Arctic LNG 2 Project

GREENHOUSE GASES AND ENERGY EFFICIENCY MANAGEMENT PLAN

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ACRONYMS AND ABBREVIATIONS

ALNG2	Arctic LNG 2, LLC
BAT	Best Available Technique
BAT-AEEL	Best Available Techniques – associated energy efficiency levels
BOE	Barrels of Oil Equivalent
CCGT	Combined Cycle Gas Turbine
CGTP	Complex Gas Treatment Plant
ECA	Export Credit Agency
EDPS	Emergency Diesel Power Station
EE	Energy Efficiency
EIA	Environmental Impact Assessment
EP4	Equator Principles 4
ESAP	Environmental and Social Action Plan
ESHIA	Environmental, Socio-Economic and Human Health Impact Assessment
EU	European Union
GBS	Gravity-based structure
GHG	Greenhouse gases
GTPP	Gas-Turbine Power Plant
IFC	International Finance Corporation
IFI	International Finance Institution
IPCC	Intergovernmental Panel on Climate Change
ISO	International Organization for Standardization
LLC	Limited Liability Company
LNG	Liquefied natural gas
MDO	Marine Diesel Oil
OECD	Organisation for Economic Cooperation and Development
OGCF	Oil, gas, and condensate field
PAES	Mobile automated gas turbine power plant
PGTP	Preliminary Gas Treatment Plant
PJSC	Public Joint Stock Company
PS	Performance Standards
RF	Russian Federation
SGC	Stabilised gas condensate
TOE	Tonne of Oil Equivalent
UN	United Nations
UNEP	The United Nations Environment Programme
WBCSD	World Business Council for Sustainable Development
WRI	World Resources Institute
WWTP	Wastewater Treatment Plant
YNAO	Yamal-Nenets Autonomous Okrug

1 INTRODUCTION

1.1 The Arctic LNG 2 commitment

Arctic LNG 2 is aware of potential of greenhouse gases (GHG) impacting the environment on a global scale through their contribution to the climate change and is committed to actively promoting the reduction of GHGs across its operations in a safe, technically and commercially viable manner.

Arctic LNG 2 confirms its full responsibility in managing GHG emissions of the Arctic LNG 2 Project, including identification, accounting and reporting, monitoring and control, prevention and minimization of the Project carbon footprint and increase of the Project energy efficiency. For this purpose, two guiding documents have been developed and will be implemented in the framework of the Project implementation, including the GHG and Energy Efficiency Philosophy and this GHG and Energy Efficiency Management Plan (GHG & EE MP).

The Greenhouse Gases and Energy Efficiency Philosophy is an overarching document setting out an overall strategy in respect to greenhouse gases and energy efficiency (EE) management in the framework of the Arctic LNG 2 Project, its key principles and objectives as well as the approach to achieve them, and describing high-level prevention, minimization, mitigation, monitoring and control decisions and measures. The Philosophy provides an understanding of the applicable requirements and benchmarks for assessment of the respective Project performance.

1.2 Purpose of the document

This GHG & EE MP is a comprehensive document describing the overall approach to GHG and energy efficiency (EE) management in the Project framework including roles and responsibilities, a complete set of mitigation and monitoring measures and key performance indicators, providing knowledge on applicable standards and reporting requirements as well as providing the current understanding of the Project GHG emissions.

1.3 Area of application

This GHG & EE MP provides a tool for managing GHG and EE issues and mitigation of associated impacts in all components of the Arctic LNG 2 Project[1] in a consistent way. The GHG & EE MP considers the full Project lifetime including planning, design, construction, commissioning and transition phase, operation, as well as decommissioning in the future.

The GHG & EE MP is an integral part of the documentation of the Integrated Management System of Arctic LNG 2, LLC. The GHG & EE MP is a live document which is to be developed over time along with the progress in the Project implementation and following any updates in rapidly developing international and national regulatory requirements.

This GHG & EE MP is suitable for consideration and potential adoption by operators of the associated facilities and activities where applicable, providing an appropriate framework for sustainable management of GHG issues in compliance with the current standards and best practices.

1.4 Document structure

The GHG & EE MP is structured as follows:

- Section 1 provides introductory information;
- Section 2 identifies in brief the regulatory requirements applicable to the Project;
- Section 3 contains a brief description of the Project;
- Section 4 presents the approach and outcomes of the Project carbon footprint assessment, including the alternatives analysis and overview of GHG emissions sources;
- Section 5 defines the key design adopted by the Project aimed at the impact prevention;

[1] The term "Project" includes the facilities owned and operated by Arct c LNG 2 as defined in Section 3.

- Section 6 includes the Arctic LNG 2 monitoring measures in respect to the GHG emissions and energy efficiency at the construction and operation stage and advises on key performance indicators to be used in the Project to monitor the GHG and EE performance;
- Section 7 determines the international and national requirements and the Project approach to reporting on GHG emissions and energy efficiency;
- Section 8 is devoted to requirements on relevant training and awareness.

2 APPLICABLE REGULATIONS AND STANDARDS

The worldwide approach to climate change mitigation and trend on regulating GHG emissions are described in Section 2 of GHG and EE Philosophy.

2.1 International financial institutions requirements

The international financial institutions (IFI) fully recognize the importance of minimizing GHG emissions. Therefore, their covenants for project loan funding include requirements to apply best available techniques, as well comprehensive GHG assessment and public reporting requirements (Equator Principles 4, 2020; IFC Policy on Environmental and Social Sustainability, 2012).

2.1.1 Equator Principles

The Equator Principles (EP) are ten environmental and social standards to be adhered to in case of project financing by the Equator Principles Financial Institutions. The latest iteration of EP (EP4) came into effect on 1 October 2020 [2] and is supported by a suite of Guidance, including The Equator Principles Implementation Note[3] and Guidance note on Climate Change Risk Assessment[4].

In line with Principle 2: *Environmental and Social Assessment* a climate change risk assessment (CCRA) is required to be undertaken for Category A projects and, as appropriate, Category B projects. For the projects with direct and indirect GHG emissions over 100,000 t CO_2-equivalent per year, CCRA must also include a completed alternatives analysis which evaluates lower GHG intensive alternatives.

The Principle 10: *Reporting and Transparency* requires public annual reporting on GHG emission level (combined Scope 1[5] and Scope 2[6] emissions, and specific emission rate per unit of product, if applicable) during the operational phase for Projects emitting over 100,000 t CO_2-equivalent per year.

The implementation requirements are detailed in Annex A: Climate Change: Alternative Analysis, Quantification and Reporting of Greenhouse Gas Emissions.

GHG emissions shall be calculated in line with the GHG Protocol (see Section 4.2.2 for details) to allow for aggregation and comparability across Projects, organisations and jurisdictions. Clients may use national reporting methodologies if they are consistent with the GHG Protocol.

2.1.2 IFC Environmental and Social Framework and Performance Standards

In accordance with IFC Environmental and Social Sustainability Policy, the planned investments shall be assessed using Environmental and Social Performance Standards (PS). The current Environmental and Social Sustainability Policy and Performance Standards of the IFC were published in April 2012.[7].

According to PS 3 *Resource Efficiency and Pollution Prevention*, for projects that are expected to produce more than 25,000 tonnes of CO_2-equivalent annually, the client will quantify direct emissions from the facilities owned or controlled within the physical Project boundary, as well as indirect emissions associated with the off-site production of energy used by the Project. Quantification of GHG emissions shall be conducted annually in accordance with internationally recognised methodologies and good practice[8].

2.1.3 OECD Corporate GHG Reporting

Export Credit Agencies (ECAs) of OECD-member countries apply the Recommendation of the Council on Common Approaches for Officially Supported Export Credits and Environmental and Social Due Diligence (the Common Approaches) revised in 2016[9].

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[2] https://equator-principles.com/wp-content/uploads/2020/05/The-Equator-Principles-July-2020-v2.pdf

[3] https://equator-principles.com/wp-content/uploads/2020/09/Implementation_Note_Ext_Sept_2020.pdf

[4] https://equator-principles.com/wp-content/uploads/2020/09/CCRA_Guidance_Note_Ext_Sept_2020.pdf

[5] Scope 1 Emissions are direct GHG emissions from the facilities owned or controlled within the physical Project boundary

[6] Scope 2 Emissions are indirect GHG emissions associated with the off-site production of energy used by the Project

[7] https://www.ifc.org/wps/wcm/connect/24e6bfc3-5de3-444d-be9b-226188c95454/PS_English_2012_Full-Document.pdf?MOD=AJPERES&CVID=jkV-X6h

[8] Estimation methodologies are prov ded by the Intergovernmental Panel on Climate Change, various internat onal organizations, and relevant host country agencies.

[9] http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?doclanguage=en&cote=tad/ecg(2016)3

The Common Approaches requires to report:

- the estimated annual greenhouse gas emissions from all fossil-fuel power plant projects;
- the estimated annual greenhouse gas emissions from other projects, where such emissions are projected to be in excess of 25,000 tonnes CO_2-equivalent annually.

In this context, where relevant and feasible, Adherents shall try to obtain and to report the estimated annual direct and indirect (Scope 1 and Scope 2) greenhouse gas emissions in CO_2-equivalent and/or the estimated annual direct greenhouse gas emissions (Scope 1) by carbon intensity (e.g. in g/kWh) for the six greenhouse gases to be generated during the operations phase of the project.

OECD Working Papers on International Investments on corporate greenhouse gas emission reporting[10] provides an overview of current government schemes promoting corporate reporting on greenhouse gas (GHG) emissions and analyses their main components. It refers that the use of scope 1, 2, 3 to classify emissions as defined by the GHG Protocol has become common language and practice today. Standard measurement methodologies (such as the GHG Protocol and ISO 14064) have also emerged and act as referenced methodologies today.

2.1.4 World Bank/IFC EHS Guidelines

The World Bank / IFC Environmental, Health, and Safety (EHS) Guidelines[11] are technical reference documents with general and industry-specific examples of Good International Industry Practice (GIIP), as defined in IFC Performance Standard 3 on Resource Efficiency and Pollution Prevention. The EHS Guidelines contain the performance levels and measures that are normally acceptable to the IFC and are generally considered to be achievable in new facilities at reasonable costs using existing technology.

The following IFC guidelines are relevant to the Project activities:

- General EHS guidelines (April 2007);
- EHS Guidelines for Liquefied Natural Gas (LNG) Facilities (April 2017);
- EHS Guidelines for Onshore Oil and Gas Development (April 2007);
- EHS Guidelines for Offshore Oil and Gas Development (June 2015);
- EHS Guidelines for Thermal Power Plants (December 2008);
- EHS Guidelines for Ports, Harbors, and Terminals (February 2017);
- EHS Guidelines for Crude Oil and Petroleum Product Terminals (April 2007);
- EHS Guidelines for Waste Management Facilities (December 2007);
- EHS Guidelines for Water and Sanitation (December 2007);
- EHS Guidelines for Shipping (April 2007).

The General EHS Guidelines contain recommendations for reduction and control of greenhouse gases and enhancement of energy efficiency potentially applicable to all industry sectors. The relevant industry sector specific guidelines provide a general recommendation that technically feasible and cost-effective attempts should be made to optimize energy efficiency and design facilities to reduce energy use with an overall objective of reducing air emissions. These requirements are considered more closely in GHG and EE Philosophy.

2.2 National requirements

2.2.1 GHG accounting and reporting

At present the state regulation of GHG emissions is based on the principle of voluntary emissions inventory to be prepared by the constituent entities of the Russian Federation.

In late December 2019 the Russian government approved a national plan (RF Government Order No. 3183-r[12]) of 29 broad measures that encompass institutional, organizational and methodological measures aimed

[10] Kauffmann, C., C. Tébar Less and D. Teichmann (2012), "Corporate Greenhouse Gas Emission Reporting: A Stocktaking of Government Schemes", OECD Working Papers on International Investment, 2012/01, OECD Publishing. https://www.oecd.org/daf/inv/investment-policy/WP-2012_1.pdf

[11] https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/pol cies-standards/ehs-guidelines

[12] RF Government Order "On approval of the national plan of the first stage of climate change adaptat on for the per od until 2022" of 25.12.2019 No. 3183-r

at shaping government approaches to adaptation to climate change. Government ministries and agencies are to devise sector-specific adaptation plans by Q3 2021.

The Climate Doctrine of the RF approved by the RF President Decree of 17.12.2009 No.861-rp and amended by the RF Government Instruction of April 30, 2018 No. 842-r, requires development and adoption of regulatory, methodology and other documents for annual reporting by major industries and energy companies with annual direct GHG emissions of more than 150,000 t CO_{2e}, starting from 2019. Since 2019, the large industries are requested by environmental authority to provide the information on their GHG emissions. However, no specific requirements for the inventory, timeframe and reporting format have been developed by present.

In February 2021, the draft Federal Law "On GHG emissions limitation" was disclosed for comments and recommendations (the second round of consultations). The law concept covers two main issues: obligatory GHG reporting for large GHG emitters (over 150,000 t CO_{2e}, for the 1st stage until 2024) and legal base for carbon credits management, as a tool to reduce carbon footprint and attract investment.

2.2.2 Energy efficiency

The main legal act regulating the energy efficiency of enterprises is Federal Law "On Energy Saving and Energy Efficiency Increase and Amending Certain Legislative Acts of the Russian Federation" of 23.11.2009 No. 261-FZ. It created a legislative, economic and organisational stimulus for energy saving and increase of energy efficiency of industries.

The Russian Ministry of Construction, Housing and Utilities set the special obligatory requirements[13] on the EE of all buildings, structures and installations (with a few exceptions) in accordance with the RF Government Order of 17.11.2017 No. 1550/pr [14]. The EE requirements cover:

- the maximum energy consumption limits for buildings and structures;
- requirements regarding the architectural, functional, technological, construction, engineering and technical solutions impacting the EE of buildings and structures; and
- requirements regarding the specific construction elements of buildings and structures, applicable equipment, technologies and materials.

2.3 The Project benchmarking

Based on the current benchmarking results the Project are provided in GHG and EE Philosophy. The benchmarking outcomes proved that the Project is well positioned among other comparable state-of-the-art projects being designed as one of the most efficient in the LNG production sector and complying with the applicable performance requirements and most of the BATs.

The Arctic LNG 2 Project adopted the feasible energy efficient solutions and appropriate BATs at the planning and design stage, and this approach helps to achieve the specific GHG emissions of 0.27 t CO_{2eq} / t LNG comparing to the sector-average value of 0.42 t CO_{2eq} / t LNG[15] (lower by 36%). In addition, the Project demonstrates the full compliance with the EHS Guidelines for Liquefied Natural Gas Facilities (2017), being in the lowest part of the best energy performance range.

The key applicable requirements on the Project GHG and EE performance and the benchmark assessment of the Project compliance with World Bank / IFC EHS guidelines, EU and national BAT guidelines and best practice documents are provided in full details in Sections 2.1.7-8, 2.2.4 and 7 of the GHG and EE Philosophy.

[13] RF Government Decree "On approval of the rules for establishment of energy efficiency requirements for buildings, structures and facilities and requirements of rules for defining energy efficiency class of apartment blocks" of 07.12.2020 No. 2035.

[14] RF Minstroy Order "On approval of the EE requirements for buildings, structures and facilities" of 17.11.2017 No. 1550/pr

[15] Life Cycle Assessment of LNG. International Gas Union (IGU), June 2015.

3 THE PROJECT DESCRIPTION

3.1 Project Overview

Arctic LNG 2 is a project for gas extraction, production and loading of liquefied natural gas (LNG) and stabilized gas condensate (SGC) for further transportation. The Project is operated by Arctic LNG 2, LLC. The resource base of the Project is the Salmanovskoye (Utrenneye) oil, gas, and condensate field (OGCF) located on the Gydan Peninsula in the Tazovskiy Municipal District of the Yamal-Nenets Autonomous Okrug of Russia.

Key components of the Arctic LNG 2 Project (hereinafter – the Project) are:

- the Salmanovskoye (Utrenneye) oil, gas, and condensate facilities setup (the Field);
- the GBS Plant for liquefaction of natural gas and stabilization of gas condensate (the GBS LNG & SGC Plant or the Plant). The Plant includes three LNG trains on the artificial land plot to be constructed in the Ob Estuary;
- the Utrenniy LNG & SGC Terminal (the Utrenniy Terminal, the Port) intended to provide offshore logistics for gas carriers and tankers, offloading of LNG and SGC, reception and storage of cargoes for operations and construction.

The Project structure is provided on the Fig. 1.1 below.

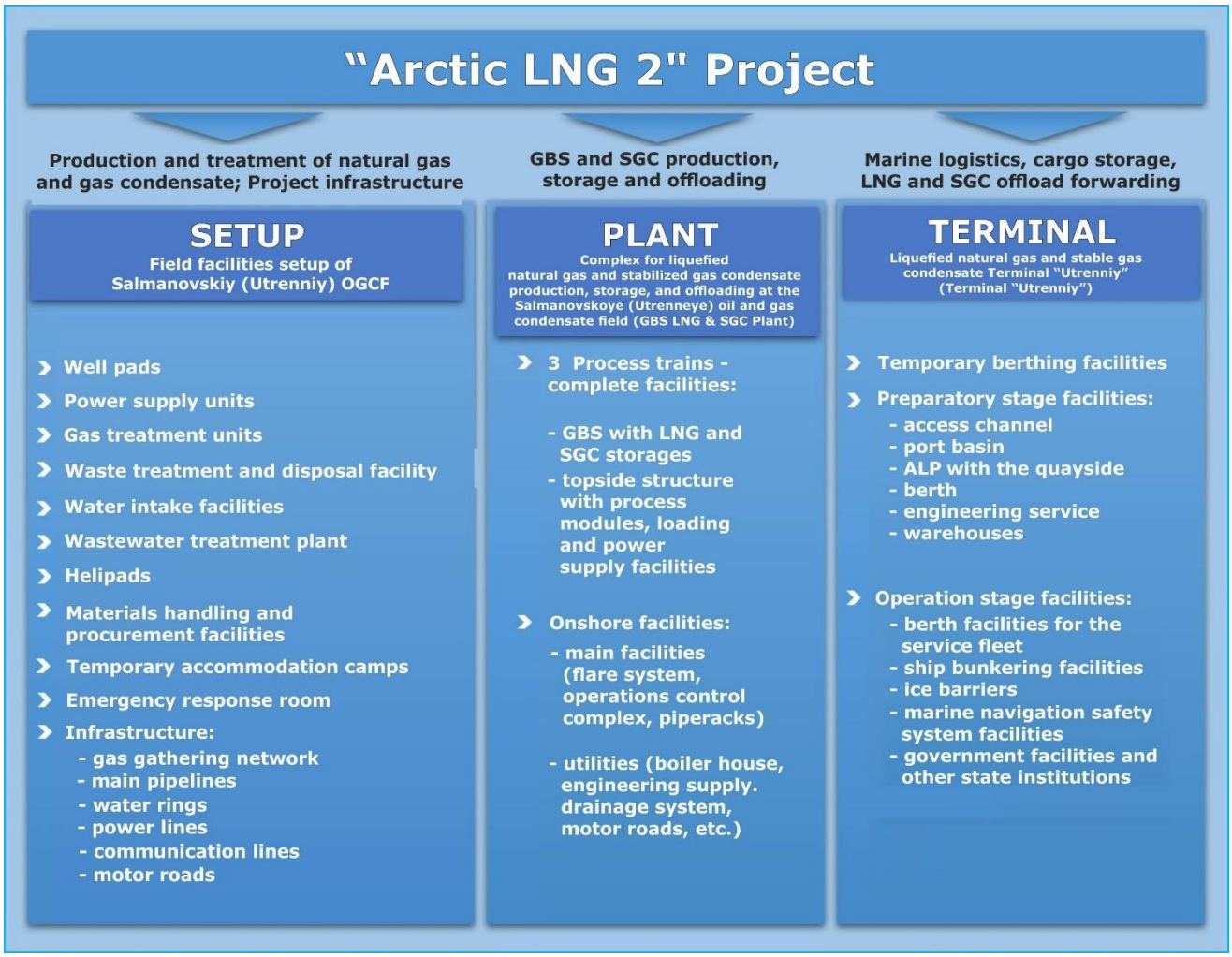

Figure 3.1: The Arctic LNG 2 Project structure

The **Field** includes gas, gas condensate and oil deposits and is planned to be drilled by 213 wells clustered in 20 well pads. The Salmanoye field is intended for production of gas and gas condensate; oil production

is not planned. Exploration and development of the Salmanovskoye (Utrenneye) OGCF are carried out by ARCTIC LNG 2 LLC on the basis of the license valid until 2120.

The **Plant** on gravity-based structures will comprise three process trains for production, storage and offloading of liquefied natural gas and stabilised gas condensate with the declared annual capacity of around 6.6 MTPA of LNG each. The total SGC capacity of the Complex during the peak period is up to 1.6 Mtpa of SGC.

The **Terminal** Utrenniy is to be operated as a section of the port Sabetta (located on the Yamal Peninsula on the left shore of the Ob Estuary) and is designed for providing marine logistics functions for gas carriers and tankers for LNG and SGC offloading, and for the reception and storage of process and construction cargoes for the Project.

3.2 Project Phasing

Construction of the Arctic LNG 2 Project facilities is carried out in successive stages, starting from the exploration of the Salmanovskoye (Utrenneye) OGCF and ending with commissioning of the third process train of the GBS LNG & SGC Complex in 2026.

Since 2014, LLC "Arctic LNG 2" is the sole holder of subsoil license that includes the Salmanovskoye (Utrenneye) OGCF. The license which is valid till year 2120[16] permits exploration and production of hydrocarbons in the Salmanovskiy (Utrenniy) license area.

In 2015-2016, the preliminary front-end engineering design (pre-FEED) for the LNG & SGC Plant was prepared and identified the mixed fluid cascade process by Linde (Germany) as preferred method of liquefaction of natural gas. At the same time, GBS (gravity-based structure) was considered as an option for the Plant construction.

In 2017-2020, the design documentation was developed, and the key equipment and installations procured. The Engineering, Procurement and Construction Contracts for the Project were signed with NOVARTIC / GYDAN LNG (lead by TechnipFMC) for the Topsides and SAREN (lead by SAIPEM) for the GBS part.

Further Project plans provide for phased commissioning of the Field facilities, as soon as the Plant process trains are available. It is planned that the Plant will become fully operational in 2026, with the three process trains running at full capacity.

The berths are the first facilities constructed of the Project facilities and were put in operation in 2016. It is part of the Terminal "Utrenniy" which is under construction currently. The Terminal will finally be commissioned in the first half of 2023.

Construction of the Field facilities started in 2018. Wells are to be drilled from 2020 to 2026. Other Field facilities (gas treatment plants, waste landfill site, and others) are planned to be operational by the end of 2023.

Construction of The Plant started in mid-2019, with commissioning scheduled for early 2026.

The Plant topside modules and process piping are designed for a minimum operation life of 25 years. Regular inspections during the operation period will identify the need for the equipment repair and/or replacement to extend operation of the modules.

The operation life of the hydraulic structures related to the Port (the ice barriers, drainage channel, and berths) is less than 50 years. The gravity-based structures of the Plant Process Trains and related LNG and SGC storage tanks are designed for 40-year operation. At the end of the above period, industrial safety review will either demonstrate their fitness for further safe operation or identify the need for decommissioning, dismantling and disposal.

3.3 Associated facilities and activities

In accordance with IFC Performance Standard 1 (PS1), Associated Facilities of a Project are those activities and facilities that are not financed within the scope of the Project and would not be conducted, built or expanded if the Project was not carried out, and without which the Project would not be viable. The list of

[16]Subsoil l cense СЛХ 15745 НЭ of 20.06.2014 for exploration and production of crude hydrocarbons in subsoil area of federal significance including Salmanovskoye (Utrenneye) oil, gas, and condensate field / Consol dated National Register of Subsoil Areas and Licenses. - Russian Federal Geological Fund of the Federal Agency for Mineral Resources. As amended by Addendum No.3 dated 29.03.2018.

Associated Facilities as well as activities and facilities considered as not associate with the Project was identified in the framework of ESHIA and respective supportive documentation development and agreed with Independent Environmental and Social Consultant.

4 CARBON FOOTPRINT ASSESSMENT

4.1 GHG emission assessment approach

4.1.1 International approach

In 1987-1988 the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) established a dedicated international scientific organization - Intergovernmental Panel on Climate Change (IPCC) - that provides information on climate change, its impact on natural and economic systems, human health, and on the ways the anthropogenic impact on climate can be mitigated.[17] Results of the IPCC work are issued in the form of scientific reports. The Fifth Assessment Report was published in 2013-2014.

The IPCC Task Force on national greenhouse gas inventories develops methodology guidance for the national inventories of GHG sources and sinks. The IPCC Guidelines for National Greenhouse Gas Inventories were published in 2006[18] to facilitate preparation of the national GHG inventories by the member countries. The Guidelines provide default values of various parameters and emission factors for various sectors of industry, to enable estimation of GHG emissions using the national economic data. Also, the countries are free to use more detailed methodologies, provided that data reported by different countries are compatible, comparable and consistent.

On August 5, 2019, IPCC issued updated version of the methodology[19]. The 2019 Refinement provide more methods to be used for evaluation of GHG emission sources and sinks. It further considers the identified scientific gaps, new technologies, processes, sources and sinks that were not covered by the IPCC 2006 Guidelines.

4.1.2 The WBCSD / WRI GHG Protocol

The GHG Protocol[20] is a partnership between World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD), which establishes comprehensive global standardized frameworks to measure and manage GHG emissions from private and public sector operations, value chains and mitigation actions.

The GHG Protocol Initiative comprises two separate but linked standards:

- GHG Protocol Corporate Accounting and Reporting Standard (provides a step-by-step guide for companies to use in quantifying and reporting their GHG emissions)[21];
- GHG Protocol for Project Accounting (a guide for quantifying reductions from GHG mitigation projects)[22].

To make the GHG emissions reporting more structured, the Greenhouse Gas Protocol: Corporate Accounting and Reporting Standard[23] introduces the concept of "scope" of direct and indirect emission sources according to the organizational and operational boundaries of the assessment:

- Scope 1: Direct GHG emissions - Direct GHG emissions occur from sources that are owned or controlled by the company.
- Scope 2: Power indirect GHG emissions account for GHG emissions from the generation of purchased electricity consumed by the company (for production processes, heating, cooling).
- Scope 3: Other indirect emission. This is an **optional** reporting category that allows for the treatment of all other indirect emissions. Scope 3 emissions are a consequence of the activities of the company but occur from sources not owned or controlled by the company, i.e. extraction and production of purchased materials, transportation of purchased fuels, and use

[17] http://www.meteorf.ru/activity/internat onal/mgeik/

[18] IPCC 2006 Guidelines for Nat onal Greenhouse Gas Inventories. Prepared by the Task Force on Nat onal Greenhouse Gas Inventories of the IPCC. Ed ted by Simon Eggleston, Leandro Buendia, Kyoko Miwa, Todd Ngara and Kiyoto Tanabe . Published by IGES, Japan

[19] 2019 Refinement to the 2006 Guidelines for Nat onal Greenhouse Gas Inventories

[20] https://ghgprotocol.org/

[21] https://ghgprotocol.org/corporate-standard

[22] https://ghgprotocol.org/sites/default/files/standards/ghg_project_accounting.pdf

[23] The Greenhouse Gas Protocol. A Corporate Accounting and Reporting Standard (revised edition). http://ghgprotocol.org/corporate-standard

of sold products and services. Therefore, emissions from the associated facilities/activities and supply chains can be considered as Scope 3.

The tools advised by the GHG Protocol are consistent with those proposed by the Intergovernmental Panel on Climate Change (IPCC) for compilation of emissions at the national level (IPCC, 2006). The default emission factors are averages based on the most extensive data sets available and used by the Intergovernmental Panel on Climate Change (IPCC), the premier authority on accounting practices at the national level. However, the GHG Protocol recommends that businesses should use custom values whenever possible, as the industrial processes or the composition of fuels used by businesses may differ with time and by region.

4.1.3 National approach

As described in Section 2.2.2, no specific requirements for the inventory, timeframe and reporting format have been developed by present. At the same time, methodology framework for assessment of direct and indirect GHG emissions by industries is provided in two following documents:

- RF Ministry of Natural Resources, Order of 30.06.2015 No. 300 "On approval of "Methodology instructions and guidelines for quantitative assessment of GHG emissions from entities conducting economic and other activities in the Russian Federation" ("MI 300"); and
- RF Ministry of Natural Resources, Order of 29.06.2017 No. 330 "On approval of "Methodology instructions and guidelines for quantitative assessment of indirect energy GHG emissions".

The general approach to GHG accounting is adopted from IPCC Guidelines for national inventories (2006) supplemented by emission factors for various composition of fuels and technologies typical for the RF.

In accordance with the "Concept of the system of GHG emissions monitoring, reporting and verification in the Russian Federation"[24] adopted in 2015, the assessment of anthropogenic emissions of greenhouse gases refers to the following substances: carbon dioxide, methane, nitrogen monoxide, hydrofluorocarbons, perfluorocarbons, sulphur hexafluoride, nitrogen trifluoride. It shall be noted that emission of methane and nitrogen monoxide is scoped out for stationary combustion, and nitrogen monoxide emission is scoped out for flaring by the requirements of MI 300.

4.1.4 Identification of quantitative assessment tier

The 2006 IPCC Guidelines provide for three tiers of quantitative assessment of the emissions, depending on the available data on the operations, fuel, feedstock and processes:

- **Tier I** relies on application of generic average emission factors recommended by IPCC 2006, with no regard to the country-specific attributes of the processes;
- **Tier II** suggests that region-specific or country-specific emission factors are applied to account for local specifics of the processes, properties of the fuel, feedstock and/or materials;
- **Tier III** provides for the use of emission factors that account for specifics of the production processes of specific company. Such factors should be calculated on the basis of detailed information on composition of fuel, feedstock and materials, and on the technological process that produces the emissions.

The methodology approach to quantitative assessment of GHG emissions is selected with due regard to availability of data on the planned operations and the current stage of design development, namely predicted values and known planned parameters of various fuels used at different stages of the Project implementation. This method is adopted to minimise uncertainty of the assessment result and the risk of underestimating or overestimating the emissions (the accuracy principle).

[24] Concept of the system of GHG emissions monitoring, reporting and verificat on in the Russian Federation (adopted by the RF Government Instruction No.716-r of 22.04.2015

The quantitative assessment results for each source have been compared against the selected level of significance. In accordance with the Methodology Instructions for quantitative assessment of GHG emissions #300 and recommendations of the GHG Protocol[25], the threshold level for summary significance of non-included sources is 5% of the total emissions volume, but not more than 50,000 t CO_2-equivalent per year. However, if this approach is adopted, many sources fall below the significance threshold, therefore, reliable calculated values at each source that contribute more than 1% to the total GHG emissions volume have been considered, as far as possible.

The assessment has been conducted using the selected method depending on the available data which currently allows for Tier II assessment.

4.1.5 GHG assessment method baseline

This assessment report has been prepared considering the approach to estimation of GHG emissions in accordance with the applicable guidance and reference documents recognised at the national and international level:

- 2006 IPCC Guidelines for National Greenhouse Gas Inventories:
  - Volume 1: General Guidance and Reporting;
  - Volume 2: Energy;
  - Volume 3: Industrial Processes and Product Use;
- Compendium of Greenhouse Gas Emissions Methodologies for The Oil and Gas Industry, American Petroleum Institute, 2009(API Compendium)[26];
- Best Available Techniques Reference Document for the Refining of Mineral Oil and Gas, 2015[27];
- Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the IPCC[28];
- 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories [29];
- Guideline methodology and instructions for quantitative assessment of GHG emissions from entities conducting business and other operations in the Russian Federation, approved by the RF MNR Order of 30.06.2015 No.300.

Preferences are given to international methodologies that are compatible with MI 300. Assumptions made for the calculations refer to the general methodologies and scientific reports that sum up the contemporary experience of dealing with the climate change issues.

4.1.6 Selection of the Assessment boundaries

The main GHG emissions from the Project are generated in the process of production, treatment and liquefaction of natural gas and stabilization of gas condensate. These emissions are considered under the **Scope 1** assessment.

Given that energy supply for the Project will be provided from the generation facilities (power and heat) specifically designed for the Project, the associated GHG emissions are estimated as direct emissions, based on the quantity of fuel used for generation and included in the Scope 1 assessment. Therefore, separate assessment of **Scope 2** emissions is not required.

Scope 3 assessment is *not required* for the Project in the framework of international ESHIA provision by the international requirements (see Section 2.1 for details), however, the Company decided to

[25] GHG Protocol: A Corporate Accounting and Reporting Standard http://www.ghgprotocol.org/corporate-standard

[26] Amer can Petroleum Institute. Compendium of Greenhouse Gas Emiss ons Methodologies for The Oil and Gas Industry. – 2009

[27] Best Available Techniques (BAT) Reference Document for the Refining of Mineral Oil and Gas - Luxembourg: Publ cations Office of the European Union, 2015.

[28] Climate Change 2013: The Physical Science Basis. Contribut on of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. M dgley (eds.)]. Cambridge Univers ty Press, Cambr dge, United Kingdom and New York, NY, USA

[29] 2019 Refinement to the 2006 Guidelines for Nat onal Greenhouse Gas Inventories

conduct the assessment of its carbon footprint as far possible, in order to further consider potential compensation mechanisms and reduction of GHG emissions at the associated facilities and activities and in the Project supply chain, including, inter alia, transportation of products and their use. The depth of such assessment depends on the available information at this stage, selected boundaries of the system, and how reasonable (from the Company's perspective) the investing will be in regard to reduction of GHG emissions at suppliers, contractors and customers. The GHG and Energy Efficiency Management Plan provides for assessment of the Scope 3 GHG emissions at the extent possible at this stage (based on the availability of reliable information). Based on the availability of the Scope 3-related information, this assessment will be improved in the future.

The Project GHG emissions were assessed for content of the substances that are generated/released by the Project during production, transportation and storage of the feed gas and LNG, namely carbon dioxide, methane, and nitrogen (I) oxide. The GHG precursors (SO_2, CO, NO_x, etc.) and reactive indirect compounds (such as VOC) have been scoped out, due to the lack of reliable methodology for their estimations in CO_2 equivalent.

4.2 Summary of the Project GHG emission assessment

According to the assessment results, expected level of GHG emissions from the Project under Scope 1 is 1.63 million t CO_{2-e} during the whole period of construction; during the operation (starting from 2026), the Project emissions of GHG are not likely to exceed 6.20 million t CO_{2-e} per year.

The Airport Utrenniy GHG emissions are estimated as 11,467 t CO2-e at the construction phase and 27,687 t CO_{2-e} annually during the operation phase.

The overall GHG emissions from LNG transportation to the transshipment facilities under Scope 3 are estimated as 2.464 million tCO_{2-e} annually.

After the facilities commissioning, the actual emissions will be re-assessed using the measured values or records. A more detailed inventory of operation phase emissions must be prepared for the Project.

It is expected that actual GHG emissions from the Project will be lower than the estimated values, as the calculation is based on conservative approach, using the projections in the design documentation and operation of facilities at full capacity. Furthermore, actual consumption of fuel gas for generation may be lower, due to better gas quality and optimization of combustion mode.

The spatial design, processes and equipment configurations have been selected with reference to the best available techniques, and with a view to optimising the production and auxiliary processes and logistic schemes. Therefore, implementation of the designed schemes will minimise direct and fugitive emissions of greenhouse gases, due to the use of the most efficient generation processes and reasonable use of heat and electric energy, as well as reduction of potential leaks of natural gas and gas condensate in the process lines and at transportation and processing.

Implementation of the designed resource and energy efficient solutions for the Project will be ensured through the designer supervision and oversight of the practices at the stage of construction and commissioning, through monitoring of process performance over the transition period till full-scale operation, monitoring of implementation of this GHG & EE Management Plan and Air Quality Management Plan.

The key factors for effective management of the Project GHG emissions during the operation phase are: timely maintenance of equipment; emissions monitoring and control; updating the inventory of emission sources and GHG emissions register; annual evaluation of absolute and specific GHG emissions of the Project. Sensible energy-saving solutions in accordance with international best practice should also be implemented whenever possible.

4.3 Climate Change Alternative Analysis: outcomes

4.3.1 General overview of considered alternatives

The Guidance Note on Climate Change Risk Assessment developed in September 2020 to further explain Equator Principles 4 requirements describes the necessity to include the alternatives analysis evaluating lower greenhouse gas (GHG) intensive alternatives in Climate Change Risk Assessment for the projects with emissions more than 100,000 t of CO2-eq per year, taking into consideration the design decisions, fuel type and specific emissions per production unit.

The largest input into the Project GHG emissions is generated at the Field at the construction phase and the Plant at the operation phase, therefore the alternatives review and calculations are provided for these Project components.

The following alternatives are described:

- At the construction phase:
    - (1) Use of diesel or fuel gas for power generation at the Field;
- At the operation phase:
    - (2) Liquefaction technology selection (compared by options including number of GBS and capacity of process trains;
    - (3) Refrigerant compressor driver selection compared by options including the type of liquefaction technology and capacity of process trains;
    - (4) Combined efficiency of engineering decisions on equipment type and waste heat/cool recovery compared to the benchmark performance.

In general, technological alternative analysis is based on data provided by the Company in Options Evaluation and Recommendation report[30]. There are 8 options was considered in this document, but the main 3 differences are the LNG capacity and number of GBS[31] (5.5MTPA per Process train, 3 GBS or 7.5 MTPA per process train and 2 GBS), type of driver (gas turbine or electric motor), technology of liquefaction (DMR by APCI or MFC by Linde). The design documentation also contains the consideration of alternatives (see Section 6.1 and Appendix 19 of the ESHIA[32] report for details).

4.3.2 Summary of alternatives analysis

The selection of technology alternatives (2 and 3 as defined above) is based on the Plant overall and specific power and fuel gas consumption, the other alternatives (1 and 4) are assessed on base of total or specific GHG emissions. Selection based on these criteria allows for minimization of GHG emissions and enhance of energy efficiency.

The alternatives analysis is summarised in Table 4-3 below.

[30] Arctic LNG GBS Project - Stage 3 – Options Evaluation and Recommendation Report. Pressmark: G098-KBRKCS-ALNG2-DOC-2057. – KBR-Kvaerner, 2016. – 132 p

[31] Here and below it is assumed that one GBS is designed to accommodate one Process Line

[32] ARCTIC LNG 2 PROJECT. Environmental, social and health impact assessment. – RAMBOLL CIS. 2020. – 1078 p.

Table 4-1 The Project alternatives summary

Alternative / Parameter	Options			
(1) The Field – construction phase				
Fuel for power generation	**Fuel gas**		**Diesel fuel**	
Consumption for power generation	499.48 million nm³		421,519 t	
Total GHG emissions for power generation, t $CO_{2\text{-}eq}$ /year	**861,190**		1,335,582	
The Plant – operation phase				
(2) Liquefaction technology selection				
Technology options (selected)	**DMR 3x5.5 GT (1)**	**MFC 3x5.5 ET (4)**	**DMR 2x7.5 GT (5)**	**MFC 2x7.5 GT (7)**
Specific power consumption, kWh/t LNG	281.8	**274.6**	278.8	**274.6**
Input to specific CO_2 emissions (liquefaction process only), t$CO_{2\text{-}e}$/t LNG	0.1358	**0.1324**	0.1344	**0.1324**
(3) Refrigerant compressor driver selection				
Technology options (selected)	**MFC 3x5.5 GT (3)**	**MFC 3x5.5 ET (4)**	**MFC 2x7.5 GT (7)**	**MFC 2x7.5 EM (8)**
Total fuel demand, kg/t LNG	**93.55**	99.87	**94.17**	97.67
Specific GHG emissions t $CO_{2\text{-}e}$/t LNG	**0.2347**	0.2506	**0.2363**	0.2451
(4) Combined efficiency of the Plant as designed				
Set of energy efficiency measures	**The Project**		**Best average analogues (lower value)**	
Specific GHG emissions, t $CO_{2\text{-}e}$/t LNG	**0.27**		0.42	
Total GHG emissions, thous.t $CO_{2\text{-}e}$ /year	**5,264.00**		8,158.01	

The following alternatives selection was conducted based on the estimations of energy efficiency and GHG emission performance as demonstrated in Table 4-3:

(1) Use of fuel gas for generating power at the Field during the construction phase;
(2) Selection of MFC technology by Linde;
(3) Selection of Gas Turbine driver;
(4) Energy efficient design.

The number of GBS and the LNG capacity are selected to be 3x6.6 MTPA both to increase the production and ensure the safe level of operation.

5 PREVENTION DURING PLANNING AND DESIGN

5.1 Key planning and design solutions: prevention

A range of specific measures have been developed to enhance energy efficiency and minimize GHG emissions during facility operations in line with the NOVATEK and Arctic LNG 2 policies and the Project design documentation, including ***prevention, engineering, management, monitoring and control*** measures which are described in Sections 5 and 6.

The most efficient way to minimize GHG emissions is to employ the prevention principle, starting from the early planning stage, alternative analysis throughout planning and design and adoption of the feasible best available techniques during the design.

The findings of alternative analysis meaningful in respect to the GHG emissions and energy efficiency are summarized in Section 4.4 above. This section provides a summary on the applied preventive measures to reduce the Project carbon footprint and enhance its energy efficiency performance.

The following approach of energy and resource efficiency and reasonable use of natural resources are adopted in the Project to minimize GHG emissions, starting from the design development for the planned investments:

- Optimal location of facilities and infrastructure for production, transportation, treatment, liquefaction of natural gas and stabilization of gas condensate, and offloading of LNG and SGC to minimize energy consumption and losses;
- Selection of the most effective technologies and equipment for construction and operation;
- Efficient water supply and wastewater disposal schemes and heat, steam and electricity generation and supply;
- The liquefaction technology is based on a consecutive process of natural gas liquefaction with application of mixed cooling agents for efficient liquefaction of natural gas;
- Use of efficient power generation units, turbines and boilers throughout the Project;
- Energy generation at the Plant is arranged using efficient aero-derivative gas turbines instead of large industrial installations based on the higher thermal efficiency (41% comparing to 36-40%);
- Use of waste heat recovery units to recover waste heat from liquefaction compressor drivers turbines and utilize it in the process heat cycle or space heating;
- Optimising energy generation and supply schemes including use of heat exchangers utilizing cold and heat in the technological process and optimizing water heating in boilers for own needs and for glycol solution;
- Boil-off gas (methane) from the technological processes and LNG storage is collected and returned for utilization of cold in heat exchangers in the liquefaction process, or utilized locally as fuel gas;
- No routine flaring at the Project facilities and during the LNG transportation;
- Use of advanced smart controls for fuel combustion and thermal treatment of waste, for minimization of N_2O emissions.

5.2 General energy efficiency measures

Since the Project represents a new development, the principle of ensuring maximum possible energy and resource efficiency is incorporated in the process of design development for the structures and facilities in compliance with the Russian law, particularly Federal Law No.261-FZ of 23.11.2009 "On energy saving and improvement of energy efficiency, and on amendments to certain legal acts of the Russian Federation" and the RF Government Resolution No.87 of 16.02.2008 "On the structure of design documentation and its contents".

Key energy efficiency decisions for the Project are described in Energy Efficiency sections of the design documentation[33] for the following facilities: GBS LNG & SGC Plant, the Port[34], Energy centre No.2[35], Salmanovskoye (Utrenneye) OGCF Facilities Setup Gas supply for the power supply facilities to support construction, hydraulic filling and drilling operations (start-up package I, designation in the design documentation - PIR-1) and Salmanovskoye (Utrenneye) OGCF Facilities Setup (start-up packages PIR-2…5)[36].

In addition, the following general energy efficiency measures are foreseen for the Project:

- use of state-of-the-art energy-saving equipment and modern materials;
- smart control of technological process;
- smart control of electricity use in operations and outdoor lighting;
- positioning substations near facilities with high consumption (in the "load concentration points")
- optimal selection of engines capacity;
- minimization of energy losses in the electricity transmission and distribution system;
- use of copper conductors and buses in the distribution network and supply mains;
- use of energy-saving heating cables.

[33] Section 10(1) "Measures to ensure compliance with energy efficiency requirements and requirements to equip buildings, structures and facilities with metering devices for energy resources used"
[34] For both facilities developed by Lenmorniiproekt JSC
[35] Developed by EleSi LLC
[36] For both facilities developed by NIPIGAZ JSC

6 MITIGATION AND MONITORING AT CONSTRUCTION AND OPERATION

6.1 General approach in energy efficiency management

There are a number of measures planned to increase the energy efficiency in the Project:

- Develop and implement effective energy management system in line with ISO 50001 and national legal requirements, including commitments to:
    - Implementation of Arctic LNG 2 and NOVATEK policies in energy efficiency and saving;
    - Development of policies, procedures and standards regarding energy efficiency management process in Company.
    - Provision of energy audits and development of 'energy passport';
    - Establish the baseline, objectives, targets and action plans in accordance with potential opportunities to improve energy performance;
    - Develop the energy performance indicators (EnPIs) and take actions to continually improve energy performance;
    - Measure and monitor key characteristics of the Project operations that determine energy performance against the energy policy and objectives and report the results.
    - Continually improve energy efficiency performance;
    - Use of state-of-the-art energy saving technologies;
    - Account for energy resources using applicable approach and legal requirements for analysis of energy resources balance for type of production and the entire Project;
- Regularly provide energy efficiency benchmarking with other LNG plants and applicable standards / BATs.
- Develop the methodological approach for accounting on energy efficiency performance parameters for confirming compliance.
- Monitoring of thermotechnical characteristics of heat insulation of the buildings and structures, systems and mains during construction and operation.

Potential sensible energy-saving solutions should be also regularly explored, identified and implemented whenever possible in accordance with new international guidelines and up-to-date best practice.

Implementation of the mitigation and monitoring measures of this GHG & EE MP shall be controlled during inspections and audits of the various levels. Specific approach to such audits and inspections at the construction stage is provided in the Framework Environmental and Social Management Plan.

6.2 Monitoring parameters - construction

The parameters to be monitored at the construction stage are presented in Table 6-1 below.

The collected data are to be disaggregated by facilities and the Project components to identify the potential deviations from the design assumptions and allow for GHG emission calculations and evaluation of GHG and EE performance.

Table 6-1 Main GHG and EE parameters to be monitored during construction phase

Parameter	Units	Regularity	Method	Responsibility	Facilities / Activities
Diesel fuel consumption by facilities	tons	Quarterly Total annual	Recording of consumption	Contractors report to EPC-contractor on a quarterly basis EPC-contractor summarizes the data and report to the Company quarterly Company monitor the quarterly and annual consumption	At the Plant: Diesel power plants Boiler house Loading machinery engines Use of watercrafts
					At the Port: Use of watercrafts Loading facilities
					At the Field: Diesel power plants Oil cuttings treatment units
Gasoline consumption	tons	Quarterly Total annual	Recording of consumption	Contractors	At the Field
Oil cuttings combusted	tons	Quarterly Total annual	Estimations based on gas production	Company	At the Field: Oil cuttings treatment units
Fuel gas consumption	thous. nm^3	Quarterly Total annual	Recording of consumption	Operators of facilities	At the Field: Gas turbine power plant based on 16 PAES-2500 2.5 MW Flaring at the power generation site
Methane	tons	Quarterly Total annual	Estimations based on gas production	Company	At the Field (fugitive): Drilling operations (vents) Fuel gas treatment unit Gas production at the first wells (vents)

6.3 Monitoring parameters - operation

The parameters to be monitored are presented in Table 6-2 below.

The collected data are to be disaggregated by facilities and the Project components to identify the potential deviations from the design assumptions and allow for GHG emission calculations and evaluation of GHG and EE performance during operation.

Table 6-2 Main GHG and EE parameters to be monitored during operation phase

Parameter	Units	Regularity	Method	Responsibility	Facilities / Activities
Diesel fuel consumption by facilities	tons	Quarterly Total annual	Recording of consumption	Company	At the Port: Use of watercrafts Loading facilities
Fuel gas consumption	thous. nm^3	Quarterly Total annual	Recording of consumption	Company	At the Field: Gas turbine Power Plant on PGTP-3 Boiler houses on CGTPs Flaring system Waste thermal disposal Sludge incineration unit Waste transportation (trucks)
					At the Plant: Gas turbine power plant Gas turbine compressors for cooling agents Boiler house Flaring system
BOG	thous. nm^3	Quarterly Total annual	Recording of consumption	Company	At the Plant: Boilers Flaring system
Carbon dioxide	tons	Quarterly Total annual	Calculations based on gas use	Company	Acid gas removal at the Plant
Methane	tons	Quarterly Total annual	Estimations and measurements where possible	Company	At the Field (fugitive): Gas production and treatment WWTP Landfill gas at waste disposal site
					At the Plant: Process Trains equipment (fugitive) Flaring system
					Wastewater tanks at the Port (fugitive)

6.4 Key performance indicators

The targeted Project performance in respect to the GHG emissions and energy efficiency are described in Section 4.3.

After the facilities commissioning, the actual emissions will be re-assessed using the measured values or records. A more detailed inventory of operation phase emissions should be prepared in the future.

It is expected that actual GHG emissions from the Project will differ from the estimated values, as the calculation is based on conservative approach, using the projections in the design and FEED documentation, and assuming use of full capacity of the Plant. Actual consumption of gas for power generation may be lower due to better gas quality and optimization of process parameters.

As indicated above, the monitoring parameters (see Sections 6.2 and 6.4) are to be measured by facilities and the Project components to allow comparison with the design assumptions and detailed GHG emission calculations. The outcoming estimated GHG and EE performance can be compared with the best practice applicable to the Project and the respective benchmarks provided in GHG and Energy Efficiency Philosophy.

In case the actual values of measured parameters are significantly above the projected values, the investigation shall be provided to understand the reasons and develop the corrective actions to restore or improve the projected performance.

The following key performance indicators (KPIs) are to be used in the Project:

Energy Efficiency:

- Specific energy consumption per gas production, kWh/t gas (operation)
- Specific energy consumption per LNG production, kWh/t LNG (operation)
- Total energy consumption per the Project component, MWh (construction, operation)
- Power generation efficiency per unit: gas turbine, boiler, % (construction, operation)

GHG emissions:

- Specific GHG emissions per gas production, thous.t $CO_{2\text{-}e}$/t gas (operation)
- Specific GHG emissions per LNG production, thous.t $CO_{2\text{-}e}$/t LNG (operation)
- Total GHG emissions per the Project component, thous.t $CO_{2\text{-}e}$ (construction, operation)

This KPIs are to be included into the Project GHG emission reporting (see Section 7 for the reporting requirements).

7 GHG AND ENERGY EFFICIENCY REPORTING

7.1 The GHG reporting requirements

The IFIs environmental and social policies and guiding documents as well as the national legislation contain a number of reporting requirements in respect to GHG emissions (Equator Principles 4, 2020; IFC Policy on Environmental and Social Sustainability, 2012).

The annual operational GHG emissions of the Project are higher than the reporting threshold of 50,000 t CO_2-equivalent set by RF Government Directive No.716-r dated April 22, 2015. This value also exceeds the threshold of 25 thousand ton of $CO_{2\text{-}e}$/year set by the IFC Performance Standards for annual reporting of direct and indirect emissions of GHG from the Project.

The Principle 10: *Reporting and Transparency* of Equator Principles 4[37] requires public annual reporting on GHG emission level (combined Scope 1[38] and Scope 2[39] emissions, and specific emission rate per unit of product, if applicable) during the operational phase for Projects emitting over 100,000 t CO_{2eq}/year.

Public reporting requirements can be satisfied via host country regulatory requirements for reporting or environmental impact assessments, or voluntary reporting mechanisms such as the Carbon Disclosure Project[40], where such reporting includes emissions at the Project level.

There are no specific requirements for regular reporting on energy efficiency performance of the Project. Taking into consideration that operational GHG emissions directly depend on its energy efficiency, the energy efficiency KPIs shall be closely monitored and included into GHG reporting documentation.

7.2 The Project GHG and EE reporting arrangements

Taking into account the requirements mentioned above, the annual reporting on the actual amount of greenhouse gas emissions will be envisaged in the Project. These reports will be made available to relevant government agencies and lenders and published in open sources where they can be accessed by all stakeholders.

The following documents are currently considered for disclosure including the GHG and EE performance information:

- ESHIA documentation disclosure, including preliminary detailed GHG emission assessment – at the Project and ECAs' Internet sites;
- GHG and EE Philosophy disclosure – at the Project Internet site;
- ESHS quarterly reporting to the Lenders – electronic copies;
- Annual ESHS reports - at the Project Internet site.

[37] https://equator-principles.com/wp-content/uploads/2020/05/The-Equator-Principles-July-2020-v2.pdf

[38] Scope 1 Emiss ons are direct GHG emiss ons from the facil ties owned or controlled within the phys cal Project boundary

[39] Scope 2 Emiss ons are indirect GHG emiss ons associated with the off-site production of energy used by the Project

[40] https://www.cdp.net/en

8 TRAINING AND AWARENESS

Company and Contractors that have responsibility for implementation of measures and requirements included in this Plan must have the necessary competencies, skills and experience to perform this work.

Site personnel dealing with activities that result in greenhouse gas emissions shall receive awareness training as part of the site induction program and regularly during their work (once a year).

The training program shall address:

- Applicable provisions of this GHG & EE MP;
- Roles and responsibilities in respect to the mitigation, monitoring and control measures implementation and GHG emission reporting;
- Applicable national and international requirements to comply with;
- Site-specific procedures;
- KPIs and reporting arrangements;
- GHG emissions reduction best practices.

Additional training may be required for individuals responsible for conducting monitoring, control and reporting.

Company's training activity associated with this Plan shall be appropriately documented in the framework of ALNG2 training procedure including an assessment of training needs, a record of training activity undertaken and future training. Company commits to sufficient management support and technical resources to enable effective implementation of assessment responsibilities.

Contractor will be required to identify a dedicated point of contact with ultimate responsibility for ensuring the Contractor has correctly implemented the training requirements.

The Contractor's procedures shall describe any training and awareness requirements necessary for its effective implementation. Contractor's training activity shall be appropriately documented by means of a training needs assessment, training plan and report.