum wages stipulated by the State Labour Department. The company shall keep records of wages paid by the contractors and monitor them on a regular basis. • The Company shall also monitor Contractors EPF and ESI contribution to workers. • The difference in wages for the months in which the wages paid were less than minimum wages should be calculated and paid at the earlies. • The Company should ensure that the arrears are paid to the workers by the Contractor. • The latest minimum wage abstract in local language shall be displayed at strategic locations within the project site.		team		slips with payment of arrears. Copy of ESI and EPF challans Dated photographs of abstracts displayed on site.		Ever Enviro Business specific ESGMS was finalized in February 2023 that includes HSE and IMS. The systems and procedures are diligently followed.
9	• Insufficient latrines and urinals provided in the construction	• Sufficient latrines and urinals shall be provided on site.	**Medium**	Project Site Management	3 months	Photographs of separate toilets	Management time only	Workers rest rooms will be provided

#	Nature of Non-Compliance	Recommended Action	Priority	Responsibility	Timeline	Expected Deliverables	Estimated cost / Resource needs	Way Forward
	site for workers. There are only 3 cubicles for workers on the site. • There is no signage outside the latrines or urinals demarcating separate toilets for males and females.	• Separate male and female toilets shall be installed and identified by appropriate signage/labeling.		Contractor's team		for male & females	Expense for setting up infrastructure	
10	• Registration of the project and license under the Inter-State Migrant Workers Act to engage inter-state migrant workers has not been obtained by the company and contractor respectively.	• Application should be submitted by the Company to obtain registration for the project engaging inter-state migrant workers under the Inter-State Migrant Workers Act. • Application should be submitted by the Contractor to obtain license for engaging inter-state migrant workers under the Inter-State Migrant Workers Act.	High	Project Site Management Contractor's team	3 months	Copy of Registration Certificate Copy of License	Management time only	The Project employs local labours Ever Enviro Business specific ESGMS was finalized in February 2023 that includes HSE and IMS. The systems and procedures are diligently followed.
11	• An insurance policy as required for workmen compensation covering all Contract workers was not obtained by the Company. Insurance policies from other Contractors and Sub-	• The Contractors should obtain a Group Personal Accidental Insurance for the maximum workers employed by them in the project. Once obtained a copy of the same should be submitted to	High	Project Site Management Contractor's team	3 months	Copy of Insurance policy	Management time Cost of procuring policy	Ever Enviro Business specific ESGMS was finalized in February 2023 that includes HSE and IMS. The systems and procedures are diligently followed.

	contractors were not submitted for review so it could not be determined if all contract workers and Company employees engaged on site were covered under the insurance policy. • The Company does not have a system in place to ensure that all Contractors cover their workers under employee compensation policy.	the Developer for records. • Alternatively, the Developer may obtain an insurance policy for maximum number of workers employed in the project.						

#	Nature of Non-Compliance	Recommended Action	Priority	Responsibility	Timeline	Expected Deliverables	Estimated cost / Resource needs	Way Forward
13	• Awareness session on POSH/sexual harassment is not conducted on site and contact details of Internal Complaints Committee members is not displayed on site. • In absence of relevant documents, it cannot be ascertained if the Company files annual returns to District Officer.	• When women workers are employed on-site, the Company / Contractor shall establish a mechanism for the women to report complaints related to sexual harassment. • Awareness training on the same shall be provided to all women.	**Medium**	Project Site Management Contractor's team	6 months	Develop Policy and procedure, Training, ICC member list, and Awareness records	Management time Cost of conducting training and awareness program/s	Ever Enviro Business specific ESGMS was finalized in February 2023 that includes HSE and IMS. The systems and procedures are diligently followed. POSH training will be conducted as per the requirement

5.4 ESAP - IFC Performance Standards

#	Nature of Non-Compliance	Recommended Action	Priority	Responsibility	Timeline	Expected Deliverables	Estimated cost / Resource needs	Way Forward
A. IFC Performance Standard 1								
1.	• A suitable checklist/ tracker to monitor other contractual obligations had not been developed.	• The Company shall identify all legal requirements and other contractual obligations and monitor and track compliance of all the legal regulations and contractual obligations.	**High**	Company Management Project Site Management	3 months	Legal compliance tracker	Management time only	Company has developed a legal tracker
2.	• Grievance register is not maintained on site by the project team.	• Any grievances reported by stakeholders shall be resolved and recorded in a grievance register on site by the Company.	**Medium**	Company Management Project Site Management	6 months	Grievance register	Management time only	Grievance register has been maintained
B. Performance Standard 2: Labour and Working Conditions								
3.	The workers appointed by the Contractors were provided with verbal communication on the work hours, wages, and other welfare benefits. Sample appointment letter issued to the workers by the contractor were not available for review.	The latest minimum wage abstract in the local language shall be displayed at strategic locations within the project site. The appointment letter issued to workers by the contractor Should communicate work hours, wages, and other welfare benefits in local language.	**Medium**	Company Management Project Site Management	6 months	Dated photographs of abstracts displayed on site.	Management time only	Ever Enviro Business specific ESGMS was finalized in February 2023 that includes HSE and IMS. The systems and procedures are diligently followed.

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#	Nature of Non-Compliance	Recommended Action	Priority	Responsibility	Timeline	Expected Deliverables	Estimated cost / Resource needs	Way Forward
4.	• The Contractor is not monitoring the provision of accommodation and basic services on-site and off-site.	• Permanent and well-ventilated accommodation with electricity supply should be provided to the workers on-site and in the labour accommodation. The labour accommodation should be provided with security personnel. • Potable water should be provided to the workers on-site and in the labour accommodation. • Permanent and sufficient sanitation facilities shall be provided to the workers on-site and in the labour camp by the Company and Contractor. • Male and female toilets shall be identified by labelling or pictorial signages.	High	Project Site Management Contractor's team	3 months	Dated with corrective actions taken for accommodation and sanitation facility on-site and off-site	Management time Cost of construction the required infrastructure	Ever Enviro Business specific ESGMS was finalized in February 2023 that includes HSE and IMS. The systems and procedures are diligently followed.

#	Nature of Non-Compliance	Recommended Action	Priority	Responsibility	Time line	Expected Deliverables	Estimated cost / Resource needs	Way Forward
		• The toilets shall have sufficient illumination, door closure and water supply.						
5.	• Procedures for addressing collective dismissals/ retrenchment have not been developed by the Company.	• The Company as part of the HR manual should develop a procedure for addressing collective dismissals/ retrenchment.	**Medium**	Company Management	3 months	Revised HR manual incorporating procedure for addressing collective dismissals/ retrenchment	Management time only	Ever Enviro Business specific ESGMS was finalized in February 2023 that includes HSE and IMS. The systems and procedures are diligently followed.
6.	• Borewell water is used for drinking purposes by workers on site. • In absence of drinking water test records submitted for review, water potability cannot be ascertained.	• Drinking water potability test shall be conducted of the drinking water source on site to ensure that the water is potable.	**High**	Project Site Management Contractor's team	1 month	Drinking water potability test records	Management time Cost of purchasing water testing kits	Drinking water test will be conducted at regular intervals as per CTE conditions

7.	• The Company does not have any influence over practices adopted by the feedstock suppliers. Monitoring of supply chain for feedstock is not practiced.	• The Company shall monitor primary supply chain on on- going basis to identify new risks or incidents and life-threatening situations and any damage to the quality of feedstock.	High	Company Management Project Site Management	3 months	Risk identification from supply chain	Management time only	Feed stock monitoring mechanism has been developed and monitored regularly.

#	Nature of Non-Compliance	Recommended Action	Priority	Responsibility	Timeline	Expected Deliverables	Estimated cost / Resource needs	Way Forward
C. IFC PS Performance Standard 3								
8.	• Stack monitoring of the DG sets is not practiced till date.	• Stack monitoring shall be conducted for periodic monitoring of DG set stack emissions.	**Medium**	Project Site Management Contractor's team	3 months	DG set stack monitoring reports	Management time Cost of monitoring	Ever Enviro Business specific ESGMS was finalized in February 2023 that includes HSE and IMS. The systems and procedures are diligently followed.
C. IFC PS Performance Standard 4								

9.	• Only verbal communication was carried out to the third- party vendors to ensure that all permits and licenses were maintained.	• The company should collect a copy of required permits and licenses from all third-party vendors. • Compliance with all relevant E&S legal requirements should form part of the contract agreement.	High	Company Management Contractor's team	3 months	A copy of required permits and licenses	Management time only	Ever Enviro Business specific ESGMS was finalized in February 2023 that includes HSE and IMS. The systems and procedures are diligently followed.

6 E&S Categorization of the Project

As part of the review of environmental and social risks and impacts of a proposed investment, IFC uses a process of environmental and social categorization to reflect the magnitude of risks and impacts.

These categories are:

- **Category A**: Business activities with potential significant adverse environmental or social risks and/or impacts that are diverse, irreversible, or unprecedented.
- **Category B**: Business activities with potential limited adverse environmental or social risks and/or impacts that are few in number, generally site-specific, largely reversible, and readily addressed through mitigation measures.
- **Category C**: Business activities with minimal or no adverse environmental or social risks and/or impacts.

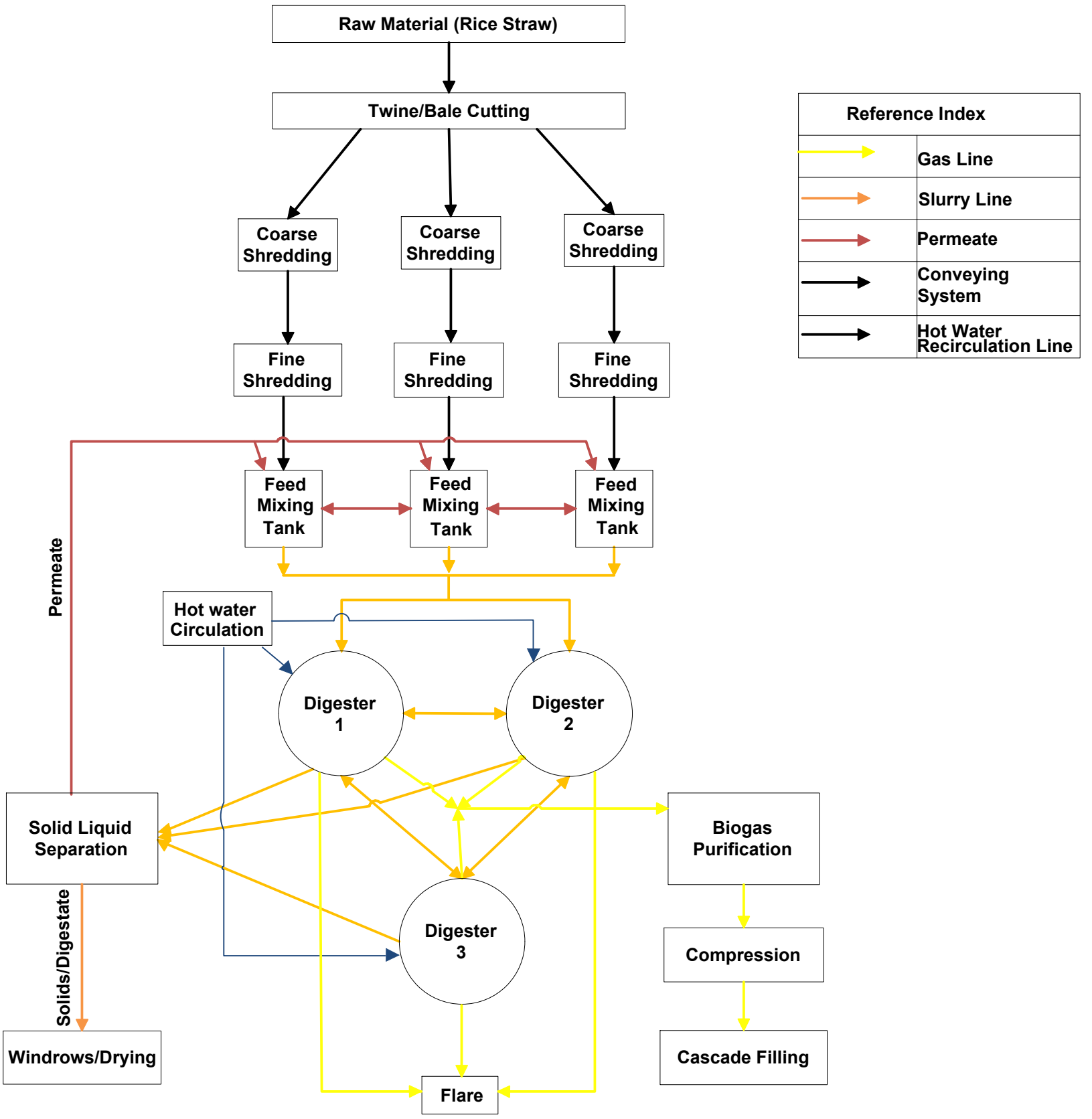
The Project is categorized as **Category B** given that it implements the recommended E&S Action Plan (ESAP) in a timely manner. Other reasons for assigned it is a Category B project includes:

- The activities during project construction and O&M phase are expected to result in environmental and social (occupational health & safety, labour welfare, community health & safety) impacts that are generally site-specific, largely reversible, and readily addressed through mitigation measures when implemented on time.
- The activities during construction and O&M phase are not expected to directly impact indigenous peoples, critical habitat, and cultural heritage, or result in involuntary resettlement.
- The activities under the project undertaken by the Company are not expected to result in any irreversible or unprecedented impacts.
- The company has all the required polices in place (documented E&S policy, prohibition on engagement of child labour, forced labour, Code of conduct, Whistle Blower Policy, etc.)
- The company has a nominated person in charge of EHS issues at Head Office. At the project site, the company has a nominated person for EHS issues.
- The company is in the process of obtaining required licenses/permissions/certificates. However, these needs to be taken up on an urgent basis and completed as recommended in the ESAP.

Annexure 1 – State-wise list of Fifth schedule Areas

State	Fully covered	Partially covered
Andhra Pradesh		East Godavari, West Godavari, Vishakhapatnam, Srikakulam, Vizianagaram
Chhattisgarh	Surgujia, Korea, Bastar, Dantewada, Korba, Jashpur, Kanker, Balrampur, Surajpur, Narayanpur, Bijapur, Sukma, Kondagaon	Balod, Dhamtari, Raigarh, Rajnandgaon, Gariaband, Bilaspur
Gujarat	Dang, Dahod, Narmada, Tapi	Surat, Bharuch, Valsad, Vadodara, Panchmahal, Sabarkantha, Navsari
Himachal Pradesh	Lahaul & Spiti, Kinnaur	Chamba
Jharkhand	Ranchi, Khunti, Lohardagga, Gumla, Simdega, Latehar, West Singhbhum, East Singhbhum, Saraikela, Kharsawan Dumka, Jamtara, Sahebganj, Pakur	Palamu, Garhwa, Godda
Madhya Pradesh	Jhabua, Mandla, Dindori, Barwani, Alirajpur	Dhar Khargone (West Nimar) Khandwa (East Nimar) Ratlam, Betul, Seoni, Balaghat Hoshangbad, Shahdol, Umaria, Sheopur, Chindwara, Sidhi, Anooppur, Burhanpur
Maharashtra		Thane, Pune, Nashik, Dhule, Nadurbar, Jalgaon, Ahmednagar, Nanded, Amravati, Yavatmal, Gadchiroli, Chandrapur
Orissa	Malkangiri, Nowarangpur, Rayagada, Mayurbhanj, Sundargarh, Koraput	Sambalpur, Keonjhar, Khandhamal, Kalahandi, Balasore, Gajapati, Ganjam
Rajasthan	Banswara, Dungarpur	Udaipur, Sirohi, Chittorgarh
Telangana		Adilabad, Khammam, Mahbubnagar Warangal

Annexure-2



REV. NO	DATE	DESCRIPTION	PPD. BY	MECH.	CIVIL	ELEC.	C & I	CKD. BY	APPD. BY	PPD. BY	MECH.	CIVIL	ELEC.	C & I	CKD. BY	APPD. BY
			DETAIL ENGG. CONSULTANT							THERMAX						

CLIENT :
M/s. EVERENVIRO RESOURCE MANAGEMENT PVT LTD
DHURI, PUNJAB

TECHNOLOGY PARTNER:
M/s. PRIMOVE ENGINEERING PVT, LTD.,
PUNE

PROJECT :
100 TPD RICE STRAW BASED CBG PLANT

TITLE :
PROCESS FLOW DIAGRAM FOR CBG PLANT
–

THERMAX LIMITED
POWER DIVISION
SAI CHAMBERS
WAKDEWADI, PUNE, INDIA

THERMAX

DRAWN	SJ		02.12.2021
DESIGNED	KA		02.12.2021
CHECKED	KA		03.12.2021
APPROVED	HS		03.12.2021

DEC :

GROUP: MECH | OC No. DDC178 | SCALE: –

DWG.NO. PP 178 M 101 4 | REV. 0

FORMAT NO:– CGN–E–F–15 REV 1

ANNEXURE-3

LEGEND-

TYPE	SYMBOL	LVL
PAVER BLOCK ROAD WITH WMM & GSB		AS/ DRG
ROAD WITHOUT RCC BUT WITH WMM & GSB		AS/ DRG
EARTH FILLING		AS/ DRG
GREEN AREA		AS/ DRG
PARKING AREA		AS/ DRG
RWHT	RWHT	AS/ DRG
CONCRETE FLOOR		AS/ DRG
EARTHFILLING +GSB		AS/ DRG

PURPOSE OF DRAWING

ADVANCE COPY — FOR APPROVAL — GFC

PROJECT :
PROPOSED EVERENVIRO RESOURCE MANAGEMENT PVT LTD AT DHURI, PUNJAB

NO.	DATE	REVISION	APPD
10.	12-11-2022	REVISED LOCATION OF RAW WATER TANK, WORKSHOP & CANTEEN, CHEQUERED PLATE DETAIL	
9.	20-09-2022	REVISED FINAL LAYOUT PLAN	
8.	06-09-2022	REVISED FINAL LAYOUT PLAN	
7.	26-08-2022	REVISED FINAL LAYOUT PLAN	
6.	08-08-2022	DETAILS REVISED AS PER DISCUSSION	
5.	01-08-2022	DETAILS REVISED AS PER DISCUSSION	
4.	22-07-2022	DETAILS REVISED AS PER DISCUSSION 20Juky22	
3.	18-07-2022	RCC & NON RCC ROAD MARKED, EFFLUENT DRAIN INTRODUCED & GROOVE & CONSTRUCTION JOINT GIVEN	
2.	13-07-2022	PEB SHED SIZE CHANGED & LOCATION REVISED	
1.	01-07-2022	LAYOUT REVISED AS PER SURVEY	

BUILDING :

STRUCTURAL CONSULTANTS :

WASCON CONSULTANTS
SANA PALACE, 8, SHAHNAJAF ROAD
HAZRATGANJ, LUCKNOW
MOB ,09838007256, (0522) - 4064889

DESIGNER
Capt Manoj Wasan (Retd)
BE{IIT ROORKEE},M TECH{IIT KANPUR}
MBA{SYBIOSIS PUNE}

DRG TITLE
LAYOUT DRAWING OF PLANT

DRAWN — Ruchika Gupta

CHKD
Capt Manoj Wasan (Retd)
BE{IIT ROORKEE},M TECH{IIT KANPUR}
MBA{SYBIOSIS PUNE}

DATE	SCALE	DRG NO.	REV
14/04/2023	N.T.S.	56/60	10