



REPORT

Genser Energy Ghana Limited, Liquefaction and Gas Conditioning Plant Project

Final Draft Scoping Report and Terms of Reference

Submitted to:

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Executive Summary

Genser Energy Ghana Limited (GEGL) own and operate Power Plants often using natural gas for the power generation. In a bid to significantly minimize the operational challenges experienced by GEGL given the presence of liquids in the natural gas utilized for power generation, GEGL is constructing a Liquefaction and Gas Conditioning Plant (Prestea GCP) and associated infrastructure at Prestea for the extraction of Natural Gas Liquids (NGLs), specifically ethane, propane, butane, Iso-pentane and condensates. The initial capacity of the Prestea GCP will be 135 mmscfd and expanded to 200 mmscfd. The Prestea GCP will also facilitate the compression/liquefaction of natural gas and sale of LNG to GEGL's power generation facilities in the West African region.

The Prestea GCP main components are gas pre-treatment station, cryogenic separation station, fractioning and separation station, gas compression station, and NGL storage and loading terminal.

GEGL has acquired land in the Prestea area for the development and will comply with all applicable Ghanaian legislation relating to energy development and operation, particularly the Environmental Assessment Regulations, 1999 (LI 1652). GEGL registered the project with the Environmental Protection Agency (EPA) and has prepared this Scoping Report to generate the relevant Terms of Reference (ToR) to guide the Environmental Impact Assessment (EIA) study of the project. This Scoping Report introduces the project and discusses key issues, concerns, and includes inputs and guidance solicited from the project stakeholders on ToR for the Environmental Impact Statement (EIS).

Baseline data have been collected for the key environmental and social resources, including biodiversity, air quality socio-economic and surface water. Data collected will be analysed and will guide the impact assessment presented in the EIS. Stakeholder engagements have also been completed by GEGL, the stakeholders engaged entailed government agencies, Non-Governmental Organizations and community authorities and members in the project area.

The stakeholder engagement process was aligned with the objectives of the stakeholder consultation process as set out in LI 1652. Issues and concerns raised by the various stakeholders were documented for reference and action and will be incorporated into the EIS.

The key impacts identified include potential loss of flora and fauna of ecological importance, dust and gaseous emissions, risks to public safety and traffic related impacts. The EIS will present detailed assessments of the potential project impacts and propose measures to mitigate negative impacts and enhance project benefits.

Abbreviations and SI Units

ABBREVIATIONS

EHS	Environmental health and safety
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
EPC	Engineering, Procurement, and Construction
EPFI	Equator Principles Financial Institution
ESMP	Environmental and Social Monitoring Plan
ESMS	Environmental and Social Management System
ESSSs	Environmental and Social Safeguards Standards
GEGL	Genser Energy Ghana Limited
GHG	Green House Gas
GWCL	Ghana Water Company Limited
IFC	International Finance Corporation
PS	Performance Standards

SI Units

°	Degrees
Bcf	billion cubic feet
cm	centimetres
ha	Hectares
km	kilometre
mm	Millimetres
mm ²	Square millimetre
m	Metres
m ³	Cubic metre

Table of Contents

1.0	INTRODUCTION	1
1.1	Project Background and Justification.....	2
1.1.1	Project Background.....	2
1.1.2	Project Justification	2
1.2	Objectives of Scoping Report	3
1.3	Study Methodology	4
1.3.1	Site Visit	5
1.3.2	Literature / Desktop Review.....	5
1.3.3	Stakeholder Engagement	5
1.3.3.1	Key Issues from the Stakeholder Engagement	5
1.4	Policy, Legal and Regulatory Framework	6
1.4.1	Constitution of the Republic of Ghana, 1992	6
1.4.2	National Policy Framework	6
1.4.2.1	Ghana National Energy Policy, 2010.....	6
1.4.2.2	National Environmental Policy, 2014.....	6
1.4.2.3	National Water Policy, 2007	7
1.4.2.4	Environmental Sanitation Policy, 2010	7
1.4.2.5	Ghana Forest and Wildlife Policy, 2012	7
1.4.2.6	National Wetlands Conservation Strategy, 1999.....	7
1.4.2.7	Ghana Climate Change Policy, 2013	7
1.4.3	Legal and Regulatory Framework.....	7
1.4.3.1	Environmental Protection Agency Act, 1994 (Act 490)	7
1.4.3.2	Energy Commission Act, 1997 (Act 541).....	7
1.4.3.3	Ghana Highway Authority Act, 1997 (Act 540).....	8
1.4.3.4	Environmental Assessment Regulations, 1999 (LI 1652)	8
1.4.3.5	Electricity Regulations, 2008 (LI 1937).....	8
1.4.3.6	Fees and Charges (Amendment) Instrument, 2019 (LI 2386).....	8
1.4.3.7	Water Resources Commission Act, 1996 (Act 522)	8
1.4.3.8	Local Governance Act 2016 (Act 936).....	9
1.4.3.9	Lands Commission Act 2008, (Act 767)	9
1.4.3.10	Land Use and Spatial Planning Authority Act 2016, (Act 925)	9

1.4.3.11	Environmental Guidelines and Standards	9
1.4.4	International Environmental Treaties and Conventions	9
1.5	International Standards and Guidelines	10
1.5.1	IFC Performance Standards on Social and Environmental Sustainability	10
1.5.2	IFC Environmental Health and Safety Guidelines	11
1.6	Structure of the Report	12
2.0	PROJECT DESCRIPTION	13
2.1	Project Scale	13
2.2	Project Components	15
2.2.1	Ancillary Facilities	15
2.3	Project Design	17
2.3.1	Geology and Seismology	17
2.4	LNG and NGL Processing	18
2.5	Project Services	19
2.5.1	Accommodation Facilities	19
2.5.2	Offices	19
2.5.3	Workshop	19
2.5.4	Health Care	19
2.6	Water Needs	19
2.7	Waste Management	19
2.8	Scheduling and Activities	20
2.9	Staffing and Employment	21
2.10	Alternatives to Proposed Undertaking	22
2.10.1	Site Selection	22
2.10.2	No-Go Project Alternative	25
3.0	BASELINE INFORMATION	26
3.1	Physical Environment	26
3.1.1	Topography	26
3.1.2	Climate	26
3.1.3	Soil and Land Use	26
3.1.4	Air Quality	26

3.1.5	Noise	28
3.1.6	Surface Water	28
3.1.7	Groundwater	28
3.1.8	Visual Aspects	28
3.2	Biological Environment.....	28
3.3	Socio-Economic Environment.....	28
3.4	Traffic	29
4.0	ENVIRONMENTAL AND SOCIAL IMPACTS	31
4.1	Physical Environment.....	31
4.1.1	Soil and Land Use.....	31
4.1.2	Air Quality	31
4.1.3	Greenhouse Gas Emissions	31
4.1.4	Noise	31
4.1.5	Surface Water	31
4.1.6	Groundwater	32
4.1.7	Visual Aspects	32
4.2	Biological Environment.....	32
4.2.1	Terrestrial Ecology	32
4.2.2	Aquatic Ecology	32
4.3	Socio-Economic Environment.....	32
4.4	Traffic	33
5.0	KEY ENVIRONMENTAL AND SOCIAL IMPACTS	34
5.1	Physical Environment.....	34
5.1.1	Soil and Land Use.....	34
5.1.2	Air Quality	34
5.1.3	Noise	34
5.1.4	Water (Surface and Groundwater) Contamination	34
5.1.5	Visual Aspect	34
5.2	Biological Environment.....	35
5.2.1	Flora and Fauna.....	35
5.2.2	Aquatic	35

5.3	Socio-Economic Environment.....	35
5.4	Traffic	35
6.0	MITIGATION MEASURES	36
6.1	Physical Environment.....	36
6.1.1	Soil and Land Use.....	36
6.1.2	Air Quality	36
6.1.3	Noise	36
6.1.4	Water (Surface Water and Groundwater).....	36
6.1.5	Visual Aspect	37
6.2	Biological Environment.....	37
6.2.1	Flora and Fauna.....	37
6.2.2	Aquatic	37
6.3	Socio-Economic Environment.....	37
6.4	Traffic	38
7.0	TERMS OF REFERENCE FOR THE EIA.....	39
7.1	Physical Environment.....	39
7.1.1	Soil and Land Use.....	39
7.1.2	Air Quality	40
7.1.3	Climate Change and Greenhouse Gas Emissions	41
7.1.3.1	Climate Change	41
	Greenhouse Gas Assessment	41
7.1.4	Noise	42
7.1.5	Surface Water	42
7.1.6	Groundwater	42
7.1.7	Visual	42
7.2	Biological Environment.....	43
7.3	Socio-Economic Environment.....	43
7.3.1	Key Stakeholder Issues	43
7.4	Structure of EIA Report.....	44
8.0	CONCLUSION.....	45

TABLES

Table 1: Some uses of Natural Gas Liquid.....	3
Table 2: GPS coordinates of stations proximal to the Prestea GCP	13
Table 3: Feed and Product Gases Specifications	17
Table 4: EIS Structure	44

FIGURES

Figure 1: Layout of the EIA Process (EPA, 2015)	4
Figure 2: Site for Prestea GCP Project.....	14
Figure 3: Project Layout (GEGE, 2021).....	16
Figure 4: Geological Map showing the Geology of the Prestea GCP site.....	18
Figure 5: Satellite image of site location options considered for the Prestea GCP	24
Figure 6: Project Site Topography	27
Figure 7: Major Road from Prestea GCP site to Takoradi Port.....	30

APPENDICES**APPENDIX A**

EPA letter requesting and EIA for the project

APPENDIX B

Prestea GCP Project Schedule

APPENDIX C

Stakeholder Engagement Comments and Responses Report

1.0 INTRODUCTION

Genser Energy Ghana Limited (GEGL) is a wholly owned Ghanaian Independent Power Producer incorporated under the Companies Code, 1963 (Act 179) in April 2007. Genser Energy Holdings Limited (GEHL), a Mauritius-incorporated company with two Ghanaians as ultimate beneficiaries, owns 100% of GEGL. GEGL specialises in providing custom-engineered turnkey energy solutions to industrial clients with high energy requirements including mining companies.

The company engages in engineering, procurement, and construction (EPC) as well as operations and maintenance of its power generation plants and sells electricity and/or steam to its clients. GEGL has developed seven distributed power generation projects since its inception in Ghana and intends to expand further. The distributed power generation projects are:

- GP Bogoso Plant – 36.0MW Single Cycle Plant fired by distillate on the mining concession of Golden Star Resources, Bogoso mine.
- GP Unilever Plant – 5.5MW Cogeneration of Heat and Power Plant fired by Liquefied petroleum gas (LPG) on the premises of Unilever Ghana Limited, Tema.
- GP Chirano Plant – 30.0MW Steam Turbine Plant fired by natural gas and natural gas liquids (NGLs) on the mining concession of Chirano Gold Mines Limited, Chirano mine.
- GP Tarkwa Plant – 66.0MW Single Cycle Plant fired by natural gas and NGLs on the mining concession of Gold Fields Ghana Limited, Tarkwa mine.
- GP Damang Plant – 25.0MW Single Cycle Plant fired by natural gas and NGLs on the mining concession of Abooso Goldfields Limited, Damang mine.
- GP Wassa Plant- 33.0MW Single Cycle Plant fired by natural gas and NGLs on the mining concession of Golden Star Resources, Wassa mine.
- GP Edikan Plant- 33.0MW Single Cycle Plant fired by natural gas and NGLs on the mining concession of Perseus Mining Ghana Limited, Edikan mine.

In a bid to significantly minimize the operational challenges experienced by GEGL given the presence of liquids in the natural gas utilized for power generation, GEGL is constructing a 200 million standard cubic feet per day (mmscfd) Liquefaction and Gas Conditioning Plant and associated infrastructure at Prestea for the extraction of NGLs, specifically ethane, propane, butane, Iso-pentane and condensates. The proposed Liquefaction and Gas Conditioning Plant and associated infrastructure at Prestea will be collectively known as “Prestea GCP” and will operate at 135 mmscfd upon inception and gradually increase to 200 mmscfd. The Prestea GCP will hence, also facilitate the compression/liquefaction of natural gas and sale of liquefied natural gas (LNG) to GEGL’s power generation facilities in the West African region.

As required by the Environmental Assessment Regulations 1999 (LI 1652), GEGL has duly registered the project with the Environmental Protection Agency (EPA). The EPA in a letter dated 16 April 2021 (APPENDIX A) requested that GEGL conduct an Environmental Impact Assessment (EIA) for the project and subsequently submit an Environmental Impact Statement. The EPA had also directed that a Scoping Report be prepared to generate the relevant Terms of Reference (ToR) to guide the Environmental Impact Assessment (EIA) study. This document is the Scoping Report and includes a Draft ToR for undertaking the EIA.

The Scoping Report introduces the Prestea GCP project and includes alternatives considered. It describes the applicable legislative framework, and the existing preliminary biophysical and social environment within the project area. It presents the key project impacts and issues raised by stakeholders. The document also

describes preliminary mitigation measures to be implemented to avoid, minimize, rectify, or reduce the impacts and presents the ToR in line with the provisions under Regulation 12 of LI 1652.

1.1 Project Background and Justification

1.1.1 Project Background

GEGL engages in the full value chain of energy generation and transmission including the EPC of power plants and natural gas pipeline infrastructure for power generation as well as Operation and Maintenance of its assets. GEGL's current operations reflect its firm commitment to increase electricity and natural gas access throughout Africa.

GEGL currently operates in Ghana and has identified a clear need for its services elsewhere in West Africa. GEGL sees opportunities to add value in Mali, Burkina Faso, and Cote d'Ivoire, and is in the process of establishing country level subsidiaries to develop projects in these countries.

GEGL therefore intends to build the Prestea GCP, with an ultimate operating capacity of 200 mmscfd to supply NGL (in the form of butane, propane, ethane) to developers within and outside Ghana for power generation and for mining or industrial customers for diesel/HFO substitution. Currently GEGL receives lean gas from Ghana National Petroleum Commission (GNPC)¹ at Prestea from either the Sankofa or Jubilee fields after pre-treatment at the Atuabo gas processing facility.

1.1.2 Project Justification

Ghana discovered its first Deepwater oil and gas in 2007. Presently, the most advanced reserves identified are: The Jubilee field, with associated gas reserves estimated at 490 billion cubic feet (Bcf); the TEN fields with associated gas reserves of 363 Bcf and the Sankofa field with non-associated gas reserves of 1,107 Bcf. Plans are underway to develop the Mahogany and Teak fields with estimated total reserves of 120 Bcf as part of the Greater Jubilee Full Field. Most of the natural gas from these fields were previously flared into the atmosphere for safety reasons. However, the natural gas will be put to beneficial use with the implementation of the project.

Globally, there is a recognition of the benefits of utilizing natural gas over other sources of energy. For a developing country like Ghana, which have discovered oil and gas in commercial quantities, there is an opportunity to utilise natural gas in powering industries. In addition to the advantage of reduced greenhouse emissions that natural gas has over other energy sources, there are cost saving opportunities from its use.

Natural gas often has entrained liquids (ethane, propane, butane, Iso-pentane and condensates), which must be separated to improve the efficacy of LNG. Furthermore, these liquids are of higher value as separate products. The NGLs if not removed from natural gas also have the potential to damage the gas turbine (STI Group, 2018). The removal of the entrained liquids reduces the concentration of higher hydrocarbons and water to prevent the formation of hydrocarbon liquids and hydrates in the natural gas pipeline (Khan and Islam, 2007).

It is important to note that there are many uses for NGLs. NGLs are used as inputs for petrochemical plants, they are burned to provide heat and blended into vehicle fuel (US Energy Information Administration, 2012). Table 1 presents some of the uses of the NGLs, which could be explored for further development in the country.

¹ GNPC is the national gas sector aggregator and has the responsibility of ensuring the availability of adequate gas supply for energy generation. GNPC controls the upstream gas, midstream infrastructures, and final gas delivery to downstream consumers.

Table 1: Some uses of Natural Gas Liquid

Natural Gas Liquid	Applications	End Use Products	Primary Sectors
Ethane	Ethylene for plastics production; petrochemical feedstock	Plastic bags, plastics, anti-freeze, detergent	Industrial
Propane	Residential and commercial heating, cooking fuel, petrochemical feedstock	Heat for cooking, small stoves and barbeques, LPG	Industrial, residential, commercial
Butane	Petrochemical feedstock, blending with propane or gasoline	Synthetic rubber for tires, LPG, lighter fuel	Industrial, transportation
Isobutane	Refinery feedstock, petrochemical feedstock	Alkylate for gasoline, aerosols, refrigerant	Industrial
Pentane	Natural gasoline, blowing agent for polystyrene foam	Gasoline, polystyrene, solvent	Transportation
Pentanes Plus*	Blending with vehicle fuel, exported for bitumen production in oil sands	Gasoline, ethanol blends, oil sands production	Transportation

*Pentane plus is also known as “natural gasoline”. They contain pentane and heavier hydrocarbons. US Energy Information Administration, 2012.

GEGL is proposing the development of the GCP to:

- Liquefy and fractionate natural gas to LNG and NGLs (mainly ethane, propane and butane) to:
 - Diversify and increase their stream of income.
 - Export ethane and propane to other West African countries by road trucking to the Takoradi Port to be offloaded into fuel vessels through the Amandi oil jetty at the Takoradi Port.
 - Locally supply LNG, butane and ethane by road trucking.
- The Prestea GCP will also serve as a backup fuel source for GEGL’s power plants should there be a natural gas disruption. It should be noted the natural gas used in these plants will be free of these NGLs, which will provide additional benefits including:
 - Increase the life and overall efficiency and performance of the gas turbine.
 - Meet equipment warranty requirements.
 - Minimise maintenance costs and unscheduled downtime.
- Meet the Government of Ghana’s vision of increasing cleaner, affordable and sustainable energy options within the energy mix and to meet the increasing demand for energy in the country.
- Enhance creation of jobs directly from the project and indirectly as a result of industrial development and economic opportunities.

1.2 Objectives of Scoping Report

In line with Regulation 11 of LI 1652, the Scoping Report has the following objectives:

- To set out the scope or extent of the EIA to be undertaken by GEGL.

- To develop a draft ToR for the EIA study, which shall set out the essential issues² to be addressed in the EIA.

The Scoping process also solicits input and guidance of all the relevant stakeholders on the TOR.

1.3 Study Methodology

The scoping study was conducted using the following approaches:

- Site visit
- Review of existing data on the project
- Stakeholder engagement to help identify key issues and concerns to inform the impact assessment

The scoping study forms part of the EIA process as illustrated in Figure 1.

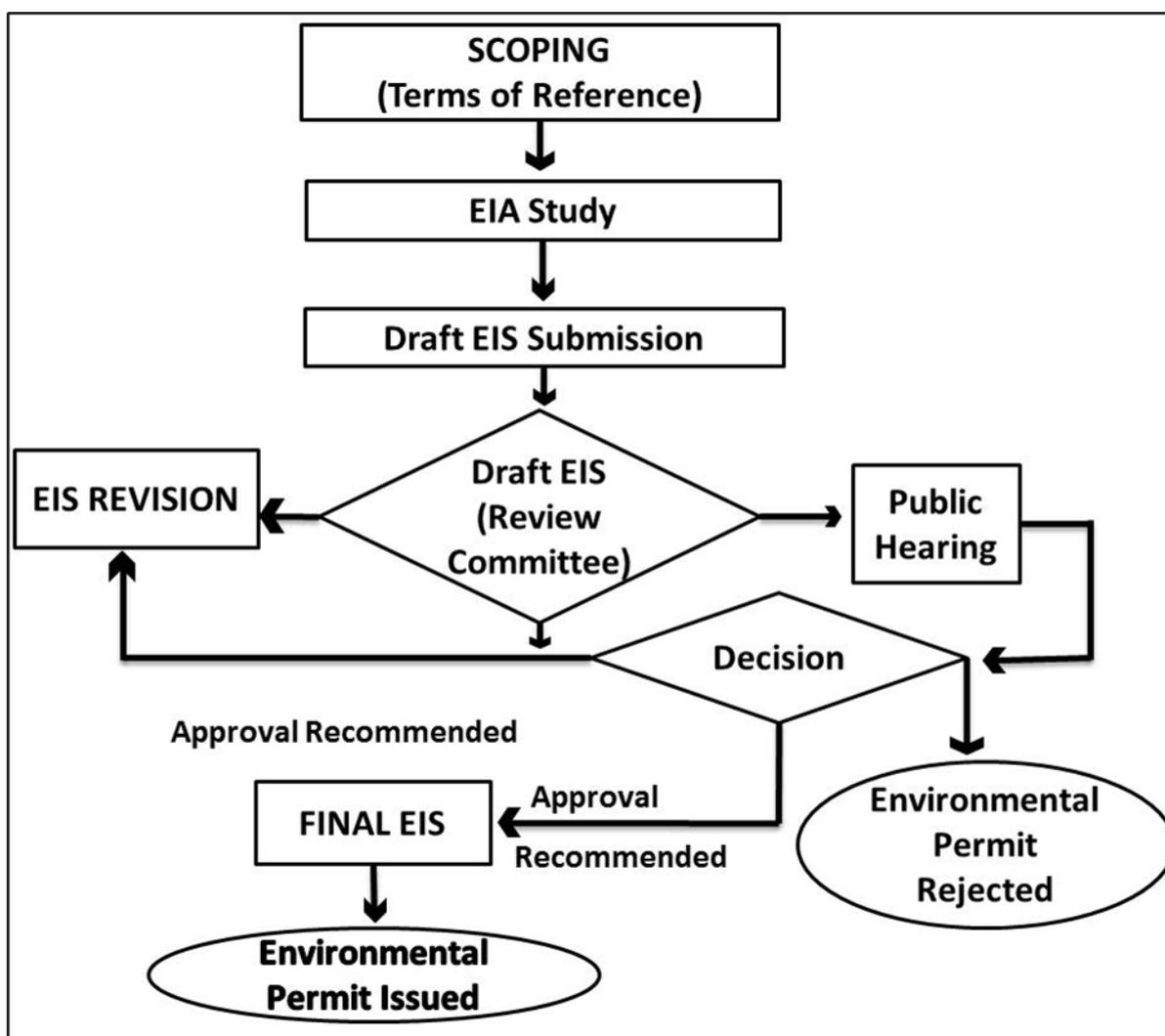


Figure 1: Layout of the EIA Process (EPA, 2015)

² The essential issues will include key issues and concerns raised by stakeholders and key environmental and social impacts identified.

1.3.1 Site Visit

The project team visited the Prestea GCP site to familiarize themselves with the site conditions and assess the social and environmental condition of the project. The visit was also to undertake a high-level assessment of the potential impacts of the project to inform the scope of the project ahead of the detailed specialist studies.

1.3.2 Literature / Desktop Review

Existing data and information relating to the project area including the project information on the biophysical and social environments, and other public materials and reports were reviewed. The goal of the desktop study was to obtain a fair and accurate understanding of the project.

1.3.3 Stakeholder Engagement

Detailed stakeholder engagement was undertaken as part of the EIA process. A stakeholder engagement plan (SEP) was prepared as part of the stakeholder engagement process. The SEP provided the framework for project-related stakeholder engagement and the disclosure of related information to the broader project stakeholders.

A background information document (BID) also forms part of the EIA process. The BID was distributed to stakeholders ahead of the stakeholder engagement. The BID provided background information on the project to stakeholders, invited stakeholder to participate in the EIA process and encouraged them to provide their comments and concerns on the project.

The stakeholder engagement included identification of stakeholders and consultations with traditional leadership, local leaders, community residents and governmental agencies at the local, district and regional levels. The stakeholder engagements, led by GEGL, was conducted from 17 October 2021 to 30 November 2021.

- All the engagements were in the form of community gatherings, face-to-face meetings and focus group discussions.
- The meetings were conducted in Twi, in small groups and were documented (photos, completion of attendance registers and note-taking).
- The meetings were held at venues easily accessible to stakeholders.
- Comments and issues raised were captured in a comment and response report (CRR)

The engagements were conducted using diverse approaches including discussing distributed printout materials and maps on the project, PowerPoint presentations especially during engagement with the District Assemblies and general interactions. After every presentation, stakeholders were given the opportunity to comment, provide suggestions and raise any concerns regarding the project. Appropriate responses were then provided by the Team. All comments, suggestions, concerns, and issues raised were documented and will be compiled into a Comment and Response Report, which will be included in the EIS.

1.3.3.1 Key Issues from the Stakeholder Engagement

The key issues and concerns raised during the various stakeholder engagement are presented as follows:

- **Employment and training:** Stakeholders including PAPs wanted to know the available employment opportunities associated with the project and whether training would be provided to the PAPs to enable them to qualify for employment.

- **Compensation:** The stakeholders from the municipal assembly urged GEGL to pay all compensations through their residence representatives promptly. PAPs also inquired about the crop rates which would be used and whether affected buildings would be compensated.
- **The benefit of the liquefaction facility to the community:** Stakeholders from Brumase and PAPs wanted to know the project's benefits to their community.
- **Public education:** The Prestea Fire Commander suggested that GEGL to increase its public education on natural gas and pipeline safety to allay any fears or concerns that people may have.

Issues that were frequently raised were related to compensation, employment and training. Stakeholders, however, did not object to the project.

The details of the stakeholder engagement including the communities and government agencies engaged, and dates for the various engagements will be provided in the EIS. The Comments and Response Report of the stakeholder engagement is attached in APPENDIX C.

1.4 Policy, Legal and Regulatory Framework

Ghana has well-established laws, policies guidelines and regulations to promote and regulate the energy sector and the environmental landscape. Relevant laws applicable to the project are summarized in the following sub-sections.

1.4.1 Constitution of the Republic of Ghana, 1992

Chapter 21, Article 257 (section 1) of the Constitution states that: "all public lands in Ghana shall be vested in the President on behalf of, and in trust for, the people of Ghana". Chapter 6, Article 36, Clause 9, requires the State to take appropriate measures to protect and safeguard and seek the co-operation of all stakeholders to protect the environment.

GEGL understands that land is vested in the President of the Republic of Ghana. Thus, GEGL will put in measures to mitigate the environment impacts and ensure that all requisite permits from various government agencies are obtained before project implementation.

1.4.2 National Policy Framework

1.4.2.1 Ghana National Energy Policy, 2010

The National Energy Policy (2010) is the underlying policy guiding governmental actions and strategies in the energy sector. Generally, the policy is targeted at ensuring that Ghana become a major exporter of power in the West African sub-region. This is intended to be achieved through capacity addition, modernization of transmission and distribution infrastructure. The policy also focuses on institutional and regulatory reforms intended to create competitive electricity markets. Ghana's Energy Policy is premised on the need to increase installed generation capacity to more than 5,000MW and to achieve universal access. The project aims at providing clean energy and thereby contributing to electrical power increase in the country and to diversify the energy mix in power generation.

1.4.2.2 National Environmental Policy, 2014

The reviewed National Environmental Policy (2014) was first formulated in 1995 to improve the surroundings, living conditions and quality of life of present and future generations. The policy seeks to promote sustainable development by ensuring a balance between economic development and natural resource conservation. It requires the implementation of strategies and programmes for the sustainable management of Ghana's resources. The project will be aligned with the supporting principles of the policy for the realisation of sustainable outcomes.

1.4.2.3 National Water Policy, 2007

The National Water Policy (2007) provides the framework for the sustainable development of water resources in Ghana. The overall goal of the policy is to “achieve sustainable development, management and use of Ghana’s water resources to improve health and livelihoods, reduce vulnerability while assuring good governance for present and future generations.”

GEGL understands the importance of water and although, will ensure that the necessary permits are obtained from Water Resources Commission, should there be a need for water abstraction for the project.

1.4.2.4 Environmental Sanitation Policy, 2010

The overarching goal of the Environmental Sanitation Policy (2010) is to develop a clear and nationally accepted vision of environmental sanitation as an essential social service and a significant determinant for improving the health of its citizens and quality of life in Ghana. This policy will guide GEGL in the development of waste management strategies for project implementation.

1.4.2.5 Ghana Forest and Wildlife Policy, 2012

The Ghana Forest and Wildlife Policy (2012) aims to promote conservation and the sustainable development of forest and wildlife resources. The policy calls for the maintenance of environmental stability and continuous flow of optimum benefits from the socio-cultural and economic goods and services that the forest environment provides to present and future generations. It also helps Ghana to fulfil its commitments under international agreements and conventions. GEGL will adhere to the dictates of the policy during development.

1.4.2.6 National Wetlands Conservation Strategy, 1999

The purpose of this strategy is to protect and drive the sustainable use of wetland resources which occupies approximately 10% of the country’s total land surface. Ghana is a signatory to the Ramsar Convention, which seeks to protect all wetlands. GEGL will comply with the dictates of the strategy for the realisation of its intended outcomes.

1.4.2.7 Ghana Climate Change Policy, 2013

The National Climate Change Policy provides strategic direction and coordinates issues of climate change in Ghana. The three objectives of the Policy are effective adaptation, social development and mitigation.

To address the adaptation issues in Ghana, five areas have been identified, namely, (1) energy, industrial and infrastructure development, (2) natural resources management, (3) agriculture and food security and (4) disaster preparedness and response and (5) equitable social development. In the effort of aligning with its energy strategy, one of the government’s aims includes the development of a local market for the industrial use of natural gas by 2015. This project will further strengthen the development of the local market as heavily industrialized activities such as the mining industries will rely on the use of natural gas for their operations.

1.4.3 Legal and Regulatory Framework

1.4.3.1 Environmental Protection Agency Act, 1994 (Act 490)

The Environmental Protection Act, 1994 (Act 490) was enacted for the amendment and consolidation of laws relating to environmental protection, pesticides control and regulation, and for other related purposes. Section 12 (1) of the Act mandates the Agency to request an EIA report from any person responsible for an undertaking which, in the opinion of the Agency, has or is likely to affect the environment. Sections 28(1) and (2) of the Act mandate the development of regulations and guidelines for project implementation.

1.4.3.2 Energy Commission Act, 1997 (Act 541)

The Energy Commission Act, 1997 (Act 541) requires the establishment of the Energy Commissions. The Act confers functions relating to the regulation, management, development and utilisation of energy resources in

Ghana. The Energy Commission is the technical regulator of Ghana's electricity, natural gas and renewable energy industries, and the advisor to Government on energy matters. All requirements of the Act will be adhered to.

1.4.3.3 Ghana Highway Authority Act, 1997 (Act 540)

The project will eventually include the transportation of the NGLs to the Takoradi port to be shipped to other countries within the sub-region. This will require a traffic impact assessment and as well as road condition assessment to determine the need for improvements. This will be discussed with the Ghana Highway Authority in line with the requirements of the Ghana Highway Authority Act, 1997 (Act 540), and GEGL will obtain all the necessary permits before project implementation.

1.4.3.4 Environmental Assessment Regulations, 1999 (LI 1652)

The Environmental Assessment Regulations, 1999 (LI 1652), set out the requirements for environmental permitting/certification including requirements for environmental assessment and Environmental Management Plans (EMPs). Schedule 1 of Regulation 1 of LI 1652 lists all activities that require an EIA. Under Schedule 2 of Regulation 3, the construction of oil and gas separation, processing, handling, and storage facilities are classified as undertakings for which an EIA is mandatory.

1.4.3.5 Electricity Regulations, 2008 (LI 1937)

The Electricity Regulations 2008 (LI 1937) provides for the planning, expansion, safety criteria, reliability, and cost effectiveness of the national interconnected transmission system. The LI provides for the regulation of a wholesale electricity market; market operations of the electricity transmission utility; the technical operations of the electricity transmission utility; minimum standards and procedures for the construction and maintenance of facilities and installations; the protection of the mains and electrical installations and services and the protection of life and property and the general safety of the public in respect of electricity services. Other issues include minimum reserve margins to satisfy demand and the development and implementation of programmes for the conservation of electricity. The dictates of these Regulations will be adhered to throughout the project implementation.

1.4.3.6 Fees and Charges (Amendment) Instrument, 2019 (LI 2386)

The Fees and Charges (Amendment) Instrument 2019 (LI 2386) provides comprehensive rates, fees and charges collectable by Ministries, Departments and Agencies, such as the EPA, for goods and services delivered to the public. The Instrument stipulates the fees and charges to be paid by Companies.

The Ghana Immigration Service, through this instrument, has introduced a residence permit fee to ECOWAS nationals and Ghanaians holding foreign passports. Other nationals entering the country for work will also be required to apply for residence permit and pay the accompanying fees. GEGL will comply with the directives including residence permit fees and all charges pertaining to expatriates hired for the project.

1.4.3.7 Water Resources Commission Act, 1996 (Act 522)

WRC is empowered by Act 522 to grant water rights. Section 13 prohibits the diversion, damming, and storing of water resources except when in accordance with the provisions of the Act. The Act provides that any person may apply to the Commission in writing for the granting of a water right, which then permits the proponent to dam, store, divert or use water. On receipt of the application, the Commission investigates as it considers necessary, including consultations with the inhabitants of the area of the water resources concerned. Section 24 also provides that: "... except in accordance with the provisions of Act 522, or with the approval of the EPA, a person who interferes with, or alters the flow of water resources beyond such levels as the EPA may prescribe, commits an offence". GEGL will abide by the requirements of Act 522 in developing the Prestea GCP project.

1.4.3.8 Local Governance Act 2016 (Act 936)

This Act replaces the Local Government Act 1993, (Act 462) and provides for local governance and National Development Planning System for the Districts. The Act also defines and regulates planning procedures of District Assemblies. The Assembly is mandated to initiate programmes for the development of basic infrastructure and provide municipal works and services as well as be responsible for the development, improvement and management of human settlements and the environment in the district.

Section 91 (1) states that no physical development shall be carried in a district without prior approval in the form of a written permit granted by the District Planning Authority. GEGL will consult applicable authorities and obtain all needed permits before project implementation.

1.4.3.9 Lands Commission Act 2008, (Act 767)

This is an Act to establish the Lands Commission to integrate, subject to the Constitution, the operations of public service land institutions under the Commission in order to secure effective and efficient land administration and to provide for related matters.

The Act empowers the Land Commission to, on behalf of the Government, manage public lands and any other lands vested in the President by the Constitution or by any other law and any lands vested in the Commission. For this project, the land belongs to private owners who have been duly identified, engaged and compensation process initiated.

1.4.3.10 Land Use and Spatial Planning Authority Act 2016, (Act 925)

The Land Use and Spatial Planning Act aims to provide for sustainable development of land and human settlements through a decentralised planning system. It establishes processes to regulate national, regional, district and local spatial planning, and generally to provide for spatial aspects of socio-economic development.

The Act includes sections on structure plans (sections 61-70), local plans (sections 71-82), zoning schemes (sections 83-103) and permits (113-125). GEGL will engage applicable authorities and obtain all needed approvals before project implementation.

1.4.3.11 Environmental Guidelines and Standards

Several environmental guidelines have been developed in Ghana to support environmentally sound design and management during project implementation. Some of the guidelines relevant to an EIA include:

- Environmental Assessment in Ghana, A Guide (1996) and Environmental Impact Assessment Procedures (1995) are EPA guidance documents which outline procedures to be adhered to when undertaking an EIA.
- Standard for Health Protection - Requirements for Ambient Noise Control (GS 1222:2019).
- Standard for Water Quality – Specification for Drinking Water (GS 175:2017).
- Standard for Environment and Health Protection – Requirements for Ambient Quality and Point Sources/Stack Emissions (GS 1236:2019).
- Standard for Effluent Discharge (GS 1212: 2019) provide guidance on maximum permissible effluent discharge.
- Standard for Motor Vehicle Emissions (GS 1219: 2018) specifies the requirements for exhaust emissions of motor vehicles, tractors, construction machines.

1.4.4 International Environmental Treaties and Conventions

The Government of Ghana is a party to several international treaties relating to the environment, notably:

- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) – a treaty which prevents species from becoming endangered or extinct because of international trade.

- Convention on Biological Diversity– a treaty established by the United Nations aimed at preserving biological diversity around the world.
- Convention on the Conservation of Migratory Species of Wild Animals – (also known as the Bonn Convention) the main objective of this international agreement is the conservation and sustainable use of terrestrial, aquatic and avian migratory animals and their habitats.

1.5 International Standards and Guidelines

The International Finance Corporation (IFC) Performance Standards and Equator Principles are the benchmarks for good internal environmental practice for many organisations. They are often applied to evaluate EIAs and Environmental and Social Management System (ESMS) proposals when considering a project and provide a level of assurance for investing partners. The principles have been designed to allow project developers and their backers to understand the environmental and social implications of their project and assess whether good practice for managing potential impacts is in place or could be developed. These Principles are supplemented by additional industry focused Environmental health and safety (EHS) Standards for selected sectors.

There is a range of international organisations that have variants of these requirements. Many have been prepared in line with the IFC standards and the principal interests remain common among them. The principles set out expectations that the environmental and social issues pertinent to a project have been adequately studied and assessed, and that management and mitigation measures will meet appropriate levels and systems.

1.5.1 IFC Performance Standards on Social and Environmental Sustainability

Of the eight Performance Standards (PS) issued by IFC (Published January 1, 2012 (updated June 14, 2021)), six PSs (PS 1, PS2, PS3, PS4, PS6 and PS8) have been defined as applicable to the project and thus will be adhered.

Performance Standard 1³ establishes the importance of:

- Integrated assessment to identify the social and environmental impacts, risks, and opportunities for projects.
- Effective community engagement through the dissemination of project related information and consultation with local communities on matters that directly affect them.
- The management of social and environmental performance throughout the life of the project.

Performance Standard 2⁴ establishes the importance of:

- Employment creation and income generation being accompanied by protection of fundamental rights of workers.
- Constructive worker-management relationships, treating workers fairly and providing them with safe and healthy working conditions as this may enhance efficiency and productivity.
- The protection of workers, including vulnerable categories of workers such as children, migrant workers, workers engaged by third parties, and workers in the client's supply chain.

³ (International Finance Corporation, 2012b)

⁴ (International Finance Corporation, 2012c)

Performance Standard 3⁵ establishes the importance of:

- The avoidance or minimising adverse impacts on human health and the environment by avoiding or minimising pollution from project activities.
- Promoting sustainable use of resources, including water and energy.
- Reducing project related Green House Gas (GHG) emissions.

Performance Standard 4⁶ establishes the importance of:

- The anticipation and avoidance of adverse impacts on the health and safety of the affected community during the project life from both routine and non-routine circumstances.
- Ensuring that the safeguarding of personnel and property is carried out in accordance with relevant human rights principles and in a manner that avoids or minimises risks to the Affected Communities.

Performance Standard 5⁷ establishes the importance of:

- The avoidance of involuntary resettlement wherever possible and to minimise its impact on those displaced through mitigation measures such as fair compensation and improvements to living conditions.
- Actively engaging community throughout the land acquisition and involuntary resettlement process.

Performance Standard 6⁸ establishes the importance of:

- Biodiversity conservation and sustainable management of living natural resources.
- Protecting and conserving biodiversity, maintaining ecosystem services, and sustainably managing living natural resources are fundamental to sustainable development.
- How developer can sustainably manage and mitigate impacts on biodiversity and ecosystem services throughout the project's lifecycle.

Performance Standard 8⁹ establishes the importance of:

- Protecting cultural heritage during the project activities for current and future generations.
- Providing mitigation measures to address impacts to cultural heritage during the project life-cycle and applying the provisions of Convention Concerning the Protection of the World Cultural and Natural Heritage.

1.5.2 IFC Environmental Health and Safety Guidelines

These guidelines are technical reference documents with general and industry-specific examples of Good International Industry Practice as defined in IFC's Performance Standard 3 on Pollution Prevention and Abatement. The EHS Guidelines contain the performance levels and measures that are normally acceptable to IFC and are generally considered to be achievable in new and existing facilities at reasonable costs. The dictates of the guidelines will be adhered to during the EIA process.

⁵ (International Finance Corporation, 2012d)

⁶ (International Finance Corporation, 2012e)

⁷ (International Finance Corporation, 2012a)

⁸ (International Finance Corporation, 2012e)

⁹ (International Finance Corporation, 2012e)

1.6 Structure of the Report

The Report consists of the following chapters:

- Chapter 1 : Introduction
- Chapter 2 : Project Description
- Chapter 3 : Baseline Information
- Chapter 4: Environmental and Social Impacts
- Chapter 5: Key Environmental and Social Impacts
- Chapter 6: Mitigation Measures
- Chapter 7: Terms of Reference for the EIA
- Chapter 8: Conclusions
- References

2.0 PROJECT DESCRIPTION

The Prestea GCP project has a processing capacity of 200 mmscfd, commencing with 135 mmscfd, to process both lean and rich gas from Ghana's gas fields. The Essiama-Prestea Pipeline will supply the Prestea GCP with the rich gas at 135mmscfd. The pipeline from Essiama-Prestea Regulating and Metering Station has a rich gas composition. The project will also require the installation of a 20-inch 6.5km gas pipeline interconnecting the Prestea GCP to GEGL's Gas Receiving and Regulating Station (GRRS) in Prestea.

2.1 Project Scale

The project site is in Prestea, close to the Ankobra River in the Western Region of Ghana. The size of the area proposed for the project is approximately 100 Ha. The Prestea GCP is planned to have an operating commencing capacity of 135 mmscfd to extract NGLs sourced from Ghana Gas fields via GEGL's pipeline infrastructure in Ghana. The NGLs to be extracted from the Prestea GCP are ethane, propane and butane.

Part of the produce from processing will be exported, hence, the Prestea GCP will be linked to storage facility and export terminal at the Takoradi Port. It will include four cryogenic storage tanks each having a capacity of 10,000m³, truck unloading and loading arms pipelines.

Figure 2 provides an aerial view of the proposed site, and GPS coordinates are as shown in Table 2.

Table 2: GPS coordinates of stations proximal to the Prestea GCP

Name	GPS coordinates		Elevation
	Northings	Eastings	
GCP1	605331.363	598340.339	37.126
GCP2	605484.067	597902.524	32.202
GCP3	605339.168	597413.634	35.081
GCP4	604884.929	598306.700	28.562
GCP5	604267.423	597767.084	23.535
GCP6	604855.930	597270.816	28.886

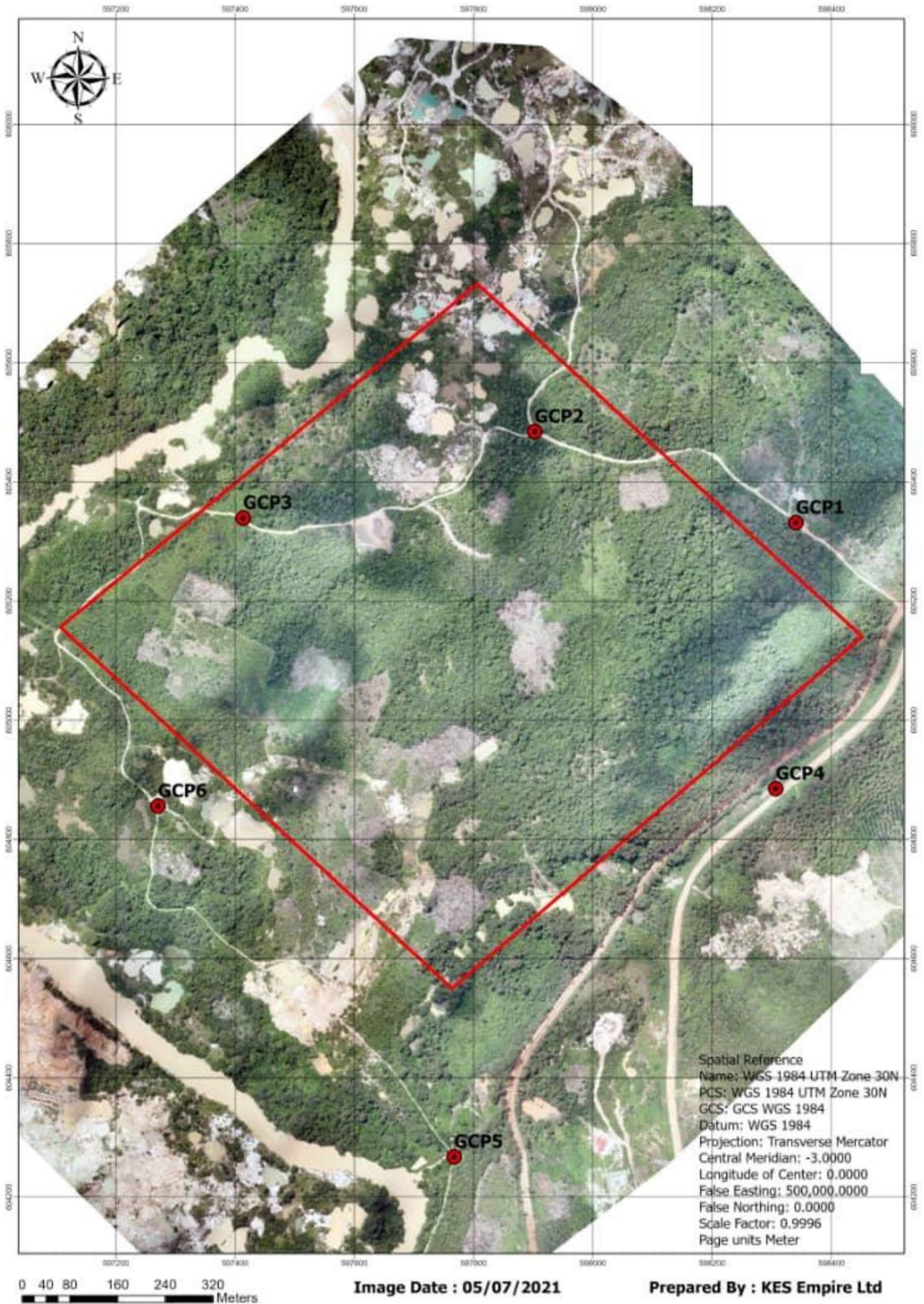


Figure 2: Site for Prestea GCP Project

2.2 Project Components

The Prestea GCP development will include the following major components:

- Gas pre-treatment station
- Cryogenic separation station
- Fractioning and separation station
- Gas compression station
- NGL storage and loading terminal
- Ancillary facilities

The project layout is as shown in **Error! Reference source not found.**

Gas pre-treatment station

The pre-treatment section of the plant plays a critical role in processing the gas to meet the required specification for onward processing. CO₂ and H₂O will be removed from the natural gas or associated gas at the pre-treatment station. Pre-cooling of the gas to -45°C also takes place in the station.

Cryogenic separation station

At this station, turbo-expansion and di-methanization will take place to separate the natural gas or associate gas into methane and NGLs. The cryogenic process will cool the gas stream to very low temperatures using refrigerants and a system of tanks and pipes to condense NGLs.

Fractioning and separation station

This station performs the fractionation processes of di-ethanization, di-propanization and di-butanization to separate the NGLs into ethane, propane, and butane respectively.

Gas compression station

This station compresses methane stream (lean natural gas) from ~25bar to ~85bar.

Storage and loading terminal

The Prestea Storage and Loading Terminal will consist of three 5000m³ storage tanks, boil-off gas recycling and truck loading to maintain efficient storage and transportation of NGLs. **Error! Reference source not found.** shows the conceptual layout of the Storage tank to be installed in Prestea.

2.2.1 Ancillary Facilities

Systems required for the safety, maintenance, monitoring and control of the Prestea GCP project include the following auxiliary equipment:

Interconnections: This will include gas pipelines, control, and instrumentation modules.

Utilities: This will include relief system, fire and gas system, fresh and raw water tanks, hot oil system, instrument air, nitrogen, drains and power generation facility to provide base load power of ~10MW.

A Fire Pump Station: This is to provide fire protection for all equipment on site.

A Control Room: For monitoring and control of all site facilities and instrumentation.

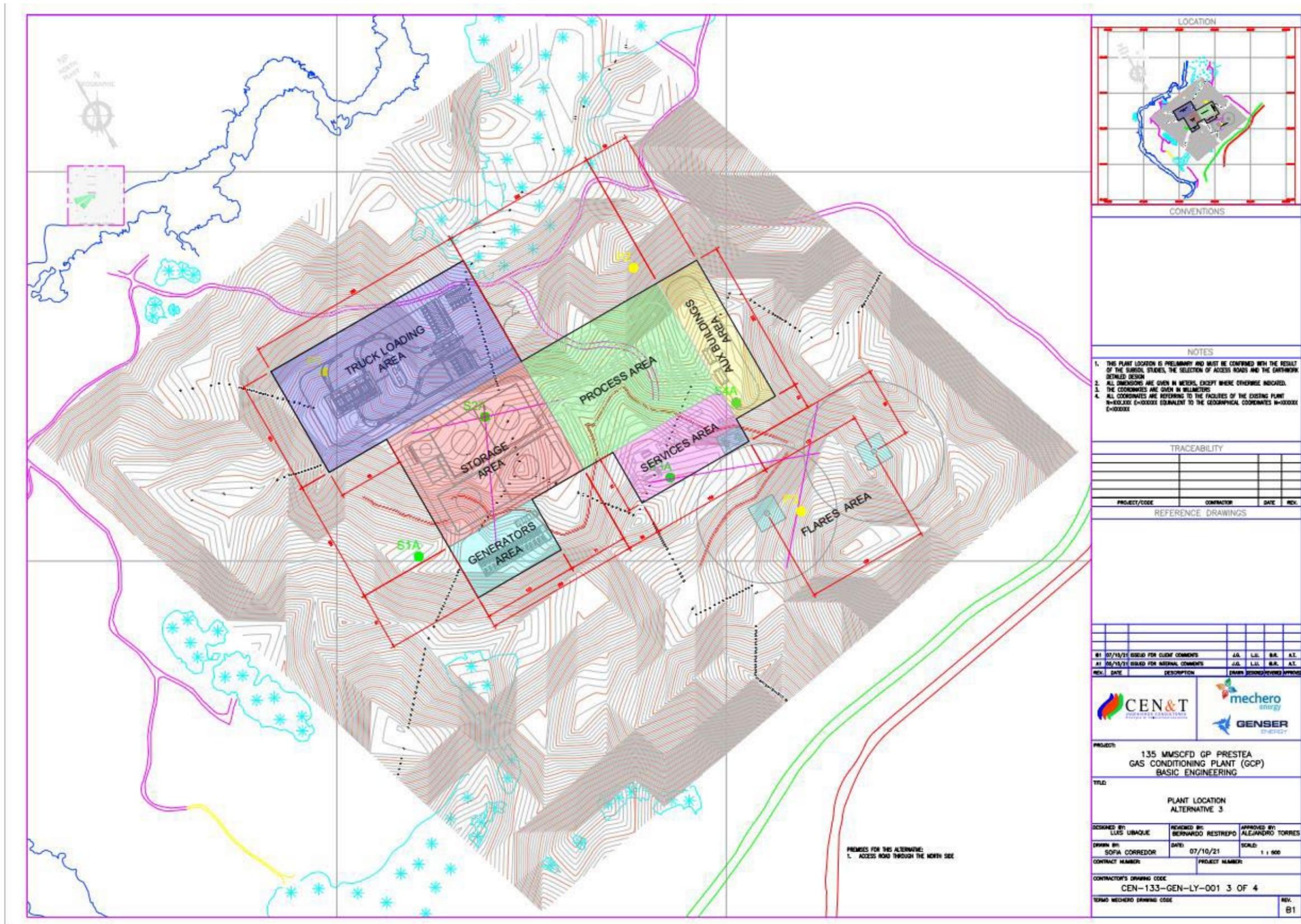


Figure 3: Project Layout (GEGL, 2021)

2.3 Project Design

The Prestea GCP will initially operate at 100-135mmscfd with Rich Gas (associated gas) and Lean Gas (pipeline natural gas). Table 3 illustrates the energy and mass balance of the plant.

Table 3: Feed and Product Gases Specifications

			Rich Gas	Lean Gas
Feed Gas		Molar flow (MMSCFD)	135	135
		HHV (BTU/scf)	1,206	1,111
		Energy (MMBTUD)	162,810	149,985
Sales Gas (Delivery @ 1,378 psig)		Mass flow (ton/day)	2,051	2,228
		Energy (MMBTUD)	111,599	118,353
NGLs	C2 (Ethane) -129°F	Mass flow (ton/day)	275.8	256.0
		Energy (MMBTUD)	13,488	12,512
	C3 (Propane) -45°F	Mass flow (ton/day)	450.6	221.0
		Energy (MMBTUD)	21,401	10,495
	iC4 – nC4 (Butanes) 20.4°F	Mass flow (ton/day)	243.0	94.1
		Energy (MMBTUD)	11,341	4,393
Plant self-consumptions		Gas flow for power generation (MMSCFD)	3.0	2.4
		Gas flow for sales compressor (MMSCFD)	1.6	1.7
		Gas flow for hot oil system (MMSCFD)	0.0	0.0
Shrinkage		Energy (MMBTUD)	51,211	31,632
		Products (MMBTUD)	46,229	27,400
		Auto-consume (MMBTUD)	4,628	4,135
		Losses (MMBTUD)	354	97

2.3.1 Geology and Seismology

According to the Seismology Division of the Ghana Geological Survey Authority (GGSA), the site for the Prestea GCP project has argillitic rocks (Figure 4) that give rise to clay soils. To avoid the effect of clayey soil expansion and contraction on the Prestea GCP, the GGSA recommended that the plant be sited at a higher elevation, as the soils on top of the elevation are often lateritic and have good bearing capacity. The GGSA recommended a peak ground acceleration value of 0.1g for the design and construction of the plant and all other ancillary structures.

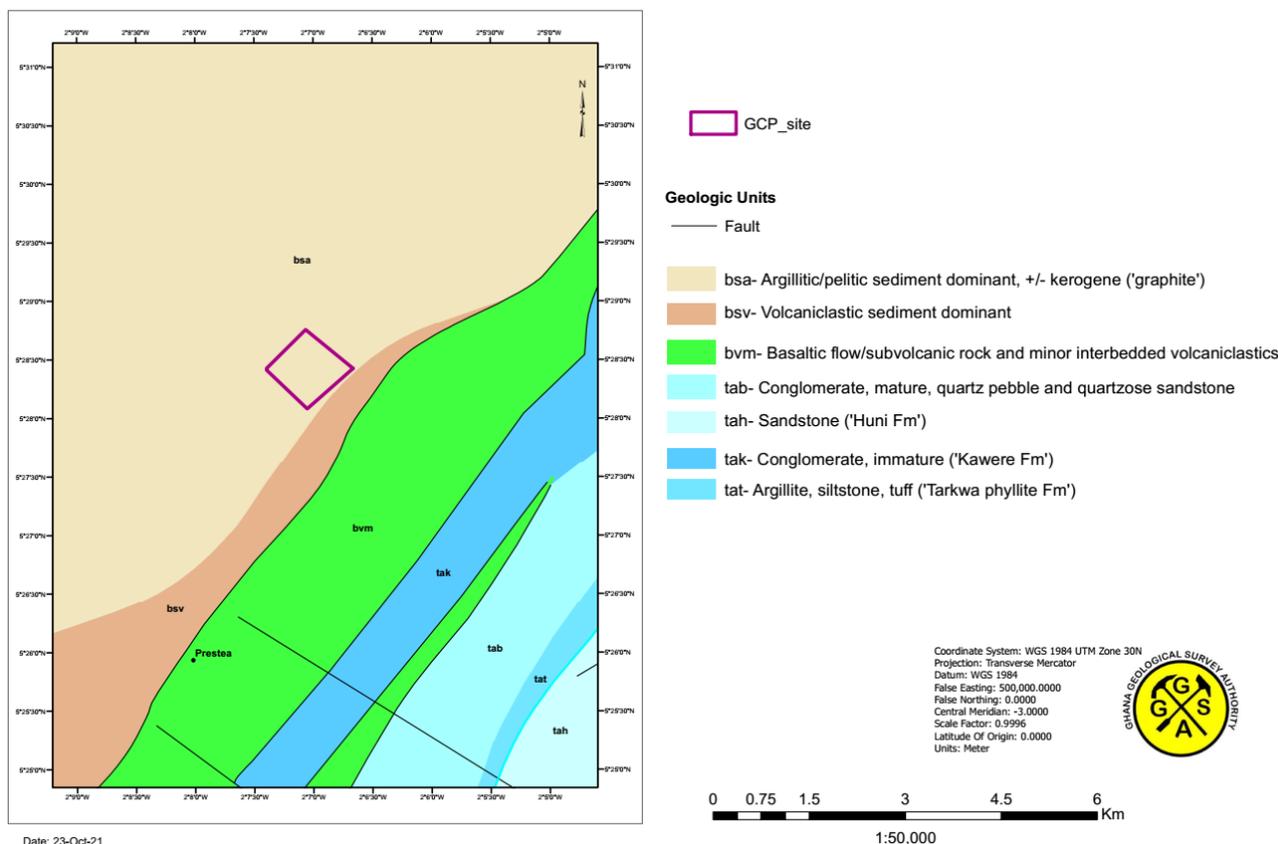


Figure 4: Geological Map showing the Geology of the Prestea GCP site

2.4 LNG and NGL Processing

There are several methods for cooling a natural gas stream to extremely low temperatures, but one of the most efficient is the turbo expander process which will be adopted for the Prestea GCP. In this process, external refrigerants are used to cool the natural gas stream, which is then followed by an expansion turbine, which rapidly expands the chilled gases. This causes the temperature of natural gas to drop significantly and quickly (to as low as -45°C). condensing ethane and other hydrocarbons, whilst methane continues to exist as a gas.

For the Prestea GCP, the feed gas will be passed through a pre-treatment unit before entering the liquefaction train to remove any traces of CO₂ and water that may be present. The pre-treatment process results in a cleaner and purer natural gas stream, as well as the hydrocarbons of NGLs. Following the removal of all contaminants, the stream is routed to the cryogenic separation station, where turbo expansion and di-methanization will separate the methane stream from the heavy hydrocarbon stream. The extracted methane gas will be used as feedstock for the production of LNG, which will be compressed and routed back to GEGL's pipeline. While the extracted heavy hydrocarbons will be used to produce NGLs (ethane, propane and butane). The resulting LNG liquid stream will be cooled to -160°C. At this temperature, LNG will then be transported into onsite LNG storage tanks via cryogenic pipelines.

After the heavy hydrocarbons have been removed from the natural gas stream, they will be separated into their individual products for use in a fractionating separation station. The different boiling points of the different hydrocarbons in the hydrocarbon stream will be used to determine fractionation. The fractionation process will begin with the removal of the lighter NGLs from the stream and proceed in the following order before being routed into the cryogenic storage tanks:

- De-ethanizer - ethane removal

- De-propanizer – propane removal
- De-butanizer – butanes (normal and iso) removal

From the onsite storage tanks, the LNG/NGLs will then be loaded onto 20MT Bulk Road Vehicles to be safely hauled to the Takoradi.

2.5 Project Services

A summary of other infrastructure and services to support the Prestea GCP project is presented in the following sections. Their detailed information including specific land take/space allocation and layout will be provided in the EIS.

2.5.1 Accommodation Facilities

GEGL workers and contractors will be accommodate in camp containers that will be mounted as part of the project. For existing projects visitors are normally accommodated in hotel facilities close to the working locations and this will be the case for the Prestea GCP project.

2.5.2 Offices

An administration block will be constructed as part of the project. The administration block will consist of offices, a conference room, washroom, a kitchen, and a storeroom. The administration block will be built with containers and will be located at 5m from the housing unit.

2.5.3 Workshop

A workshop will be provided at the Prestea GCP site for the maintenance of project equipment. The area for the workshop will be situated within the space allocated to EPC Contractors (Exterran Corporation, Mechero Energy, Solar Turbines Incorporated and CIMC Enric Hongtu).

2.5.4 Health Care

An infirmary will form part of the accommodation facilities to cater for the health needs of the employees. The infirmary would have resident nurse and offsite medical personnel who will attend to the sick. Also, the EIS will identify public health facilities within Prestea and the wider project area where staff could get medical attention in the event of illness beyond the capacity of the infirmary.

The EPC contractors will have specific work standard first aid kits to respond to injuries and other ailments until individuals are attended to at a medical facility (where required).

2.6 Water Needs

The site will be connected to the Ghana Water Company Limited (GWCL) water supply system, where possible, to cater to the water needs of the project. There will be boreholes with attached overhead tank at each of the camp where access to GWCL water supply is not possible. The borehole water will be treated and tested to meet the Ghana Standards for Water Quality - Specification for Drinking Water (GS 175: 2017) before use. A water storage tank will be provided to supplement water needs in the case there is no flow from GWCL.

2.7 Waste Management

GEGL will classify wastes into streams to enable appropriate segregation, handling, transport, disposal, and where possible recycling/recovery in a manner appropriate to the waste materials. Colour coded waste receptacles will be provided by GEGL at vantage points on site to enable waste segregation and subsequent management.

Hazardous liquid and solid waste will be collected in a secure, enclosed location and transported offsite to a licensed hazardous waste facility. Options for hazardous waste disposal are currently being evaluated for the

project. Hydrocarbon wastes, mostly from waste oils and lubricants, will be managed as part of hazardous waste and the waste management plan will utilize the waste hierarchy framework of mostly prevention, reduction, recycle, recovery and the least of all, disposal.

Domestic wastewater and sewage will be channeled to a septic tank located at the site. The sewage built up will be removed by a vacuum truck sourced from Prestea to be transported to appropriate and approved waste disposal site.

Training will be provided to staff and the workforce to increase familiarity with competence in appropriate waste handling and disposal methods. Accidental releases will be managed through development and implementation of a spill response and emergency response procedures.

2.8 Scheduling and Activities

GEGL plans to complete the design, construction, and commissioning of the project in 18 months once the environmental permit is obtained. The construction activities are anticipated to consist of the following:

- Site preparation
- Mechanical and civil works
- Installation of all major mechanical equipment, controls for electricals and instrumentation in the following order:
 - Pretreatment station
 - Cryogenic station
 - Fractioning station
 - Power generation and Gas Compression Station
 - Storage systems
 - Fuel systems
 - Electrical systems
 - Portable water system
 - Plant fire system
 - Containerized construction camps and administrative building
 - Interconnection facility
- Commissioning
 - All gas conditioning and liquefaction processing stations
 - Power generation station
 - Balance of plant system
 - Fuel supply and storage system
 - Fire suppression and detection system
 - Interconnection facility

The detailed project scheduling and activities is attached in APPENDIX A.

2.9 Staffing and Employment

GEGL has a pool of qualified and experienced nationals available to support this project during the construction and operational phases. However, GEGL will specifically employ qualified people during the construction phase of the project. The people to be employed will consist of skilled labour (including professionals such as Engineers and Medical personnel) and unskilled labour. The list of technical people required for the project are:

- Project manager
- Construction supervisors
- QA/QC engineers
- HSE engineers
- Community relations representatives
- Doctors
- Nurses
- Local contractors
- International contractors for specialized work

The accommodation facility will include a clinic and there will be medical personnel assigned to facility to cater to ailments of the workforce.

During the operational phase, approximately skilled people unskilled labour will be outsourced. The list of technical people required for the operational phase of the project are:

- Fuel supply manager
- Operations Superintendent
- Mechanical Reliability Engineers
- Electrical & Instrumentation Engineers
- Civil Engineers
- Human Resource personnel
- Supply Chain personnel
- HSE personnel
- Community Relations personnel
- Operations Engineers
- Operations Mechanics and Technicians

The EIS will include details on the specific employment requirement for the Prestea GCP.

2.10 Alternatives to Proposed Undertaking

The alternatives considered for the Prestea GCP project, and discussed in the following sections, consisted mainly of the site selection alternatives and the project No-Go option.

2.10.1 Site Selection

Options Considered

The principal parameters considered for the selection of a suitable location for the implementation of the Prestea GCP project included the size of land available for the facility (the desired size was 100 Ha), onsite storage, terrain of land, proximity to the existing natural gas pipeline network, issues of environmental and social concern including proximity to habitations, accessibility for construction purposes, and anticipated LNG carriers to be accepted and communication and data network.

Following the completion of a reconnaissance study, three primary locations (Figure 5) were identified for consideration:

- Option 1: located at Prestea - Anyinam with geographical coordinates Latitude 5452777° and Longitude - 2.171048°
- Option 2: located at Prestea-Heman with geographical coordinates Latitude: 5.472521° and Longitude: - 2.117039°
- Option 3: located at Bogoso with geographical coordinates Latitude: 5.505075° and Longitude: - 2.085930°

The site investigations conducted by GEGL revealed a number of potential opportunities and constraints that each location presented.

Option 1

The following were the opportunities presented by the location:

- The closest possible connection to the GEGL natural gas pipeline system. GRRS is only 50m away from this location.
- It is approximately 2.5 km to the nearest community.
- It has a good communication and data network.

The following were the constraints with the location:

- The available land area for development is approximately 60 Ha.
- There was dispute regarding the rightful owner of the land.
- The landscape is hilly, necessitating more cutting to fill volumes of earthworks.
- The access road to this location is in poor condition. The 2.5km road is disconnected from the existing main road network. Thus, GEGL will need to build two bridges to connect the road to the highway to improve the road network to this location, GEGL does not have the required time to construct the two bridges.

Option 2

The following were the opportunities presented by the location:

- This is approximately 100 Ha land available for the development of the facility.

- The terrain for the site is best described as flat and gradually rises to the North-Eastern Boundary, with vegetation consisting of some forest cover, palm trees, coconut trees, and shrubs.
- The site is easily accessible, but GEGL may be required to develop a new access route of approximately 250m to connect the existing main road network.
- It has a good communication and data network.

The following were the constraints with the location:

- The nearest possible connection to the GRRS from this location is approximately 6.5km. GEGL will need to build a natural gas pipeline to connect the plant at this location to the GRRS.
- The 6.5km natural gas pipeline will encounter a water crossing at the River Ankobra during its construction
- The location is approximately 0.83 km to the nearest community.
- There are heavy small-scale mining activities in that enclave.
- The site may be prone to flooding due to its proximity to the Ankobra River.

Option 3

The following were the opportunities presented by the location:

- The landscape for this site is flat.
- The site is accessible.
- It has a fairly good communication and data network.

The following were the constraints with the location:

- There is approximately 52 Ha of land available for the development of the Prestea GCP.
- The nearest possible connection to the GRRS from this location is approximately 11km away. GEGL will need to construct a natural gas pipeline to connect the facility at this location to the GRRS.
- During its construction, the 11 km natural gas pipeline will cross the Ankobra River.
- The construction of a pipeline to the GRRS will go through the mining concession of Golden Star Resources.
- The location is approximately 0.38 km from the nearest community, with a few mud houses (settlements) within the area.
- Even though the site is easily accessible, GEGL will be required to renovate approximately 1km of existing road to connect this alternative option to the main road network.
- The level of small-scale mining in this enclave is moderate.

Selected Option

Option 2 was deemed feasible of the three sites evaluated due to the availability of land, proximity to existing natural gas pipeline systems, and distance from residences. The remaining two options were deemed insufficient in size and were eliminated from further consideration.



Figure 5: Satellite image of site location options considered for the Prestea GCP

2.10.2 No-Go Project Alternative

GEGL previously relied on liquefied petroleum gas, primarily propane and butane, to generate electricity from its power plants. However, the discovery of natural gas in Ghana has resulted in reforms in the country's natural gas market, allowing private industries to invest in natural gas projects. Furthermore, the Prestea GCP project will contribute to the advancement of the LNG sector in Ghana by promoting the use of the clean energy, generating economic opportunities for GEGL and both Ghanaian and foreign-based industries such as the mining industry, which are involved in large-scale heating or burning processes (such as Carbon-in-Leach (CIL) Elution Burners) that rely on heavy energy.

The Prestea GCP project will provide opportunities for quantities of associated natural gas that was flared into the atmosphere for safety reasons, to be put to beneficial use.

Should the project not advance, all the anticipated benefits of the project will not be realised, and the following would occur:

- There will be no further investment by GEGL in the project and no realisation of returns for GEGL.
- Potential employment and skills transfer/development would be lost.
- There would be no project related taxes paid to the government.
- All the benefits outlined in section 1.1.2 under project justification will not be realized.

3.0 BASELINE INFORMATION

The baseline condition for the Prestea GCP project area is presented in this chapter. The information is presented is on the existing physical, socio-economic, and biological features of the study area and surroundings.

3.1 Physical Environment

3.1.1 Topography

The project site is proximal to the Ankobra River in the Western Region of Ghana. The nearest location to the Ankobra River is 30 m away. The site terrain is described as flat and gradually rises to the North-Eastern Boundary and characterized by vegetation comprising some forest cover, palm trees, coconut trees and shrubs (Gyropod, 2021).

3.1.2 Climate

The area falls under the South-Western Equatorial and the Wet Semi-Equatorial climatic regions. The South-Western Equatorial is the wettest climatic region in Ghana with mean annual rainfall above 1,900 mm.

Average monthly temperatures range between 24°C to 31°C. The average annual rainfall for Prestea is 1,593 mm with the wet season months of May and June having the highest rainfall. High relative humidity occurs throughout the year ranging between 78.95 to 86.8%.

3.1.3 Soil and Land Use

The land cover of the project area is secondary forest cover, palm trees and coconut trees. The northern and southwestern sections of the project area are mostly affected by small-scale mining activities. This area for small-scale mining constitutes between 5%-10% of the project area (Gyropod, 2021).

A geotechnical site investigation is being carried for the project site. Details from the study will be used in the description of the soils in the project area and inform the impact assessment.

3.1.4 Air Quality

The main impacts to air quality will be from dust and fine particulate matter (PM₁₀) emissions from vehicular movement and earthworks during construction and combustion gas emissions (oxides of carbon (CO), nitrogen oxides (NO_x) and sulphur (SO₂)) from the operation of vehicles and equipment.

The EIA will provide detailed baseline air quality situation of the project area. During the EIA phase, a detailed emissions inventory will be undertaken, and dispersion modelling completed to determine the predicted concentration profiles of air pollutants associated with the project. The outcome of the assessment will then guide the development of an air quality management plan for the project.

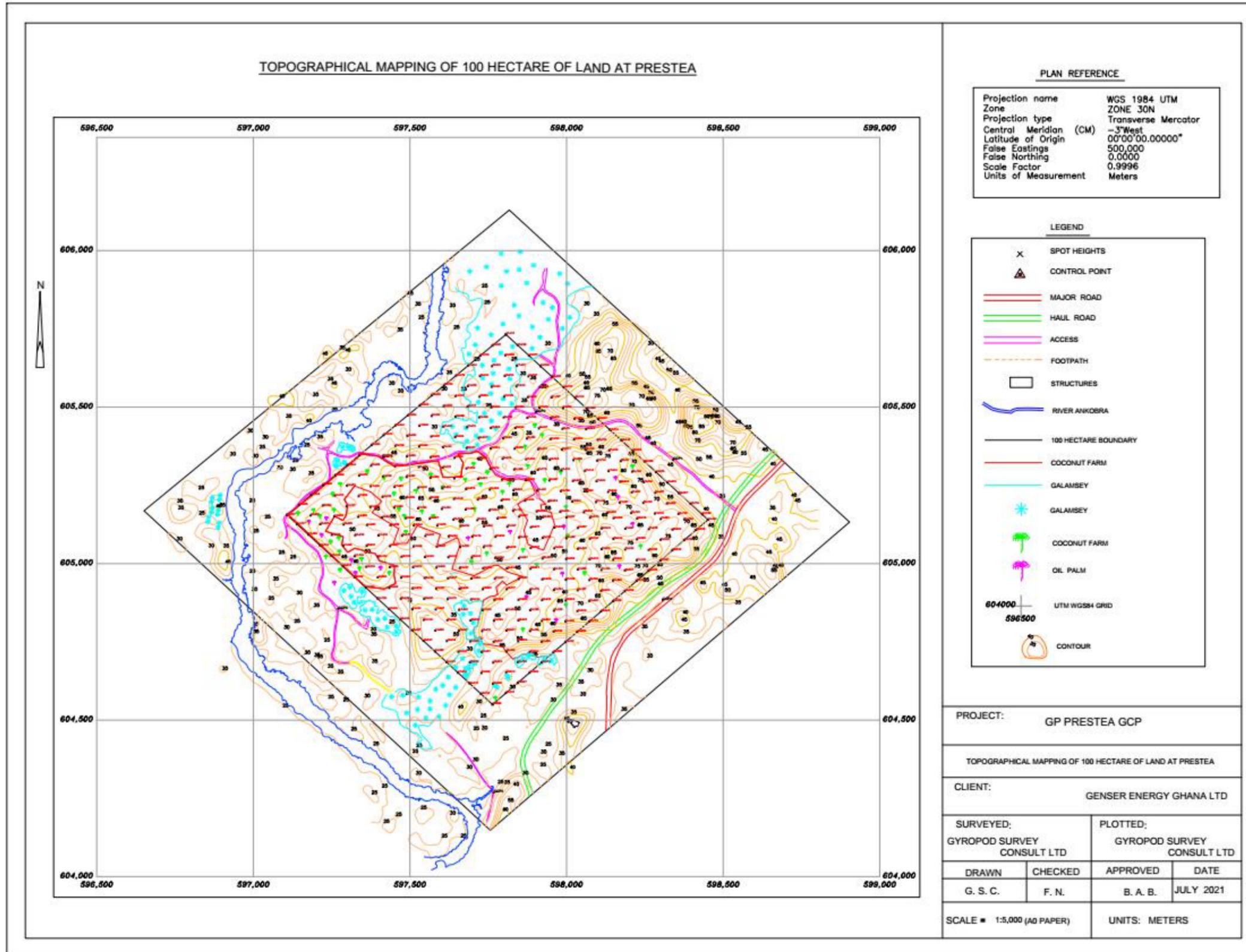


Figure 6: Project Site Topography

3.1.5 Noise

There will be elevation in noise level due to the construction of project infrastructure and vehicular movement. From a preliminary assessment conducted by GEGL, the closest community to the project site is 0.83km and the project area is characterised by forest cover, palm trees and coconut trees which could absorb some of the noise minimising the impact on the community.

It is also understood that about 5%-10% of the project area is being used for small-scale mining. The presence of these operators could add on to the noise levels. GEGL has plans to compensate the small-scale mining operators, thus, once this is done, then there will no other operation in the area to add on to the noise levels in the area.

The EIA will provide a detailed baseline noise situation of the project area. A noise propagation model will be developed based on the project activities and mitigations measures will be presented in the EIA report.

3.1.6 Surface Water

The Ankobra River, located approximately midway (30 m) within the Ankobra River Basin, drains south/southwest on the western boundary of the Prestea GCP project.

Water quality and streamflow in the project area will be characterised by sampling for analysis during the baseline study and the results will be assessed to guide the impacts assessment process and formulation of mitigation measures. Detailed information on the potential effects of the project on the Akobra River and their respective mitigation measures will be included in the EIS.

3.1.7 Groundwater

A geotechnical site investigation is being carried for the project site. Details from the study will be used in the description of the hydrogeological conditions of the project area and inform the impact assessment.

3.1.8 Visual Aspects

The topographical character of the project area is generally described as flat. Vegetation cover in the project area includes secondary forest cover, palm trees and coconut trees. Although the project site is generally a greenfield site, the visual character of the area is not unique within the region.

A visual characterisation of the project site will be undertaken as part of the EIA. The impacts on visual aesthetics of the project site will be assessed in terms of the location of infrastructure and appropriate mitigation measures will be formulated to address any negative impact.

3.2 Biological Environment

The vegetation in the project site was predominantly degraded for an area that lies in the moist evergreen zone. The topography of the site is undulating with the elevation ranging between ~25m and 160m. Portions of the land particularly at the northern border and towards the southern border have been subjected to small-scale mining activities. The landscape is interspersed with secondary forests, plantations (including cocoa, plantain, cassava, coconut, and oil palm) and thickets. The presence of few species of large mammals, mainly habitat generalists, at the project site was indicative of a fragmented landscape.

3.3 Socio-Economic Environment

The project will be in Heman, a community closer to Prestea. Prestea is one of the major mining communities in the Western Region of Ghana. In addition, there are several other communities. These communities include Ankobra, Brumase, Barrier, Merokete, Anomabo and hundreds of cottages and satellite communities. Most of the likely project affected communities are rural settlements, except for Prestea and Heman.

Prestea, Ankobra and Heman have a population of over 5000, but the other communities are not as populated as these three. Brumase has the least population among the directly affected communities. However, considering the geographical space, the community is one of the less densely populated in the area. Agricultural activities are common in the rural areas while commercial, retail-trade, small-scale mining and other industrial and service activities are dominant in the urban communities.

There are only two public health facilities in the area one at Heman and the other at Prestea. The health facility at Heman has limited facilities compared to that of Prestea. General socio-economic problems in the area are poor road network, poor water supply, and unemployment.

3.4 Traffic

During the construction and operational phases, there will be the need to manage the traffic from the transportation of construction materials to site and the transportation of the NGL from the site to the Takoradi Port. The major road from the Prestea GCP site to the Takoradi Port is the Takoradi-Agona Road (Figure 7).

It is envisaged that this may result in an increase in traffic and can also have safety impacts to other roads users. To understand the traffic conditions in the project area, a Traffic Impact Assessment will be undertaken (outside the EIA scope), and an appropriate Traffic Management Plan will be developed for the Prestea GCP project.

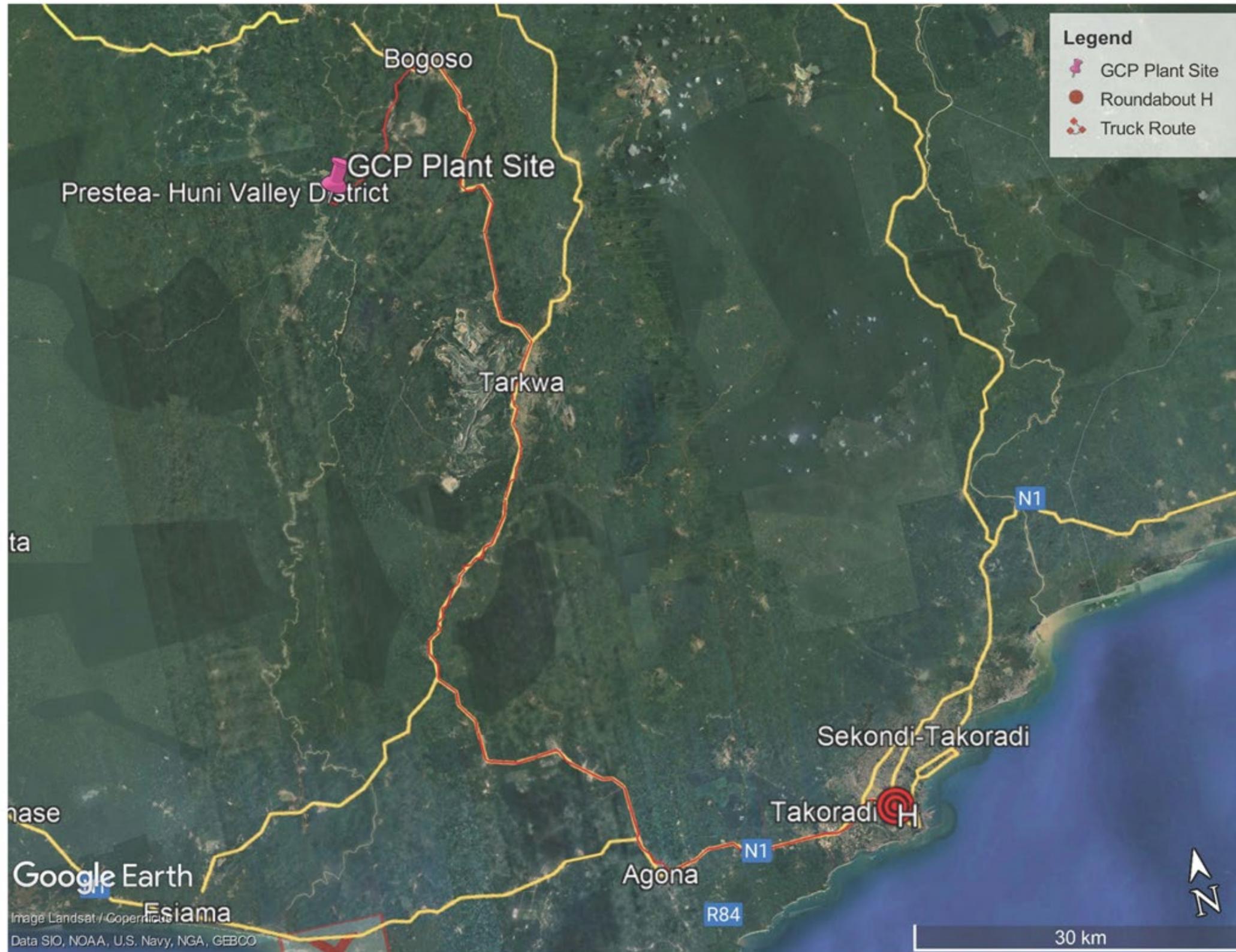


Figure 7: Major Road from Prestea GCP site to Takoradi Port

4.0 ENVIRONMENTAL AND SOCIAL IMPACTS

The EIA will identify and assess all potential impacts associated with the project construction, and operational phases. The activities involved in each phase will impact the physical, biological and socio-economic environment. However, the scoping phase has identified some preliminary impacts on these variables and are discussed in the following sections.

4.1 Physical Environment

4.1.1 Soil and Land Use

The project is a greenfield development and, as such, construction of the Prestea GCP will result in changes in land use. These activities could have the following impacts on soils:

- Loss of soil resources from soil erosion due to vegetation clearance and earthworks for project facility installations.
- Soil contamination from accidental spillage of hydrocarbons from machinery and equipment.
- Change in land use and potential loss of potential arable land.
- Soil compaction from the movement of machines and equipment.
- Changes in topography and drainage patterns due to modified landforms.

4.1.2 Air Quality

The ambient air quality impacts from the project may include the following:

- Dust and particulate emissions from the removal of vegetation cover increasing the potential for wind erosion during earthworks and movement of vehicles.
- Increased suspended particles in the air due to earthworks and the movement of bulk materials during construction.
- Atmospheric emissions from vehicular movement and equipment including CO₂, CO, NO_x and SO₂ from combustion engines.

4.1.3 Greenhouse Gas Emissions

The anticipated GHG emissions from the project are:

- CO₂ emissions due to the use of internal combustion engines in vehicle and stationary sources, mainly including power generation equipment.
- Fugitive emissions of methane from the pipeline system due to leakages mainly from flanges and valves.

4.1.4 Noise

The project activities will require the use of machines and equipment that could cause an increase in ambient noise levels at nearby communities during the construction of the project infrastructure and vehicle movement.

4.1.5 Surface Water

Surface water resources may be impacted from the following activities:

- Construction of project infrastructure such as the plant, truck loading area and storage area would result in permanent alteration in local catchment morphology and flow patterns
- Changes in the flow regime and quality of surface water systems.

- Accidental spillage of hydrocarbons from project activities that could result in the potential contamination of water resources.
- Change in interactions with groundwater resources.

4.1.6 Groundwater

Potential groundwater impacts that may occur because of the Prestea GCP project are as follows:

- Contamination of groundwater due to surface spillage, leakage, discharge, and/or incorrect storage and handling of chemicals, oils, lubricants, fuel and other hazardous materials.
- Contaminated runoff from the project site may collect in open depressions and infiltrate into the groundwater table and thereby contaminating the local groundwater resources.
- Contamination of groundwater from improper waste disposal.

4.1.7 Visual Aspects

The primary potential impacts on the visual resources of the project area are as follow:

- Visual intrusion due to construction related activity, materials and machinery.
- Reduction and/or permanent alteration of the visual resource value of the area.
- Light pollution from the Prestea GCP project.
- Reinstatement of visual resource value due to reclamation activities.

4.2 Biological Environment

4.2.1 Terrestrial Ecology

Development of the project may result in the following impacts to ecological resources:

- Loss of natural habitats and flora species of concern during vegetation clearance.
- Spread of invasive plant species due to earthworks.
- Injury and mortality of faunal species of concern during site vegetation clearance.
- Indirect effects on ecosystems integrity due to dust generation from earthworks and vehicles.
- Collision risk to fauna species of concern from construction vehicles.
- Potential loss of fauna because of accidents.
- Disturbance of fauna due to project activities and infrastructure development.
 - Project infrastructure can present a barrier to fauna movement.
- Disturbance of terrestrial species by noise and excessive light.

4.2.2 Aquatic Ecology

Changes in water quality and flow regimes have the potential to impact aquatic life as well as the riparian zones along the banks of water bodies.

4.3 Socio-Economic Environment

The following socio-economic impacts are envisaged:

- New business sales, multiplier effects and economic stimulation.

- Employment and skills development.
- Influx and migration issues.
- Potential economic displacement which could lead to effects on the livelihood of communities within the Prestea GCP project area.
- Possible cross-cultural tensions that could arise from the presence of foreigners and other non-indigenous people in the communities.
- Reduced access to farmlands and other properties near the project site.
- Potential economic displacement which could lead to effects on the livelihood of communities within the project area.
- Potential cessation of small-scale mining activities on the site.

4.4 Traffic

The following traffic impacts are anticipated from the haulage of NGLs from the Prestea GCP site to the Takoradi Port:

- Traffic flow disruption/increased travel time due to road congestion during hours
- Potential road safety issues and road accidents.
- Potential increased particulate matter and gaseous emissions from project trucks and vehicles resulting in air pollution at neighbouring sensitive receptors
- Potential spillage of NGLs should there be an accident during transportation
- Increase in noise levels due to project haulage related activities
- Further degradation of the roads used, including deterioration to damaged portions of the road paved surfaces, including cracking, ravelling, sags, and potholes

5.0 KEY ENVIRONMENTAL AND SOCIAL IMPACTS

This chapter identifies the potential negative and positive key environmental and social impacts (key impacts) of the project on the physical, biological, and socio-economic environments during the construction and operational phases. The key impacts are being critically assessed for the EIA phase so that effective mitigation measures could be proposed to control the impacts through avoiding, minimizing, rectifying, or reducing the impacts. The measures will include assessment of project design, project alternatives and development of an efficient management plan. Chapter 6.0 provides potential mitigation measures for the key impacts identified.

5.1 Physical Environment

5.1.1 Soil and Land Use

Land disturbance and loss of soil resources: For this Project, land disturbance will occur as vegetation is removed and soils are exposed from areas demarcated for the construction of project infrastructure. The potential effects of these activities include soil erosion and loss of soil resources, sedimentation in water resources, changes to river channels from sedimentation, and modified landforms.

5.1.2 Air Quality

Dust emissions: The removal of vegetation at the project site for construction activities could result in the emission of dust. Dust emissions will be generated during earthworks for the installation of project facilities and associated facilities, wind blowing over bare stockpiles of construction materials at site could also generate dust.

Gaseous emissions: There is also the potential for gaseous emissions into the atmosphere from vehicles, equipment and plant used for project activities. The EIA will include the specifications on the equipment that will be used and predict emissions from them to determine their level of impact on sensitive receptors.

5.1.3 Noise

Increased ambient noise levels: Noise levels within the immediate project area are expected to increase intermittently due to the transport of materials, operation of heavy equipment and construction activities such as excavation, operation of cement batching plant and ground compacting.

Noise modelling will be undertaken as part of the EIA, where various activities under the project phases will be modelled to assess the level of impact for each activity and appropriate mitigation measures will be developed for the management of impacts.

5.1.4 Water (Surface and Groundwater) Contamination

Water contamination: Potential contamination of both surface and groundwater due to surface spillage, leakage, discharge, and/or improper storage and handling of chemicals, oils, lubricants, fuel and other hazardous materials during construction and operational phase. These contaminants if not well controlled could be washed to the nearby Ankobra River and infiltrate into the groundwater system.

5.1.5 Visual Aspect

Visual intrusion: Reduction in visual resource value from project activities: site clearance, preparation, construction activities (that is removing existing vegetation and creating large bare areas) and project infrastructure could impact the local visual resource value. Furthermore, visually incongruous elements, including construction machinery and material laydown areas, will be introduced into the landscape.

Light pollution at night: The Prestea GCP facilities are expected to be illuminated for security purposes, this could increase ambient night-time light levels and result in disturbance from light point sources.

5.2 Biological Environment

5.2.1 Flora and Fauna

Habitat fragmentation and loss: Construction activities, including the development of facilities' footprints, will lead to the clearing of vegetation within the Prestea GCP project area. These could result in habitat loss and displacement of local flora and fauna.

There is also the risk to fauna loss due to the use of construction equipment and vehicular movement that could result in collisions with faunal species on site.

5.2.2 Aquatic

Changes in surface water quality and its impact on aquatic life: Contaminated runoff from the project area could be washed in the Ankobra River which could subsequently affect aquatic life. Spillages/leakages of oils and hydrocarbons during construction and operation activities could infiltrate into the groundwater system and subsequently affect aquatic life.

5.3 Socio-Economic Environment

Employment opportunities: During the implementation of the project, skilled and unskilled labour will be hired for all phases of the project, creating employment opportunities in the project area. GEGL will be unable to employ all the people seeking work, therefore the employment process will be guided by GEGL's employment policy and draw from procedures employed in other GEGL projects.

Loss of farmlands and livelihoods: The acquisition of land for the project will have impacts on the livelihoods of neighbouring community members because of limited or no access to land. Affected farmers could lose their livelihood.

Land restoration: GEGL acquiring the land would result in the cessation of small-scale mining activities on and around the site. This has the potential of helping to restore the integrity of the farmlands around the project area.

Safety risks (accidents, injuries, explosions and fire): Potential increase in vehicle accidents because of the increased use of the public road for conveying construction material to site. This increases the risk of the public and neighbouring communities with operations. Easy access to the working areas can result in accidents and fatalities, therefore measures would have to be put in place to minimise unauthorised access.

5.4 Traffic

Increase in road traffic and associated impacts: The introduction of the NGL tanks trucks could result in an increase in traffic and travel time for commercial and private transport on the highway and town roads. It can also result in the occurrence of accidents if proper safety measures are not put in place and driver fatigue is not managed. There is also the potential for the spillage or leakage NGLs. Increase traffic could also result in dust generation and gaseous emissions.

6.0 MITIGATION MEASURES

This chapter proposes mitigation measures envisaged to reduce, rectify, minimise, and, where possible, avoid adverse physical, biological, and socio-economic impacts/effects associated with the project. During the EIA phase, a variety of mitigation measures will be developed in line with regulatory requirements to avoid, minimise, or rectify, or reduce as much as possible significant impacts associated with the project.

6.1 Physical Environment

6.1.1 Soil and Land Use

Land disturbance and loss of soil resources: Some of the mitigations to be implemented include progressive clearing of vegetation and limiting site clearance to the footprints of project infrastructure. This will minimise the loss of flora and habitats and exposure of soil to erosion. Soil will be stockpiled near the striped site to avoid excessive handling. Construction materials (aggregates) will be covered with tarpaulin to prevent erosion and to prevent exposing soil. The area for construction will be clearly demarcated to limit land take. During the EIA phase, specific mitigation measures will be developed to control the disturbances.

6.1.2 Air Quality

Dust emissions: Mitigation measures will include wetting or covering construction related materials (aggregates) during transportations and when stockpiled. Speed limits on-site will be adhered to by vehicle operators to minimise the mobilisation and dispersion of dusts. Periodic wetting of stockpiled construction materials will also be carried out to prevent material being blown from the stockpiles during high winds.

Gaseous emissions: Machinery with low emissions will be used and GEGL will undertake routine maintenance and servicing of machines in accordance with the manufacturer's recommendations or legal requirements. Unnecessary movement of vehicles will be avoided, and idle machinery will be switched off. The GEGL maintenance team will conduct periodic patrols and inspections/checks of the plant components.

The outcome of the air quality impact assessment which will be undertaken during the EIA phase will guide the development of an appropriate air quality management plan for the project.

6.1.3 Noise

Increased ambient noise levels: Construction equipment will be fitted with noise attenuation equipment (e.g., muffles) provided by the manufacturers/ suppliers on engine exhausts and other relevant components. Maintenance and regular servicing of equipment and other noise emitting equipment to prevent any malfunction that could cause high level noise. Equipment with low sound power level will be used and operation hours will be limited for noisy equipment. Hearing protection earplugs/earmuffs will be worn by operators of noisy equipment. Equipment that may be intermittent in use will be shut down between work periods.

6.1.4 Water (Surface Water and Groundwater)

Change in water quantity and quality: GEGL will install boreholes for groundwater quality monitoring. This will allow early detection of any contamination of water resources. Parameters to be monitored and the frequency of monitoring will be determined by the level of risk.

Adequate storm water trenches and berms will be constructed to channel sediment-laden waters into adequately designed sediment trap to allow settling prior to discharge. Diversion channels will be constructed to channel runoff off the site.

Spill kits will be made available in areas where chemical and/or hydrocarbon spills could occur to facilitate immediate clean-up, and personnel will be trained in spill prevention and response. There will also be regular maintenance of project equipment and vehicles to minimise the potential spillage and leaks of hydrocarbons.

Staff will implement protocols for the storage, handling and disposal of all chemicals and other hazardous substances. Protocols will also include provision for the appropriate clean-up of potential spills and leaks.

6.1.5 Visual Aspect

Visual intrusion: Re-vegetation will be carried out to stabilise disturbed land, which will also address issues with erosion and improve the aesthetic quality of the site. Where feasible, trees will be planted around the project site to improve the visual appearance. Potentially intrusive activities will be screened off to the extent feasible. Efforts will be made to keep the project site in a neat and orderly condition during project life.

Formation of dust plumes: Access roads and any large bare areas where dust is generated will be watered down during construction. All mitigation measures from air quality management plan to be developed for the management of dust will be adhered to during project implementation.

Light pollution: Lighting requirements of the facilities will be planned to ensure that lighting meets the need to keep the site secure and safe, without resulting in excessive illumination.

6.2 Biological Environment

6.2.1 Flora and Fauna

Habitat fragmentation and loss: Mitigation measures that will be implemented to minimize the loss of habitats and disturbance of flora and fauna species include limiting vegetation clearance within the footprints of the project infrastructure. From the field surveys any breeding habitats or otherwise sensitive areas will be demarcated and avoided. Where it is unavoidable, plants and seedlings of plants of conservation importance will be carefully removed and nursed and/or replanted in an area with a similar environment for its survival.

Dust suppression by watering will be implemented on exposed surfaces before and after earthwork activities, including the access roads and supporting facilities.

Spread of invasive species:

Native plant species will be used to revegetate any areas which have exposed soils where soil erosion is likely to occur.

Risk to fauna: Enforcement of GEGL speed limit on-site for all vehicles to minimise collision risk to fauna. Construction related vehicular movements will be avoided at night.

6.2.2 Aquatic

Changes in surface water quantity and quality and its impact on aquatic life: Appropriate stormwater infrastructure, including earthen berms and sediment traps, will be installed around the Prestea GCP project site. These will be regularly maintained during the construction and operational phases to minimise impacts on riparian species.

6.3 Socio-Economic Environment

Employment opportunities: The creation of employment is a positive impact and therefore the key aspect will be the implementation of appropriate strategies to enhance this impact. The establishment of a local skills desk in the study area to determine the potential skills that could be sourced in the area and recruit local labour as much as possible. Knowledge sharing and on-the-job- training as a prerequisite, where feasible, for all service contractors/service providers working on the development and employment of local labour.

Engage key stakeholders such as community leaders continuously to ensure that all likely concerns, risks and inputs are factored throughout the project cycle.

Boost in local economy: Goods and services will be procured from local small businesses to stimulate indirect job creation.

Loss of farmlands and livelihood: GEGL will put in place a plan to guide compensation for loss of farmlands. There will be a farmland/crop compensation plan which will be implemented in line with Land Commission Act, 2008 (Act 767). GEGL in collaboration with affected farmland owners and the government, will explore alternative livelihood programmes for implementation.

Safety risks (accidents, injuries, explosions and fire): All Material Safety Data Sheets for all hazardous chemicals on site will be erected at vantage points where such chemicals are stored. Movement of workers between the site and the camp will be controlled to minimise loitering around the proposed facility by providing scheduled transportation services.

There will be an implementation of a traffic management plan, use of noise control devices such as noise barriers and deflectors, and use of equipment with the lowest possible sound power levels.

Poor housekeeping: GEGL will ensure the Contractor complies with all the health and safety requirements of the site, including the need to observe proper housekeeping and putting measures in place to ensure the safety of workers and the public at all stages of the project.

Cessation of small-scale mining on the site: This is a positive impact in that it is likely to put an end to small-scale mining at the site and the land can gradually be rehabilitated for other beneficial uses.

6.4 Traffic

Mitigation measures for traffic impacts will include health and safety training prior to commencement of work or new assignment. Installation of appropriate road and safety signages on highway and community roads. Installation of speed control devices on trucks and implementing speed limits for trucks on highways and community roads. Equipping trucks and training operators on the use of spill kits and emergency response plans.

7.0 TERMS OF REFERENCE FOR THE EIA

The purpose of the EIA study is to identify adequate mitigation measures and management plans to address possible direct and indirect significant environmental and social impacts of the Prestea GCP project for acceptability and sustainability. The ToR for the EIA will be significantly influenced by the key issues raised during the stakeholder engagement and the preliminary key impacts identified for the project. The impact hierarchy to be applied are avoid, minimize, rectify, or reduce and where all else is impossible, offset through compensation. The EIS will include the following:

- A description of the undertaking.
- An analysis of the need for the undertaking.
- Alternatives to the project, including the “no-go” alternative.
- An identification of existing environmental conditions including social, economic and other aspects of environmental concern.
- Information on potential positive and negative impacts of the Prestea GCP project from the environmental, social, economic and cultural perspectives in relation to the different phases of development.
- The potential impact on the health of people.
- Methodologies for the assessment of identified impacts and applicable mitigation measures to minimize, rectify, or reduce the impacts.
- Measures to prevent or mitigate any potential negative impacts and enhance project benefits.
- Management plans to monitor environmental impacts and to assess performance of the proposed mitigation measures.
- Contingency plans to address any unpredicted negative environmental and social impacts and accompanying mitigation measures.
- Evidence of consultation with stakeholders of the project.
- Project design drawings and maps and other illustrative material to enable stakeholders to understand the contents of the EIS.
- Provisional environmental management plan.

The ToR for undertaking the EIA is as described in the following sections.

7.1 Physical Environment

7.1.1 Soil and Land Use

Soil Classification including description and mapping of the soil types and their distribution within the study area.

- Description and summary of the capability of the soils to support agriculture.
- Description and summary of the current land use in the project area.
- Description of the impacts of the project on soil and land use.
- Recommendation of actions to mitigate significant impacts

7.1.2 Air Quality

Baseline Assessment

A baseline assessment will be conducted comprising the following:

- Review of emissions from the proposed plant operations and their impacts.
- Identification of neighbouring sensitive receptors (such as, nearby residential and industrial areas, schools, hospitals) of the proposed plant
- Identification of any nearby existing sources and a discussion on how they may contribute to the cumulative air quality impact will be incorporated (It must be noted that such emissions from these sources will not be included in the dispersion model for the impact assessment).
- Evaluation and discussion of the predicted emissions concentrations and anticipated impacts.
- Meteorological conditions with the purchase of three years WRF prognostic data (required for input into the AERMOD dispersion model) for the period 2018 – 2020
- Recommendations on mitigation measures and management strategies for identified impacts on sensitive receptors.

Emissions Inventory

A detailed emissions inventory will be compiled to assess emissions associated with the proposed plant operations only. Key emissions from the Prestea GCP project will include particulate matter (PM10 and PM2.5), SO₂, NO₂, CO and VOCs.

The emissions inventory will account for all significant releases to atmosphere in the form of point, area and volume (fugitive) sources. Emissions will be calculated using data from GEGL, GSA standards, international regulations and limits, such as the IFC ambient air quality limits, the United States EPA AP42 and/or Australian National Pollution Inventory emission factors, where available.

Dispersion Modelling

The AERMOD¹⁰ dispersion modelling platform will be utilized to assess the dispersion of pollutants from the Prestea GCP project.

Key sources of emissions will likely include:

- Boilers/combustion engines, tanks, etc from the plant.

Associated pollutants modelled will likely include:

- PM₁₀ and PM_{2.5}, SO₂, NO₂, CO and VOCs

The dispersion modelling scenarios will be assessment of impacts associated with the proposed plant operations.

Note: Emissions associated with the construction phase will not be modelled as they are deemed to be transient and short-lived in nature, however a professional opinion will be provided for inclusion and consideration in the impact assessment. Furthermore, cumulative impacts (from the Prestea GCP project together with existing

¹⁰ AERMOD is a recommended Level Two dispersion model and is typically recommended for impacts that are in the order of a few kilometres downwind (<50 km). AERMOD is a steady-state plume dispersion model for simulating transport and dispersion from point, area, or volume sources based on an up-to-date characterization of the atmospheric boundary layer. The model can be applied to rural and urban areas, flat and complex terrain, surface and elevated releases, and multiple sources, in the stable boundary layer. It uses hourly sequential meteorological files with pre-processors to generate flow and stability regimes for each hour that cumulatively offer long-term ambient concentrations whilst also capturing short-term peaks.

ambient concentrations in the surrounding area) will be determined, from the ambient air quality monitoring data if available. A detailed emissions inventory will not be compiled for surrounding existing sources.

7.1.3 Climate Change and Greenhouse Gas Emissions

The scope for the climate change and greenhouse gas studies will be as follows.

7.1.3.1 Climate Change

Climate Change Risk Assessment will be undertaken in line with the IFC PS3. The Climate Change Risk Assessment approach is designed to be consistent with the requirements of the Taskforce for Climate-related Financial Disclosure (TCFD) and will consider both physical and transitional risks to the project.

Physical Climate Risks

The Physical Climate Risk assessment will employ a risk management approach based on available design to anticipate future climate conditions for the project region, and how climate change related disruptions or impacts may affect the project.

A qualitative screening level risk assessment approach will be conducted based on the available project design information, as well as completed hydrology and climate change studies. This will simplify the assessment and focus future assessments on the identified high-risk areas for the project.

The approach to Climate Change Risk Assessment are as follows:

- 1) Potential climate hazards anticipated for the project region will be identified using future climate projections relevant for the operational lifespan of the project. A qualitative regional climate change assessment will be undertaken for use in the Risk Assessment.
- 2) Assess whether the climate hazards identified in step 1) have the potential to interact with the project components. If the interaction is possible, a “yes” response is given and a description of how the interaction may affect the project will be included.
- 3) Assign a risk rating to each potential project hazard interaction.
- 4) Identify and assess how the project proposes to manage the identified risks through resilience plans, processes, policies, systems and measures, based on Project information provided by the client.

The results will be summarized as a section for inclusion in the Draft EIS.

Transitional Climate Risks

The Transitional Risk assessment will comprise a qualitative screening level assessment of project risks associated with future decarbonization of the economy and associated trends.

Greenhouse Gas Assessment

The GHG assessment will be primarily undertaken using a combination of methodologies including the Greenhouse Gas Protocol and the Intergovernmental Panel for Climate Change Emissions Factor Database. The Greenhouse Gas Protocol is a joint initiative of the World Business Council for Sustainable Development and the World Resources Institute and is one of the most widely used international accounting tool for government and businesses to quantify and manage GHG emissions. Both assessment methodologies are internationally recognised tools for calculating Project GHG emissions. Where required, the assessment will also utilise other internationally recognised methodologies and guidance including the National Greenhouse Accounts Factors from the Australian Government Department of Climate Change.

The GHG Assessment report will include the following:

- Summarise the relevant international legislation for consideration for GHG emissions assessments.
- Inventory for the Prestea GCP project which includes direct (and indirect scope 2 emissions) for significant sources for the peak processing year.
- Evaluate and tabulate annual GHG emissions for the Prestea GCP project as CO₂ equivalent.
- Identify and describe feasible and cost-effective mitigation and management options to reduce emissions.
- Produce a GHG emissions assessment report.

7.1.4 Noise

Baseline Assessment

To contextualise the study, a baseline assessment will be performed which will comprise the following:

- Identification of sensitive receptors (noise receivers) in the Prestea GCP project area.
- An assessment of the existing noise sources in the Prestea GCP project area.

Noise Inventory and Modelling

A detailed inventory of all potential noise sources associated with the Prestea GCP project will be developed and sound pressure levels for each of these sources will be determined.

Noise levels associated with the Prestea GCP project will be determined using an internationally accredited noise modelling software. The noise source inventory will be utilised as input for the noise model. Gridded outputs from the model will be provided as a visual representation (contour output) of noise levels throughout the region.

7.1.5 Surface Water

The hydrology study will focus on aspects such as water resource availability, stormwater management and surface water contamination.

The surface water study will include the following:

A description of the catchment and water users in the project area.

A description of the local hydrology.

- Assessment of the water quality and quantity data (where available) of the Prestea GCP project area.
- Recommendation of appropriate mitigation measures to mitigate significant impacts identified.

7.1.6 Groundwater

There is the potential for the project to have an impact of groundwater during the construction and operational phases and therefore a hydrogeological study will be carried out.

This study will be based on existing information such as aerial imagery, geological maps, piezometric maps, identified groundwater users through boreholes and hand dug wells.

The potential impacts of the project activities during construction and operations will be identified, described, and quantified, and recommendations for mitigations provided. A groundwater monitoring network will also be developed to monitor quality over time.

7.1.7 Visual

The scope of work for the visual assessment is as follows:

- Review of photos, topographical maps, aerial photography and project site layout drawings on the Prestea GCP project.
- Photographic assessment of the project site and surrounding study area.
- Determine the magnitude of the impact, by considering the Prestea GCP project in terms of aspects of visibility, visual intrusion and visual exposure to inform the Visual Impact Assessment.
- Propose mitigation strategies and measures.

7.2 Biological Environment

The study will therefore entail:

Description of landcover classification in the project area.

Assessment of the vegetation composition in the Project Area.

The impact assess will quantify the projects effects on ecosystems and species within the project area. It will:

- Quantify potential project effects relative to the baseline conditions.
- Predict changes in ecosystems and habitat that may result from project activities (e.g., site clearing).
- Assess impacts and propose mitigation measures to avoid, minimise to avoid and where appropriate restore biodiversity.

A Biodiversity Management Plan will be developed for the Prestea GCP project, and this will provide a framework for the implementation of the required mitigation measures for identified impacts on biodiversity.

7.3 Socio-Economic Environment

The socio-economic study will be undertaken alongside the stakeholder engagement and will include the following:

- Detailed stakeholder engagement and collation of socio-economic baseline data (focus group, one-on-one and community meetings).
- National and regional profiles.
- Detailed collation of socio-economic baseline data (focus group, one-on-one and community meetings) and presentation of the demographic information and the characteristics of the project area.
- Undertake Socio-Economic impact assessment.
- Provide recommendations for mitigating and managing socio-economic impacts including loss of land, change in land use.
- Recommendations to avoiding or mitigating adverse impacts and enhancing positive effects of the project. These will also be included in a social management plan, which will be captured as part of the provisional EMP.

7.3.1 Key Stakeholder Issues

The key issues and concerns raised during the stakeholder engagement will be assessed during the EIA and will include:

- Employment and training opportunities.

- Compensation related issues.
- Benefit of the project to the communities.
- Public education on Prestea GCP project.

7.4 Structure of EIA Report

The EIA will consist of the chapters described in Table 4.

Table 4: EIS Structure

Chapter	Description of Content
Executive Summary	This chapter provides a non-technical description of the entire Prestea GCP project, predicted environmental and social impacts, and the mitigation measures proposed.
Chapter 1 - Introduction	This chapter contains a brief description of the project background, the justification for, and potential benefits of the Prestea GCP project, and the objectives of the EIA.
Chapter 2 – Policy Legal and Regulatory Framework	The chapter entails a review of the relevant policies, laws and regulations which are applicable to the project.
Chapter 3 - Project Description and Alternatives	This chapter describes the Prestea GCP project and provides a summary of alternatives considered.
Chapter 4 - Baseline Information	Existing environmental and social conditions in the vicinity of the Prestea GCP project are described in this chapter. Biological, physical, and socio-economic resources that potentially could be impacted by the construction and operation of the Prestea GCP project are discussed.
Chapter 5 – Public Participation	This chapter provides information on consultations and stakeholder engagement conducted in conjunction with the engagement process for the Prestea GCP project.
Chapter 6 – Impact Identification and Prediction	This chapter presents key impacts associated with the construction and operation of the Prestea GCP project with focus on assessing potential impacts on the biological, physical, and socio-economic resources.
Chapter 7 – Impact Mitigation	This chapter describes mitigation measures that will eliminate, minimize, rectify, or reduce potential impacts identified in Chapter 6.
Chapter 8 - Monitoring Programmes	This chapter provides a description of programmes that will be used to monitor various resources during the construction and operation of the Prestea GCP project.
Chapter 9 - Provisional Environmental Management Plan	This chapter includes GEGL's provisional EMP specific to the Prestea GCP project. The plan governs activities that will occur during the initial 18-month after commencement of operations.
Chapter 10 - Reclamation and Decommissioning	Methods and measures to be used to rehabilitate and decommission the Prestea GCP project site after construction and the cessation of operations are described in this chapter.
Chapter 11 - Conclusion	This chapter presents conclusions reached from preparing the EIS for the Prestea GCP project.
References	All references cited in the Draft EIS are included in this section.

8.0 CONCLUSION

In a bid to significantly minimize the operational challenges experienced by GEGL given the presence of liquids in the natural gas utilized for power generation, GEGL is constructing the Prestea GCP with initial capacity of 135 mmscfd and expanded to 200 mmscfd. The Prestea GCP will be for the extraction of NGLs, specifically ethane, propane, butane, Iso-pentane and condensates. The Prestea GCP will also facilitate the compression/liquefaction of natural gas and sale of LNG to GEGL's power generation facilities in the West African region.

The Prestea GCP components will include gas pre-treatment station, cryogenic separation station, fractioning and separation station, utilities, gas compression station, NGL storage and loading terminal and interconnections.

Project stakeholder engagements are ongoing and baseline data being collected for biophysical and socio-economic environments. Data collected and stakeholder input will guide the impact assessment presentation in the EIS.

The key impacts identified include potential land disturbance, particulate and gaseous emissions, increased noise levels, loss of flora and fauna of ecological importance, socio-economic impacts.

The next phase of the EIA process will involve the completion of baseline data collection, detailed assessments by specialists through qualitative and quantitative analysis methods, assessment of impacts to inform mitigations and management plans based on impact to avoidance, minimization, rectification, or reduction. During this phase, measures will be proposed to mitigate negative impacts and enhance project benefits to the extent practicable.

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U.S. Energy Information Administration. (2012). What are natural gas liquids and how are they used? INTERNET: <https://www.eia.gov/todayinenergy/detail.php?id=5930>. Accessed 17 December 2021

Signature Page

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https://golderassociates.sharepoint.com/sites/154493/project_files/6a_deliverables_gcp_esia/final_client_deliverables/21497679-350734-1_gegl_gcp_scoping_report_final_28-02-2022.docx

APPENDIX A

**EPA letter requesting and EIA for
the project**

Tel: (0302) 664697 / 664698 / 662465

667524 / 0289673960 / 1 / 2

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Environmental Protection Agency

P. O. Box MB 326

Ministries Post Office

Accra, Ghana

Website: <http://www.epa.gov.gh>

Our Ref: CE: 7609/01/02

16th April, 2021

THE SENIOR COMPLIANCE OFFICER
GENSER ENERGY GHANA LIMITED
HORIZON PLAZA
#60 LIBERATION ROAD, 1ST FLOOR
AIRPORT-ACCRA

Dear Madam,

ENVIRONMENTAL IMPACT ASSESSMENT (EIA):
PROPOSED CONSTRUCTION OF AN LNG LIQUEFACTION AND GAS CONDITIONING
FACILITY IN THE PRESTEA HUNI-VALLEY DISTRICT, WESTERN REGION.

We acknowledge receipt of your application for Environmental Permit submitted to the Agency in accordance with the Environmental Assessment Regulations 1999 (LI 1652) on the proposed construction of an LNG Liquefaction and Gas Conditioning Facility in the Prestea Huni-Valley District in the Western Region.

The proposal falls in the category of undertakings (Regulation 3) for which Environmental Impact Assessment (EIA) is required to help understand the likely implications of the proposal, the relevant alternatives and mitigations to consider in order to ensure sound decision-making and sustainable development of the project.

In line with Regulations 11 of LI 1652, you are advised to carry out a scoping exercise to generate the relevant Terms of Reference (TOR) to guide satisfactory EIA study of the proposal.

Please note that scoping is meant to focus the EIA on the key issues, concerns and decision areas and solicit input and guidance of all relevant stakeholders on the TOR. Scoping notices must be served as appropriate to facilitate stakeholder involvement (see attached sample). Ten (10) hard and soft copies of the scoping report must be submitted for study and agreement on the TOR, prior to the EIA studies.

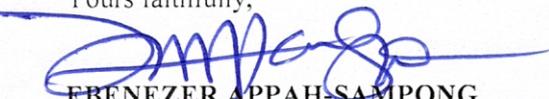
It is important to note that the scoping report and EIS should contain a summary profile of the main consultants who took part in the studies. The summary information should include: Name, Address, and Tel. No., E-mail address, Qualification and Experience of the relevant staff and their specific contribution to the report.

Failure to provide this information would make the submission incomplete and would delay the review of the report.

For further information or clarification on the above, please contact **0501301567 / 0501301563**.

Counting on your cooperation.

Yours faithfully,


EBENEZER APPAH-SAMPONG
DEPUTY EXECUTIVE DIRECTOR/TECHNICAL
for: EXECUTIVE DIRECTOR

Cc: The Ag. Regional Director, EPA-Tarkwa, W/R

SCOPING NOTICE

.....proposes to establish a
(Name of Company/Organization)

..... at

(Proposal/undertaking)

(Location)

in the..... of the

(District)

(Region)

Notice of the proposed..... is hereby served for public information as required under the procedure for the conduct of EIA in accordance with Regulations 15(1) of (LI 1652)

Any person(s) who has an interest, concern, or special knowledge relating to potential environmental effects of the proposed undertaking, may contact or send such concerns, etc to

The Director
P. O. Box
Accra

The Executive Director
Environmental Protection Agency
P. O. Box M326
Accra

Tel:

66469/8 and 708175-8

Fax:

662690

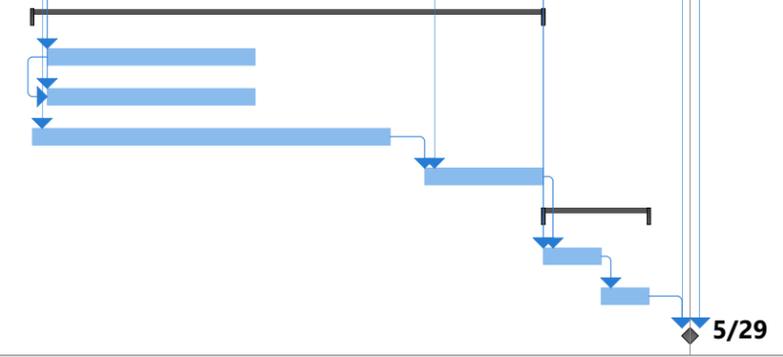
Email:

support@epaghana.org

APPENDIX B

Prestea GCP Project Schedule

ID	Task Name	Duration	Start	Finish	Predecessors	21		Half 2, 2021			Half 1, 2022		Half 2, 2022			Half 1, 2023			Half 2, 202
						M	M	J	S	N	J	M	M	J	S	N	J	M	M
36	Plant Construction	222 days	Tue 4/26/22	Wed 3/1/23															
37	Equipment's Foundations	90 days	Thu 5/5/22	Wed 9/7/22	7														
38	Plant Roads	90 days	Thu 5/5/22	Wed 9/7/22	7,37SS														
39	Tie-ins and Gas pipeline	155 days	Tue 4/26/22	Mon 11/28/22	7														
40	Subsystem's Site Installation	52 days	Tue 12/20/22	Wed 3/1/23	34,39														
41	COMMISSIONING AND START UP	46 days	Thu 3/2/23	Thu 5/4/23															
42	Pre-Commissioning and Start up	25 days	Thu 3/2/23	Wed 4/5/23	30,32,40														
43	Commissioning	21 days	Thu 4/6/23	Thu 5/4/23	42														
44	END	0 days	Mon 5/29/23	Mon 5/29/23	43,10,11														5/29



Project: GP Prestea Project Gan
Date: Mon 1/17/22

Task		Project Summary		Manual Task		Start-only		Deadline	
Split		Inactive Task		Duration-only		Finish-only		Progress	
Milestone		Inactive Milestone		Manual Summary Rollup		External Tasks		Manual Progress	
Summary		Inactive Summary		Manual Summary		External Milestone			



APPENDIX C

**Stakeholder Engagement
Comments and Responses
Report**

REPORT

Genser Energy Ghana Limited (GEGL) - Gas Conditioning Plant: Stakeholder Engagement Comments and Responses Report

Environmental and Social Impact Assessment

Submitted to:

Genser Energy Ghana Limited

Submitted by:

Golder Associates Ghana Ltd.

Densu Point Building, 3 Foho Link, North Dzorwulu, Accra, Ghana

P.O. Box KIA 16092, Airport, Accra, Ghana

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21497679

February 2022



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1 x copy GEGL

Table of Contents

1.0 INTRODUCTION	1
2.0 PROJECT OVERVIEW	1
3.0 REGULATORY REQUIREMENTS, GUIDELINES, AND STANDARDS	1
3.1 National and international requirements	1
3.1.1 National requirements	1
3.2 International requirements.....	2
3.2.1 Development Bank of Southern Africa Environmental and Social Safeguard Standards (2018).....	2
3.3 Gender policies.....	2
4.0 STAKEHOLDER ENGAGEMENT PROCESS	3
4.1 Objectives.....	3
4.2 Approach and methodology	3
4.3 Development of a stakeholder database.....	4
4.4 Methods of engagement.....	4
4.4.1 Notification	4
4.4.2 Invitations and presentation	4
4.5 Stakeholder engagement	4
4.6 Summary of key issues, concerns, and comments submitted during the stakeholder engagement process.....	6
5.0 CONCLUSION	6

TABLES

Table 1: Stakeholder Engagement List	4
Table 2: Comments and Response Register.....	9

FIGURES

Figure 1: Photos of stakeholder engagements.....	5
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APPENDICES

APPENDIX A

Comments and Response Report

APPENDIX B
Engagement Minutes and Attendance Sheet

1.0 INTRODUCTION

Stakeholder consultation is a key component of every environmental impact assessment (EIA) process. It strengthens the value of impact assessment and informs project planning and decision-making.

This document summarises the stakeholder engagement process conducted for the Genser Project as part of an EIA process by Genser Energy Ghana Limited (GEGE). Golder has been requested to produce a stakeholder engagement report based on the minutes of the stakeholder engagement process that GEGE provided.

2.0 PROJECT OVERVIEW

GEGE is an Independent Power Producer in Ghana which specialises in providing custom-engineered energy solutions to industrial clients with high energy requirements. GEGE engages in engineering, procurement, construction, operations and maintenance of its power generation assets. GEGE sells power and steam to clients.

In a bid to significantly minimize the operational challenges experienced by GEGE given the presence of liquids in the natural gas utilized for power generation, GEGE is constructing a Liquefaction and Gas Conditioning Plant (Prestea GCP) and associated infrastructure at Prestea for the extraction of Natural Gas Liquids (NGLs), specifically ethane, propane, butane, Iso-pentane and condensates. The initial capacity of the Prestea GCP will be 135 mmscfd and expanded to 200 mmscfd. The Prestea GCP will also facilitate the compression/liquefaction of natural gas and sale of LNG to GEGE's power generation facilities in the West African region.

The Prestea GCP will also facilitate the compression/liquefaction of natural gas and the sale of Liquid Natural Gas to GEGE's power generation facilities in the West Africa region. The Prestea GCP will require an expansion of the GP Takoradi Port Facility to include an NGL facility composed of storage tanks, truck unloading and ship loading pipelines.

The Prestea GCP main components are gas pre-treatment station, cryogenic separation station, fractioning and separation station, gas compression station, and NGL storage and loading terminal.

GEGE contracted Golder Associates (Golder) to implement an Environmental and Social Impact Assessment for the Prestea GCP. A component of the stakeholder engagement process is informing and consulting with stakeholders about the project and addressing questions or concerns related to the project¹.

3.0 REGULATORY REQUIREMENTS, GUIDELINES, AND STANDARDS

GEGE's operations are premised on the principles of environmental sustainability. In addition to its own standards and the Development Bank of Southern Africa's (DBSA) Environmental and Social Safeguard Standards (2018), GEGE will comply with national regulations and legislation.

3.1 National and international requirements

The policies, legislation and guidelines relating to the stakeholder engagement process are outlined below:

3.1.1 National requirements

The stakeholder engagement process will adhere to the following national legislation related to public consultation:

- Environmental Protection Agency Act, 1994 (Act 490); this act provides a legal framework for the sustainable development, management, and protection of the environment by the EPA; and

¹ (International Finance Corporations, 2012)

- Environmental Assessment Regulation, 1999 (LI 1652):

Section 5 (1) of LI 1652, states the importance of public consultation in the decision-making process:

“The Agency shall on receipt of an application and any other relevant information required, as an initial assessment, screen the application taking into consideration (c) the concerns of the public, if any, and in particular concerns of immediate residents, if any;”

The section also states public consultation in the review of the Environmental Impact Study (EIS) and enjoins the developer to:

- a) give notice of the proposed undertaking to the relevant Ministries, government departments and organisations and the relevant Metropolitan, Municipal or District Assembly;*
- b) advertise in at least one national newspaper and a newspaper, of any circulating in the locality where the proposed undertaking is to be situated; and*
- c) make available for inspection by the public in the locality of the proposed undertaking, copies of the scoping report.*

3.2 International requirements

International principles and guidelines that have been considered in the formulation of this stakeholder engagement report are provided in the following sub-sections.

3.2.1 Development Bank of Southern Africa Environmental and Social Safeguard Standards (2018)

The DBSA provides a set of environmental and social standards for its clients in managing project environmental and social risks and impacts and enhancing project environmental and social performance.

There are eight standards, namely:

- **Standard 1:** General Overview: Assessment and Management of Environmental and Social Risks and Impacts
- **Standard 2:** Stakeholder Engagement and Information Disclosure
- **Standard 3:** Gender Mainstreaming
- **Standard 4:** Indigenous Peoples
- **Standard 5:** Land Acquisition, Restrictions on Land Use, and Involuntary Resettlement
- **Standard 6:** Labour
- **Standard 7:** Community Health and Safety
- **Standard 8:** Cultural Heritage

3.3 Gender policies

GEGL is committed to building and maintaining good relationships with its communities based on mutual respect and recognising each other's rights. GEGL has also adopted the DBSA Standards as part of this pipeline project. The public consultation process that forms part of the impact assessment process was tailored to satisfy the DBSA stakeholder engagement standards. Additionally, GEGL will maintain its formalised community consultation structures and grievance mechanisms that have been established and made accessible to the community for the duration of the project.

According to GEGL's Health, Safety and Environment Policy Statement, the company prioritises health, safety, and environmental management. This commitment includes conserving the environment and natural resources and protecting the health and safety of employees, contractors, customers, and communities within which GEGL operates. GEGL is also committed to adhere to local and international laws, regulations, and relevant industry practices.

4.0 STAKEHOLDER ENGAGEMENT PROCESS

An EIA process entails three phases, namely the:

- **Scoping Study** – the scoping study phase entails initial field and baseline data reviews and early stakeholder engagement to define the scope of the EIA.
- **Terms of Reference (ToR)** – during this phase, the framework and proposed methodology for assessing environmental and social impacts are developed. The ToR phase includes a project presentation, proposed EIA update process and the stakeholder engagement process.
- **Environmental Impact Study (EIS)** entails an impact assessment and addressing the issues raised during the ToR phase. A draft EIS report will be developed and presented to the public for review and discussion. The EIS is then finalised and submitted to the EPA for approval (the decision-making phase).

4.1 Objectives

The stakeholder engagement process has been designed to consult with interested and affected parties throughout the EIA process. This approach provides organisations and individuals with an opportunity to raise concerns and make comments and suggestions regarding the proposed project.

The process was conducted in combinations of Twi and English. The stakeholder engagement process provided sufficient and accessible information to stakeholders so that they could:

- Understand the context of the EIA process.
- Become informed and educated about the proposed project and its potential impacts.
- Identify issues of concern, make suggestions for enhanced benefits and comment on alternatives.
- Contribute local knowledge and experience.
- Verify that their comments, issues of concern and suggestions have been captured and considered for the ToR for the impact assessment.

4.2 Approach and methodology

The approach and methodology applied to the public consultation process were influenced by the need to ensure broader stakeholder participation, reliability and validity of data collected. Genser is committed to engaging with stakeholders in decision-making processes, improving communication, sharing information, and obtaining views and feedback to enhance consultation and decision-making.

The methodology employed during the public consultation process included the following:

- All the engagements were in key informant (face-to-face) and focus group discussions.
- The meetings were conducted in Twi and English and were documented (photos - Figure 2, completion of attendance registers and note-taking).
- Meetings were held at venues easily accessible to stakeholders.

- The project was introduced to stakeholders using a map displaying the pipeline route and the surrounding communities.
- Comments and issues raised were captured and minutes recorded. The minutes of the stakeholder meetings were provided to Golder.

4.3 Development of a stakeholder database

A stakeholder database was developed comprising a list of stakeholders representing various sectors of society, namely those who live in proximity of the project area and directly affected stakeholders. The involvement of the following clusters or organisations in the stakeholder engagement process was considered of key importance:

- Traditional and religious authorities
- Women and farmers
- Local communities likely to be directly affected by the project

4.4 Methods of engagement

4.4.1 Notification

Due to the remote nature of most of the communities, the best approach to reaching them was via telephone calls to their community representatives and community leadership structures.

4.4.2 Invitations and presentation

Invitations were extended through the regional government and community representatives. The invitation request was done through letters and followed up by telephone. Mobilisation requests were made progressively as the meetings were conducted from one area to the next.

4.5 Stakeholder engagement

A total of 5 meetings were held and attended by approximately 55 participants. These included affected persons and farmers, traditional leaders, and the municipal assembly. This document records the issues and concerns, questions and suggestions raised by stakeholders during the public consultations from 17 October 2021 to 30 November 2021 (Table 1). Photos of some of the stakeholder engagements conducted are presented in Figure 1 **Error! Reference source not found.**

Table 1: Stakeholder Engagement List

Date	Group Engaged	Venue	No of Participants
17 October 2021	Nana Bintu (PAP)	Nana Bintu's Residence	2
19 October 2021	Project Affected Persons (PAPs)	Nana Bintu's Residence	33
28 October 2021	Prestea Police Commander	Prestea Police Station	1
29 October 2021	Fire Commander	Prestea Fire Station	1

Date	Group Engaged	Venue	No of Participants
09 November 2021	Leaders of Brumase Community	Community Centre	7
30 November 2021	Prestea-Huni Valley Municipal Assembly	Prestea-Huni-Valley Assembly	11
TOTAL No. of Participants			55



Engagement with Nana Bintu – 17.10.2021



Engagement with affected farmers – 19.10.2021



Engagement with leaders of Brumase Community – 09.11.2021



Engagement with Prestea-Huni Valley Municipal Assembly – 30.11.2021

Figure 1: Photos of Stakeholder Engagements

The consultation process identified a range of potential social, environmental, and economic impacts and benefits of the project. Even though feedback varied from each stakeholder group, some consistent themes emerged. A summary of the comments raised by the stakeholders is presented in the following sections:

4.6 Summary of key issues, concerns, and comments submitted during the stakeholder engagement process

Among the concerns raised by stakeholders, most of the issues were linked to compensation and employment and training. Stakeholders, however, did not object to the new project.

The issues and concerns raised during the various meetings were noted and are included in the Comments and Response Report APPENDIX A). Please refer to APPENDIX B for the minutes of the meetings and attendance register. The key issues were grouped in the following themes:

- **Employment and training:** Stakeholders including PAPs wanted to know the available employment opportunities associated with the project and whether training would be provided to the PAPs to enable them to qualify for employment.
- **Compensation:** The stakeholders from the municipal assembly urged GEGL to pay all compensations through their residence representatives promptly. PAPs also inquired about the crop rates which would be used and whether affected buildings would be compensated.
- **The benefit of the liquefaction facility to the community:** Stakeholders from Brumase and PAPs wanted to know the project's benefits to their community.
- **Public education:** The Prestea Fire Commander suggested that GEGL to increase its public education on natural gas and pipeline safety to allay any fears or concerns that people may have.

5.0 CONCLUSION

The public participation process was consistent with the objectives of the stakeholder consultation process set out in the relevant acts and regulations. Issues and aspects were documented for reference. This report shall be included in the EIS report.

Signature Page

Golder Associates Ghana Ltd.

Serge Kayembe
Stakeholder Engagement Specialist

Benjamin Asiedu
Environmental Consultant

CA-35, 031

Directors: Elizabeth Sarpey, RGM Heath, G Michau

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APPENDIX A

Comments and Response Report

Table 2: Comments and Response Register

No	Theme	Name	Designation	Comment	Response	Date
1	-	William Jabialu	District Police Commander	No comments on the GCP Project.	-	28 Oct 21
2	Compensation	Maame Yaa	Project Affected Person	Will there be scholarship packages for children of PAPs?	GEGL provides internship opportunities instead. However, providing scholarships is a subject that management will consider in future.	19 Oct 21
3	Compensation	Siedu Musah	Project Affected Person	What are the rates for the affected crops?	The Land Valuation Division (LVD) of the Lands Commission of Ghana has been tasked by the Government of Ghana to value and provide rates for every crop and property affected by the project. The LVD will provide all PAPs with the rates for all affected crops and properties before compensation is paid.	19 Oct 21
4	Compensation	Maame Yaa	Project Affected Person	Will compensations be paid before clearing begins? The company has machines on the land allocated for the project.	Compensation will be paid after crop rates are given to the PAPs. The GCP Project has not begun, and the work being currently undertaken are geotechnical activities. Compensation will be paid before clearing activities commence.	19 Oct 21
5	Compensation	Alu Azubire	Project Affected Person	There is a well that has been affected by the project. However, this well is the only water source for farmers in the remaining farms. Will the company provide us with water?	GEGL embarks on CSR projects which include providing a source of water for the project affected communities when needed, with the help of the Water Resource Commission. He stated that his concern would be recorded and addressed.	19 Oct 21
6	Compensation	Maame Yaa	Project Affected Person	Will all affected buildings such as sheds, and huts be compensated?	Yes, all affected properties have been valued, and compensations will be paid for these affected properties.	19 Oct 21

No	Theme	Name	Designation	Comment	Response	Date
7	Compensation	Bright Appiah	Project Affected Person	GEGL should provide the PAPs with the cropping rate within the shortest possible time and compensations paid to all affected persons. In a meeting with Nana Nteboa Pra IV (the Divisional Chief of Prestea-Himan Traditional Area) and Lawyer Onesimos Barimah (Genser's Legal and Compliance Manager), Lawyer Onesimos Barimah Bonsu assured us that compensations would be paid on Friday, 22nd October 2021, which we are looking forward to.	Crops rates are scheduled to be presented to PAPs by the Valuation Team on Thursday, 21 st October 2021. Compensation payment is scheduled for Friday, 22 nd October 2021.	19 Oct 21
8	Compensation	Isaac Dasmani	Municipal Chief Executive	With the Phase I pipeline project, there were several reports received from affected persons. I urge that with this liquefaction facility, Genser should ensure that all compensations due to affected persons are paid on time to help ease agitations.	The GEGL team have had numerous engagements with the persons affected by the liquefaction facility and the affected communities. Crop enumeration and valuation exercises have been completed, and all documents have been reported to the finance team, awaiting the release of compensation to be distributed to these affected persons.	30 Nov 21
9	Corporate Social Responsibility (CSR)	Mathew Kyei	Project Affected Person	With Christmas at the corner, GEGL should consider providing small packages for all PAPs to boost the company's goodwill.	Suggestion well noted. The suggestions will be channelled to management for consideration	19 Oct 21
10	CSR	Isaac Dasmani	Municipal Chief Executive	Regarding CSR, GEGL should incorporate such projects as part of its planning and budgeting stage since it plays an integral role in the development of affected communities. We are ready to provide support to GEGL in terms of permit granting and any other way.	GEGL has been embarking on CSR projects in the various project affected communities. He added that these CSR projects are launched after a needs assessment exercise has been undertaken in a particular community to identify the public needs of that specific community.	30 Nov 21
11	Employment	Ebenezer Afoakwa	Project Affected Person	Based on experience, will the company provide a Memorandum of Understanding stating that PAPs will be employed?	Therefore we are taking minutes of the meetings. A copy of the minutes will be provided to Nana Bintu and interested members present at the meeting. Employment opportunities will come in two folds, skilled labour, and unskilled	19 Oct 21

No	Theme	Name	Designation	Comment	Response	Date
					labour. All PAPs present should be prepared when such opportunities come.	
12	Employment	Mathew Kyei	Project Affected Person	The PAPs are from three different families, with all family heads present at the meeting. To provide equal employment opportunities to all affected persons, every family head should collate a list of all the affected persons in their family.	Well noted. All family heads should present the list of all affected persons to Nana Bintu	19 Oct 21
13	Employment	Abusuapanyin Kwaku Korsah	Project Affected Person	I urge all the PAPs to be decorous in dealing with employment matters and channel all their concerns to the appropriate family heads to help address them.	Thank you for the advice	19 Oct 21
14	Employment	Siedu Musah	Project Affected Person	There are affected farmers and affected farmland owners. Concerning the employment issue, what quota will be given to the farmland owners and the quota for the affected farmers?	There will be equal opportunity for all. Rather than focus on quotas, PAPs should think about being able to deliver well on the job when hired or bringing competent people who will be able to deliver.	19 Oct 21
15	Employment	Mr Isaac Yeboah	Secretary to Brumase Chief	In terms of employment, since most people do not have technical knowledge, will there be forums for training people in the community?	Employment opportunities will come in two folds: Skilled labour and unskilled labour. Equipping employees with skills and training is at the core of GEGL's culture. GEGL provides internship opportunities to affected people and those within the affected communities.	9 Nov 21

No	Theme	Name	Designation	Comment	Response	Date
16	Employment	Isaac Dasmani	Municipal Chief Executive	Genser should ensure to honour the promise of local employment because employing people from the affected communities will go a long way to reduce people's agitations. Bear in mind that local employment makes people feel included in the project, making them accept the project.	As explained in the presentation, due to the technical nature of the construction and operation of the liquefaction facility, employment in that area will be low. However, the agro project will provide job opportunities to the affected persons and the affected community.	30 Nov 21
17	Employment and Compensation	Bright Appiah	Project Affected Person	GEGL must prioritise employment opportunities and scholarship packages, as it is the greatest need of the PAPs.	Suggestion well noted. GEGL's plans are in place now and in future will do the needful in that regard.	19 Oct 21
18	Other	George Kojo Scott	Municipal Engineer	The Works Department of the Assembly will have to undertake a site visit to the land allocated for the GCP facility. We will also need copies of the site plan of the land for the facility.	GEGL will provide the department with copies of the site plan, and the team will be ready for the site visit.	30 Nov 21
19	Project Benefit	Hon. Francis Ado	Assemblyman for Ankrobra Constituency	What will the Brumase Community gain from the project?	The project will bring into the community the following benefits: Employment creation opportunities access to butane supplies to BDCs in Prestea as immense benefits that will come along with the project.	9 Nov 21
20	Project Benefit to Affected Persons	James Abbam	Project Affected Person	What is the importance of the project, and how will the PAPs benefit?	The project's needs and benefits include creating jobs with priority to PAPs. Furthermore, the GCP Project will ease the cost of transportation for local bulk distribution companies who sell domestic gas (butane) to Prestea-Himan and its environs, as they will not have to travel far to get the butane supply.	19 Oct 21
21	Project Commencement	Nana Bintu	Project Affected Person	It seems that the project has already commenced on the land allocated for the GCP Project.	The GCP Project has not begun. The works being undertaken now are geotechnical activities.	17 Oct 21

No	Theme	Name	Designation	Comment	Response	Date
22	Project Commencement	Nana Bintu	Project Affected Person	In a meeting with Nana Nteboa Pra IV (the Divisional Chief of Prestea-Himan Traditional Area) and Lawyer Onesimos Barimah (Genser's Legal and Compliance Manager), Nana Nteboa requested some items for customary rites to be performed before the project commences.	GEGL will cooperate for the appropriate customary rites to be done before the project begins	17 Oct 21
23	Project Information	Douglas Arko	Project Affected Person	Since most affected persons have relocated, we suggested that farmers should have received prior notice for engagement.	GEGL apologises for any inconvenience caused. A prior announcement for subsequent engagements will be made to avoid such inconveniences in the future.	19 Oct 21
24	Public Education	Prestea Fire Commander	Prestea Fire Commander	I suggest that Genser increases its public education on natural gas and pipeline safety, especially within the project affected communities, to kill any fear and panic that people may have in the community. We are ever ready to support Genser in carrying out these sensitisations.	Suggestion well noted	29 Oct 21
25	Public Support	Emmanuel Gyan	Municipal Coordinating Director	Thank you for the presentation and the agro project initiative as part of this project. This liquefaction facility will bring about development in the municipality. You have the full support of the assembly.	Well noted	30 Nov 21
26	Training	Douglas Arko	Project Affected Person	I suggest that GEGL equips those who will be employed with training opportunities.	Equipping employed personnel with skills and training is at the core of GEGL's culture.	19 Oct 21
27	Trust, credibility, transparency	Hon. Francis Ado	Assemblyman for Ankrobra Constituency	What is the reason for engaging the leaders of the Brumase Community since the project did not affect any farmer at Brumase?	The GCP Project will not affect any farmer at Brumase. However, given the community's proximity to the project site, it was important to engage the leaders of the Brumase community to officially introduce the project and answer key questions or concerns raised about the project.	9 Nov 21

APPENDIX B

**Engagement Minutes and
Attendance Sheet**



STAKEHOLDER ENGAGEMENT WITH PAPs FOR THE PRESTEA GAS CONDITIONING PLANT
("PRESTEA GCP") PROJECT

COMMUNITY RELATIONS
("PRESTEA GCP PROJECT")

19th October, 2021

Venue: Nana Bintu's Residence, Prestea Himan

Date: Tuesday, 19th October 2021

Time: 08:05 am

Members Present: 33

Genser Energy Ghana Limited ("GEGL")

NAME	ORGANISATION	INITIALS	DEPARTMENT/WORK
Blaise Yendemeh	Genser Energy	BY	Community Relations
Hilda Obiri-Yeboah	Genser Energy	HOY	Community Relations
Mathias Appiah	Fastlane Logistics	MA	Driver

Members Present

NAME	ORGANISATION/LOCATION	INITIALS	DEPARTMENT/WORK
Nana Bintu	Prestea-Himan	NB	Chief
Abusuapanyin Kwaku Korsah	Prestea-Himan	AKK	Abusuapanyin
Abusuapanyin Mireku Kobbinah	Prestea-Himan	AMK	Abusuapanyin
Douglas Arko	Prestea-Himan	DA	Abusuapanyin
Mary Adjei	Prestea-Himan	MA	Affected Farmer

NB: A list of all the members present at the meeting can be found in the attendance sheets via the link below:

<https://www.dropbox.com/sh/9i1h6omoap7c9cd/AABJyCMKR0C9W-CpHbmFU4g1a?dl=0>

■ **Introduction**

The Genser Energy Ghana Limited ("GEGL") Community Relations Team (CRT) held a meeting with persons affected by the "Prestea GCP" Project, to officially introduce the project and provide an update on the valuation work which was carried out some weeks prior to our meeting.

■ **Presentation of Issues**

- i. The meeting started at exactly 08:05 am, with Ebenezer Afoakwa welcoming the Genser team. He then asked for the agenda of the meeting.
- ii. Blaise introduced the "GEGL" team and outlined the agenda for the meeting. He then highlighted "GEGL's" company profile, the profile for the "Prestea GCP" Project and preliminary progress made so far.
- iii. Blaise disclosed that the presence of the "Prestea GCP" will create jobs for the people and utmost priority will be given to project-affected persons (PAPs). He again revealed that the project will ease cost of transportation for local bulk distribution companies (BDCs) who sell domestic gas (butane) to Prestea-Himan and its environs, as they will not have to travel far to get supply of butane.

iv. Blaise ended by stating that the crop valuation report has been sent to the finance team. He mentioned that the Community Relations team will distribute Form Ds and cheques to all PAPs when the cheques are ready.

QUESTIONS AND RESPONSES

v. James Abbam: What is the importance of the project and how will the PAPs benefit?

Blaise explained the need and benefits of the project and reechoed employment creation and close proximity to butane supply to BDCs in Prestea as immense benefits that will come with the project.

vi. Ebenezer Afoakwa: Based on experience, will the company provide a Memorandum of Understanding (MOU) stating that PAPs will be employed?

Blaise explained that that was one of the reasons for taking meeting minutes. He added that a copy of the minutes will be provided to Nana Bintu and interested members present at the meeting. Blaise further explained that employment opportunities will come in two folds; skilled labor and unskilled labor, and urged all PAPs present to prepare as such.

vii. Maame Yaa: Will there be scholarship packages for children of PAPs?

Blaise explained that "GEGL" provides internship opportunities rather. However, he added that providing scholarships is a subject management will consider in future.

viii. Mathew Kyei noted that the PAPs are from three different families with all family heads present at the meeting. He suggested that, in order to provide equal employment opportunities to all affected persons every family head should collate a list of all the affected persons in their family.

Blaise agreed to this and he informed all family heads to present the list of all affected persons to Nana Bintu.

ix. Douglas Arko suggested that "GEGL" equips those who will be employed with training opportunities.

Blaise emphasized that equipping employed personnel with skills and training is at the core of "GEGL's" culture.

x. Bright Appiah hammered on the need for "GEGL" to prioritize employment opportunities and scholarship packages, as it is the greatest need of PAPs.

Blaise thanked Bright Appiah and reassured him of "GEGE's" plans in place now and in future to do the needful in that regard.

xi. Abusuapanyin Kwaku Korsah urged all the PAPS to be decorous in dealing with matters of employment and advised them channel all their concerns to the appropriate family heads to help address them.

Blaise thanked Abusuapanyin Kwaku Korsah for his advice..

xii. Siedu Musah: There are affected farmers and affected farmland owners. Concerning the employment issue, what quota will be given to the farmland owners and the quota for the affected farmers? I also want to know the rate for the affected crops.

Blaise clarified that there will be equal opportunity for all. He added that rather than focus on quotas, PAPS should think about being in a position to deliver well on the job when hired or bringing competent people who will be able to deliver. To the second question, Blaise explained that the Land Valuation Division (LVD) of the Lands Commission of Ghana has been tasked by the Government of Ghana to value and provide rates for every crop and property affected by a project like this. He further explained that the LVD will provide all PAPS with the rates for all affected crops and properties before compensation is paid.

xiii. Mathew Kyei suggested that with Christmas at the corner, "GEGE" should consider providing small packages for all PAPS to boost the goodwill of the company.

Blaise stated that his suggested was noted and will be channeled to management for consideration.

xiv. Maame Yaa: Will compensations be paid before clearing begins? This is because the company has machines on the land allocated for the project.

Blaise explained that compensations will be paid after crop rates are given to the PAPS. He clarified that the "Prestea GCP" Project has not begun and that the work being undertaken now are Geotechnical activities. He assured members present that compensations will be paid before clearing activities commence.

xv. Douglas Arko: Since most affected persons have relocated, we suggested that farmers should have received prior notice for engagement.

Blaise apologized for any inconvenience caused by the company. He assured members present that, a prior announcement for subsequent engagements will be made to avoid such inconveniences in the future.

xvi. Alu Azubire: There is a well that has been affected by the project. However, this well is the only source of water for farmers in the remaining farms. Will the company provide us with water?

Blaise explained that as mentioned previously, the company embarks on CSR projects which include providing a source of water for the project-affected communities when needed, with the help of the Water Resource Commission (WRC). He stated that his concern will be recorded and addressed.

xvii. Maame Yaa: Will all affected buildings such as sheds, and huts be compensated for?

Blaise explained that all affected properties have been valued and compensations will be paid for these affected properties.

xviii. Bright Appiah urged the "GEGl" team to provide the PAPs with the crop rate within the shortest possible time and compensations paid to all affected persons. He added that during a meeting with Nana Nteboa Pra IV (the Divisional Chief of Prestea-Himan Traditional Area) and Lawyer Onesimos Barimah (Genser's Legal and Compliance Manager), Lawyer Onesimos Barimah Bonsu assured them compensations will be paid on Friday, 22nd October 2021, which they will be looking forward to.

xix. Without any further matters to discuss, the meeting was drawn to a close at exactly 09:05 am.

■ **Action Items**

- i. Crops rates is scheduled to be presented to PAPs by the Valuation Team on Thursday, 21st October 2021.
- ii. Compensation payment is scheduled for 22nd of October, 2021.
- iii. Employment opportunities and scholarship packages a core priority to PAPs.

PICTURES OF THE MEETING



Fig.1. The "GEGL" CR Team engaging the "Prestea GCP" PAPS



Fig.2. The "GEGL" CR Team engaging the "Prestea GCP" PAPS.



COMMUNITY RELATIONS

Mana Bintu's Residence

MEETING ATTENDANCE SHEET

DATE: 19/10/21

COMMUNITY: Himan

VENUE: Prestea-Himan

AGENDA: Stakeholder Engagement for the Prestea COP Project

SN	NAME	POSITION	CONTACT	SIGNATURE
1	Mana Bintu	Himan		
2	Ackon Douglas	Abusuapain/chie	0249942195	
3	Kwaku Costas	Abusuapain	0200320480	
4	Meriku Abusuapain Kobina	Affected Farmer	0234562214	
5	Simon Quason	Abusuapain	0543742410	
6	Kwame Adu	Affected Farmer	0550415291	
7	Samuel Ackon	Affected Farmer	0507533577	
			0240164971	

This is to certify that the following persons were present during the community engagement exercise for which the above Topic/Agenda was discussed.

Hilda O. Teboal

COMMUNITY RELATIONS OFFICER

SIGNATURE/THUMBPRINT

Mana Bintu

COMMUNITY LEADER

SIGNATURE/THUMBPRINT



MEETING ATTENDANCE SHEET

DATE: 19/10/21 COMMUNITY: Himans
 VENUE: Prestea Himan-Nana Bentu's Residence
 AGENDA: STAKEHOLDER ENGAGEMENT FOR PRESTEA COP PROJECT

SN	NAME	COMMUNITY	CONTACT	SIGNATURE
8	^{Afoakoo} Ebenezer Kobina	Affected Farmer	0543574271	
9	Amoah Francis	Affected Farmer	0757736976	
10	James Abbar	Affected Farmer	0207540714	
11	Alu Azubire	Affected Farmer	0247208503	
12	Asuo Kofi	Affected Farmer	✓	
13	Moro Godwin	Affected Farmer	0202599729	
14	Amoh Kojo	Affected Farmer	0249820447	

This is to certify that the following persons were present during the community engagement exercise for which the above Topic/Agenda was discussed.

Hilda O. Tebaal

Nana Bentu

COMMUNITY RELATIONS OFFICER

COMMUNITY LEADER

SIGNATURE/THUMBPRINT

SIGNATURE/THUMBPRINT



COMMUNITY RELATIONS

Mona Bintu's Residence

MEETING ATTENDANCE SHEET

DATE: 19/10/21 COMMUNITY: Himan VENUE: Prestea-Himan
STAKEHOLDER ENGAGEMENT WITH AFFECTED PERSONS FOR LERC
AGENDA: PRETEA GCP RAJEEI

SN	NAME	POSITION	CONTACT	SIGNATURE
15	Mary Adjieu	Affected Farmer	0249820447	
16	Jacob Saajae	Affected Farmer	0543154617	
17	Gideon Gideon Adedunte	Affected Farmer	0549650329	
18	Labone Moses	Affected Farmer	0595735450	
19	Razak Abdul	Affected Farmer	0241486569	
20	Ehua Duku	Affected Farmer	0248055958	
21	Yaa Maame	Affected Farmer	0507533587	

This is to certify that the following persons were present during the community engagement exercise for which the above Topic/Agenda was discussed.

Hilda O. Teboal
COMMUNITY RELATIONS OFFICER

SIGNATURE/THUMBPRINT

Mona Bintu
COMMUNITY LEADER

SIGNATURE/THUMBPRINT

MEETING ATTENDANCE SHEET

DATE: 19/10/21 COMMUNITY: Prestea-Human
 VENUE: Prestea Non Bintu Residence
 AGENDA: STAKEHOLDER ENGAGEMENT FOR THE PRESTEA GCP ROJESIS

SN	NAME	COMMUNITY	CONTACT	SIGNATURE
22	Bright Agyal	Family Committee chair	0246924233	
23	Robert Akins	Affected Farmer	0202713484	
24	Yaa Konamah	Affected Farmer	0540819165	
25	Prince Amoakoh	Affected Farmer	0592746384	
26	Matthew Kyei	Affected Farmer	0540719717	
27	Luale Samson Yattoo	Affected Farmer	0246041265	
28	Samson Anaboi	Affected Farmer	0240138441	

This is to certify that the following persons were present during the community engagement exercise for which the above Topic/Agenda was discussed.

Helda O. Teboal

Mana Bentu

COMMUNITY RELATIONS OFFICER

COMMUNITY LEADER




SIGNATURE/THUMBPRINT

SIGNATURE/THUMBPRINT



MEETING ATTENDANCE SHEET

DATE: 19/10/21 COMMUNITY: Himan

VENUE: Prestea-Himan Nana Benbu's Residence

AGENDA: STAKEHOLDER ENGAGEMENT (Affected persons) CEPR project

SN	NAME	COMMUNITY	CONTACT	SIGNATURE
29	Yusfi Syidu	Affected Farmer	0245771449	
30	Abera Adu	Affected Farmer		

This is to certify that the following persons were present during the community engagement exercise for which the above Topic/Agenda was discussed.

Hilda O. Teboal

COMMUNITY RELATIONS OFFICER

SIGNATURE/THUMBPRINT

Nana Bentu

COMMUNITY LEADER

SIGNATURE/THUMBPRINT



STAKEHOLDER ENGAGEMENT WITH THE PRESTEA POLICE COMMANDER FOR THE PRESTEA GAS CONDITIONING PLANT (“PRESTEA GCP”) PROJECT

**COMMUNITY RELATIONS
 (“PRESTEA GCP PROJECT”)**

28th October, 2021

Venue: Prestea Police Station

Date: Thursday, 28th October 2021

Time: 12:30 pm

Members Present: 3

Genser Energy Ghana Limited (“GEGL”)

NAME	ORGANISATION	INITIALS	DEPARTMENT/WORK
Blaise Yendemeh	Genser Energy	BY	Community Relations
Hilda Obiri-Yeboah	Genser Energy	HOY	Community Relations

Members Present

NAME	ORGANISATION/LOCATION	INITIALS	DEPARTMENT/WORK
William Jabialu	Prestea District Police Station		District Police Commander

▪ Introduction

The Genser Energy Ghana Limited (“GEGL”) Community Relations Team (CRT) held a meeting with the Prestea District Police Commander, to officially introduce the “Prestea GCP” Project and update him on the increasing menace of galamsey activities along GEGL’s Phase One and Phase Two Natural Gas Pipeline Projects.

▪ Presentation of Issues

- i. The meeting started at exactly 12:30 pm
- ii. Blaise introduced the GEGL team and outlined the agenda for the meeting. He then highlighted GEGL’s company profile, the profile for the “Prestea GCP” Project, and preliminary progress made so far on the GCP Project.
- iii. Blaise stated that “GEGL” has a combined pipeline network of 320km. He explained that GEGL’s Phase One Pipeline stretches 80km from Prestea to Tarkwa and Tarkwa to Damang, whereas the Phase Two Project spans 240 km stretching from Prestea to Dawusaso, which a branch pipeline to Chirano.
- iv. The Police Commander asked how he could be of help to GEGL.
- v. Blaise stated that per the company’s protocols, it is necessary to identify key stakeholders and engage them about the project, and since the project will be in Himan, it was imperative to officially inform the Prestea District Police about the “Prestea GCP”.
- vi. Blaise then reiterated the growing concerns of encroachment of GEGL’s Phase One and Two Pipelines by illegal miners. In this regard, he stated that “GEGL” will need the assistance of the Police in terms of regular ROW patrolling to deter these “galamseyers” from working close to the pipeline and passing earth-moving equipment across the pipeline ROW.

- vii. The Police Commander agreed with Blaise and stated that his outfit is currently ill-equipped with the needed logistics to patrol the ROW. He added that two out of the three vehicles assigned to the Police Station are broken down and immotorable. He mentioned however that GEGL could help fix at least one of the two faulty vehicles as part of efforts to make the ROW patrol possible.
- viii. In addition, the commander suggested we join hands to set up a Police Rapid Deployment Team who will provide quick response to reports of any foul activity on or near the pipeline ROW. As such, he proposed that GEGL will provide his men six (6) Jungle Motors which will make quick response and patrolling the ROW effective.
- ix. Lastly, the commander suggested GEGL engages community liaison officers (CLOs) to patrol the pipeline ROW and provide daily reports to GEGL.
- x. As part of security protocol, our phones were taken before we entered the commander’s office for the meeting. So, no pictures were taken.
- xi. Blaise thanked the commander and reassured him that the proceedings of the meeting will be relayed to management.
- xii. Without any further matters to discuss, the meeting was drawn to a close at exactly 01:05 pm and upon the commander’s request, he went to inspect portions of the pipeline route.

■ Action Items

- i. The need for GEGL to engage CLOs to patrol the pipeline ROW and provide daily reports to GEGL.
- ii. The need to set up a Police Rapid Deployment Team who will provide quick response to reports of any foul activity on or near the pipeline ROW and provide routine surveillance on the pipeline ROW.
- iii. GEGL to consider providing the yet-to-be Rapid Deployment Team with six (6) jungle motors to patrol the ROW and provide routine security surveillance.
- iv. GEGL to help fix two faulty Police vehicles at the Prestea District Police Station.



**STAKEHOLDER ENGAGEMENT WITH THE PRESTEA POLICE COMMANDER FOR THE PRESTEA GAS
CONDITIONING PLANT ("PRESTEA GCP") PROJECT**

COMMUNITY RELATIONS
("PRESTEA GCP PROJECT")

28th October, 2021



**STAKEHOLDER ENGAGEMENT WITH THE PRESTEA FIRE COMMANDER FOR THE PRESTEA GAS
CONDITIONING PLANT (“PRESTEA GCP”) PROJECT**

**COMMUNITY RELATIONS
 (“PRESTEA GCP PROJECT”)**

29th October, 2021

Venue: Prestea Fire Station

Date: Thursday, 29th October 2021

Time: 11:00 am

Members Present: 3

Genser Energy Ghana Limited (“GEGL”)

NAME	ORGANISATION	INITIALS	DEPARTMENT/WORK
Blaise Yendemeh	Genser Energy	BY	Community Relations
Hilda Obiri-Yeboah	Genser Energy	HOY	Community Relations

Members Present

NAME	ORGANISATION/LOCATION	INITIALS	DEPARTMENT/WORK
Daniel Aklibosu	Prestea Divisional Fire Station		Assistant Divisional Fire Commander I

■ **Introduction**

The Genser Energy Ghana Limited (“GEGL”) Community Relations Team (CRT) held a meeting with a representative of the Prestea Divisional Fire Commander, to officially introduce the “Prestea GCP” Project and update him on the increasing menace of galamsey activities along GEGL’s Phase One and Phase Two Natural Gas Pipeline Projects.

■ **Presentation of Issues**

- i. The meeting started at exactly 11:00 am.
- ii. Blaise introduced the GEGL team and outlined the agenda for the meeting. He then highlighted GEGL’s company profile, the profile for the “Prestea GCP” Project, and preliminary progress made so far on the GCP Project.
- iii. Blaise stated that “GEGL” has a combined pipeline network of 320km. He explained that GEGL’s Phase One Pipeline stretches 80km from Prestea to Tarkwa and Tarkwa to Damang, whereas the Phase Two Project spans 240 km stretching from Prestea to Dawusaso, which a branch pipeline to Chirano.
- iv. The assistant commander mentioned that the commander was not around but asked how he could be of help to GEGL.
- v. Blaise stated that per the company’s protocols, it is necessary to identify key stakeholders and engage them about the project, and since the project will be in Himan, it was imperative to officially inform the Prestea Divisional Fire Command about the “Prestea GCP”.
- vi. Blaise then reiterated the growing concerns of encroachment of GEGL’s Phase One and Two Pipelines by illegal miners and the risks it poses to the pipeline. In this regard, he stated that “GEGL” will need the assistance of the to be alert for us, in case we need their service. The Assistant Commanded assured his support for Genser.



**STAKEHOLDER ENGAGEMENT WITH THE PRESTEA FIRE COMMANDER FOR THE PRESTEA GAS
CONDITIONING PLANT ("PRESTEA GCP") PROJECT**

**COMMUNITY RELATIONS
("PRESTEA GCP PROJECT")**

29th October, 2021

- vii. Lastly, the Fire Commander advised Genser to increase public education on natural gas and pipeline safety especially to project affected communities to kill any fear and panic that some people may have in the community. He said his outfit is ever ready to join hands with Genser to carry out such sensitizations.
- viii. Blaise thanked the commander for his time.
- ix. Without any further matters to discuss, the meeting was drawn to a close around 12:05 pm and upon the commander's request, he went to inspect portions of the pipeline route.

■ **Action Items**

- i. The need for GEGL to engage CLOs to patrol the pipeline ROW and provide daily reports to GEGL.
- ii. GEGL to join hands with the Fire Service to increase public awareness on natural gas and pipeline safety.



**STAKEHOLDER ENGAGEMENT WITH THE PRESTEA-HUNI VALLEY ASSEMBLY FOR THE
PRESTEA LIQUEFACTION FACILITY**

COMMUNITY RELATIONS

30th November, 2021

Venue: Prestea Huni-Valley Assembly

Date: Tuesday, 30th November 2021

Time: 01:40 pm

Members Present: 15

Genser Energy Ghana Limited (“GEGL”)

NAME	ORGANISATION	INITIALS	DEPARTMENT/WORK
Michael Smith	Genser Energy	MS	Community Relations
Solomon Asare	Genser Energy	SA	Community Relations
Blaise Yendemeh	Genser Energy	BY	Community Relations
Hilda Obiri-Yeboah	Genser Energy	HOY	Community Relations

Members Present

NAME	ORGANISATION/LOCATION	INITIALS	DEPARTMENT/WORK
Hon. Isaac Dasmani	Prestea-Huni Valley Municipal Assembly		Municipal Chief Executive
Emmanuel Gyan	Prestea-Huni Valley Municipal Assembly	EG	Municipal Coordinating Director
Patrick Atubiga	Prestea-Huni Valley Municipal Assembly	PA	Social Welfare Officer
Juliet Opoku	Prestea-Huni Valley Municipal Assembly	JO	Intern at Audit Unit
George Kojo Scott	Prestea-Huni Valley Municipal Assembly	GKS	Municipal Engineer
Osei-Mensah	Prestea-Huni Valley Municipal Assembly	OM	Municipal Physical Planning Officer
Stephen Kwabena Dankwaah	Prestea-Huni Valley Municipal Assembly	SKD	Municipal Budget Analyst
Amoah K. Edward	Prestea-Huni Valley Municipal Assembly	AKE	Assistant Director One (ADI)
Raymond Aevorh	Prestea-Huni Valley Municipal Assembly	RA	Municipal Environmental & Health Officer (MEHO)
Esther Selorm Agbebli	Prestea-Huni Valley Municipal Assembly	ESA	Accounts

NB: A list of all the members present at the meeting can be found in the attendance sheets via the link below:

■ **Introduction**

The Genser Energy Ghana Limited (“GEGL”) Community Relations Team (CRT) held a meeting with the Prestea-Huni Valley Municipal Assembly on the “Prestea Liquefaction Facility, to officially introduce the project, provide an update on the activities carried out so far, and answer key questions about the project.

■ Presentation of Issues

- i. The meeting started at exactly 01:40 pm, with a prayer by George Kojo Scott.
- ii. After the introduction of members present, Emmanuel Gyan, the Municipal Coordinating Director (MCD) asked for the agenda of the meeting.
- iii. Blaise thanked members present for honoring the invitation. He went ahead to state the agenda for the meeting which is the introduction of the Prestea Liquefaction Facility to the Assembly. He went on to present an overview of the operations and projects embarked by “GEGL” to date. He mentioned that Genser Energy is an Independent Power Producer that specializes in the construction of a natural gas pipeline, and power plants for the energy needs of industries, particularly mining companies in Ghana. He continued that Genser has an existing pipeline of about 320km from the company’s Phase I and Phase II Pipeline Project. He stated that following the Government of Ghana’s decision to relocate the Ameri Power Plant from Takoradi to Kumasi, precisely Ahomaso, the Ministry of Energy tasked “GEGL” to construct a 102km pipeline network from Dawusaso to Ahomaso to provide the Ameri Power Plant with natural gas. He explained that with regards to the Liquefaction Facility Genser will receive raw gas from GNPC where this raw gas will be conditioned and processed into different gasses, that is butane for domestic use, ethane, and propane for industrialization and export. He added that the location for the Liquefaction Facility is within the Prestea-Huni Valley Municipality making the Assembly a key stakeholder hence the need for the “GEGL” team to engage the assembly to introduce the project, request for their support, and answer key questions about the project.
- iv. Blaise after his brief introduction handed over to Michael Smith for a detailed presentation regarding “GEGL’s operations and the Prestea Liquefaction Facility.
- v. Michael informed members present that “GEGL” has a total natural gas pipeline of approximately 340km, of which 80km was constructed during the Prestea-Tarkwa-Damang Phase I project, completed in 2018. Phase II of the project saw a 21km pipeline extension from Damang to Wassa- Akyempim, commissioned in October 2020, and construction of a 240km pipeline network from Prestea-Manso Amenfi-Amoanda-Humjibre-Chirano-Dawusaso-Edikan, commissioned in June 2021. He added that “GEGL” has 5 power plants: Goldfields Tarkwa and Damang, Goldern Star Akyempim, Edikan Perseus Mines, and Kinross Chirano. He added that as mentioned by Blaise, “GEGL” have been tasked by the Government of Ghana to construct a natural gas pipeline network of approximately 102km from the company’s existing pipeline at Dawusaso to Ahomaso to provide natural gas for the Ameri Power Plant. He went ahead to state that this will reduce the pressure on the natural grid.
- vi. Michael explained that for the Liquefaction Facility, “GEGL” is acquiring a total land size of 247 acres. He continued that, the Liquefaction facility will cover a land size of a little over 100 acres. He mentioned the remaining land will serve as a buffer to protect the facility and also be used for the company’s planned alternative livelihood initiative where the crops on the land will be used for a large-scale agricultural project termed the agro project. He further explained that due to the

technical nature of the construction and operation of the Liquefaction Facility, employment in that area will be on the low. He explained that the agro product on the other hand will provide enough job opportunities to the affected persons and the affected community since it will be mainly farming works.

- vii. Michael explained that with the Liquefaction Facility “GEGL” will receive raw gas from GNPC and store the gas. He added that this raw gas will be processed; compressed into liquid form and processed into butane, ethane, and propane. He mentioned that the butane will be sold to the local market, the ethane will be exported to other counties and the propane will be used for industrialization. He mentioned that in an instance where there is a shortage of natural gas from GNPC, the propane will be ejected into “GEGL” pipeline. He ended by mentioning that “GEGL” will need the support of the assembly in terms of permits acquisition and helping to resolve agitations from project-affected persons and communities.
- viii. Emmanuel Gyan, the Municipal Coordinating Director, thanked the “GEGL” team for the detailed presentation. He also thanked “GEGL” for this initiative since he believed the facility will bring about development in the municipality. He added that “GEGL” has the full support of the Assembly. He then went ahead to call on the Municipal Chief Executive (MCE) to give his remarks.
- ix. The MCE also thanked the “GEGL” team for the detailed explanation. He stated that the project will bring about development since the provision of job opportunities to the people in the municipality will go a long way to improve their standard of living. He added that however, regarding the Phase I Pipeline Project which traverses communities within the municipality, the assembly received numerous reports from the project-affected persons. He pleaded that, with the Liquefaction Facility, “GEGL” should ensure that all compensations due to every affected person are paid to help reduce agitations from the affected communities and persons. He mentioned that “GEGL” should ensure to honor the promise of local employment. He explained that employing people from the affected communities will go a long way to reduce agitations from the people. He further explained local employment makes the people feel they are included in the project which will make them accept the project, hence reduction in distraction and agitations from the affected communities.
- x. The MCE also spoke about Corporate Social Responsibility (CSR) Projects. He mentioned that “GEGL” should incorporate these during the planning and budgeting stage of the company since it plays an integral part in the development of affected communities. He ended that, that aside, his office is ready to provide support to “GEGL” in terms of permit granting and many more. He added “GEGL” should not hesitate to inform his office of all challenges faced by the company which will need the assistance of the office.
- xi. Michael thanked the MCE for this. He went on to inform members present that, the “GEGL” team have had numerous engagement with the persons affected by the Liquefaction Facility and the affected communities. He added crop enumeration and valuation exercises have been completed and all documents have been reported to the company’s finance team awaiting the release of compensation to be distributed to these project-affected persons.

- xii. Michael mentioned that “GEGL” has been embarking on CSR Projects in the various project-affected communities. He added that these CSR Projects are embarked on after a needs assessment exercise has been undertaken in a particular community to identify the public needs of that particular community.
- xiii.MCE mentioned that on the issue of CSR projects, his office will have another meeting to discuss and recommend appropriate measures to put in place.
- xiv. George Kojo Scott mentioned that regarding the Building and Construction permit, the Works Department of the Assembly will have to undertake a site visit to the land allocated for the Liquefaction facility. He added the department will also need copies of the site plan of the land for the facility.
- xv.Michael mentioned that the “GEGL’ team will provide the department with copies of the site plan and the team will be ready for the site visit.
- xvi. Without any further matters to discuss, the meeting was drawn to a close at exactly 02:20 pm with a prayer by George Kojo Scott.

▪ Action Items

- i. The MCE on behalf of the entire assembly granted their support to the project.
- ii. The “GEGL” team should provide the Works Department with copies of the site plan.
- iii. Another meeting will be scheduled to discuss CSR projects.

PICTURES OF THE MEETING





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