

NLNG ECOPORT PORT ENVIROMENTAL REVIEW SYSTEM



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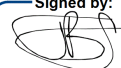


2 Years

Document Type	Document Owner	Approved By	Security Class
Manual	HSE	NLNG MD/CEO	Unclassified
Reference Number	Authors	Reviewed by	
HSS.25.45.10	HSE, LG, NST, PT, PF, PO Team	NLNG Senior Leadership Team	
Key Words			
Port Environmental Review System, NLNG Bonny Terminal, Conformity Review			

Revision Record

Issue	Revision Description	Date
01	Manual update for recertification	23.4.2025

Approval Records

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ISO Certifications

Certificate NG19/90709
The Energy management system of
Nigeria LNG Limited

SGS

CORPORATE HEAD OFFICE Amadi Creek Off Eastern By-Pass, Port Harcourt, Rivers State, Nigeria
has been assessed and certified as meeting the requirements of
ISO 50001:2018

For the following activities
The Integrated Facility For Production of Liquefied Natural Gas, Liquefied Petroleum Gas and Condensates. Boundary: Integrated Production Facility.

This certificate is valid from 26 May 2019 until 26 May 2028 and remains valid subject to satisfactory surveillance audits.
Issue 4. Certified since 27 May 2019

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Certificate NG18/2046
The management system of
NIGERIA LNG LIMITED

SGS

Amadi Creek Off Eastern By-Pass, Port Harcourt, Rivers State, Nigeria
has been assessed and certified as meeting the requirements of
ISO 14001:2015

For the following activities
The Production, Storage & Loading of Liquefied Natural Gas, Liquefied Petroleum Gas and Condensates at Bonny, Corporate Head Office Operational Area (COA) & the Gas Transmission System (GTS) Operations; Operating a residential area at Finima.

This certificate is valid from 18 October 2014 until 06 September 2027 and remains valid subject to satisfactory surveillance audits.
Issue 4. Certified since 06 September 2018
Certified activities performed by additional sites are listed on subsequent pages.
Last certificate expiry date 06 September 2024
Recertification audit date 01 July 2024

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Amadi Creek Off Eastern By-Pass, Port Harcourt, Rivers State, Nigeria
has been assessed and certified as meeting the requirements of
ISO 9001:2015

For the following activities
The Production, Storage & Loading of Liquefied Natural Gas, Liquefied Petroleum Gas and Condensates at Bonny, the Gas Transmission System (GTS) Operations; Operating a residential area at Finima, Processes at Corporate Head Office in Port Harcourt & a Liaison Office in Abuja.

This certificate is valid from 18 October 2014 until 06 September 2027 and remains valid subject to satisfactory surveillance audits.
Issue 4. Certified since 09 September 2018
Certified activities performed by additional sites are listed on subsequent pages.
Last certificate expiry date 06 September 2024
Recertification audit date 02 July 2024

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Accredited Laboratory

AZLA has accredited

NIGERIA LNG LIMITED PRODUCTION OPERATIONS LABORATORY
Bonny Island, Rivers State NIGERIA

for technical competence in the field of
Chemical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system [refer to joint ISO-IAC-IRIA Communiqué dated April 2017].

Presented this 4th day of March 2023.


Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 2607.01
Valid to March 21, 2023

For the tests to which this accreditation applies, please refer to the laboratory's Chemical Scope of Accreditation.

Terms and Definitions

Terms and Definitions

NIMASA - Nigeria Maritime Administration and Safety Agency

NLNG – Nigeria LNG Limited

NLNG Bonny Terminal – NLNG Jetties, loading, production and supporting facilities situated on Bonny Island.

NGO – Non-Governmental Organisation

NPA – Nigerian Ports Authority

IMO – International Maritime Organisation

The Authority - Nigerian Midstream and Downstream Petroleum Regulatory Authority

FMEnv – Federal Ministry for the Environment

RSMEnv – Rivers State Ministry of the Environment

NESREA - National Environmental Standards and Regulations Enforcement Agency

0. INTRODUCTION

This Port Environmental Review System demonstrates how the NLNG Bonny Terminal has continued its journey towards environmental excellence sustenance since its inception, and its commitment to further improvements.

NLNG shall demonstrate leadership and commitment to the environmental management system by:

- Taking accountability for the effectiveness of the Port Environmental Review System (PERS)
- Ensuring that environmental policies and objectives established are compatible with the strategic direction and context of the company
- Providing resources needed for the implementation of the PERS
- Communicating the importance of the effectiveness of the PERS and conform to its requirements
- Directing and supporting persons to contribute to the effectiveness of the PERS
- Promoting continual improvement
- Supporting other relevant management roles to demonstrate leadership as it applies to their areas of responsibility

All the records and related documents of the PERS reports are maintained by the NLNG HSE Manager. Content is jointly maintained by the relevant departments.

The content of this chapter in this PERS report will be reviewed and updated every two (2) years in line with the ECOPORT lifespan requirement or when content modification is otherwise required.

1.0 PORT PROFILE

Marine Terminal Name: NLNG Bonny Terminal.

Owner. Nigeria LNG Limited

Location Address. NLNG Plant Complex, Bonny Island, Rivers State, Nigeria

Website. www.nlng.com

NLNG Bonny Terminal is a private facility built by Nigeria LNG Limited in 1998 for the purpose of exporting its gas products. It is located on Bonny Island, on the eastern bank of Bonny River, approximately 40 km south of Port Harcourt in Rivers State, Nigeria. It covers a land area of about 2.27km² and is licensed by the NPA.

It has a capacity to export over 22 million Metric tonnes of LNG products produced from the production plant situated within the terminal complex. The company is currently executing an expansion project that will add 35% of its current LNG production to its capacity and bring its total production to 30 million metric tonnes of LNG annually besides natural gas liquids – LPG and Condensate cargoes.

It has received several International Standard Organisation ('ISO') certifications. These include ISO 14001 in 2015, ISO 9001 in 2007 and ISO 50001 in 2019. All NLNG's certifications have been revalidated and up to date.

NLNG is a joint venture company comprising of four shareholders - Nigerian National Petroleum Company Limited (NNPC) 49%, Shell Gas B.V (Shell) 25.6%, TotalEnergies Gaz & Electricité Holdings (TTE)15.0% and International N.A. N.V. S.à.r.l (Eni) 10.4%.

There are two tanker berths at the waterfront area of the terminal. Jetty 1 is at the north part of the terminal and is used for loading LNG and Condensate tankers. Jetty 2 on the south part and is used for loading LPG and LNG tankers. The jetties are designed to receive vessels of 160-300 metre in length and loaded displacement of 170KMT. The terminal primarily exports cargoes in ships of between LNG 120,000 m³ to 217,000 m³ capacity LPG in ship size range of 20,000m³ to 90,000m³ and Condensate in ship size range of 30KT to 35KT.

Besides the tanker export jetties there are other 3 logistic jetties for the maintenance and repair items as well as for the marine support crafts. Access to the terminal, from sea, is via the Bonny Channel, which is some 10 (ten) nautical miles long. Total distance from the Fairway Buoy (Pilot Boarding Area) to the Terminal is about 16 (sixteen) nautical miles. The charted depth is 14.3m. The recommended speed in the channel is 10 knots while the speed within the Port jetty areas is 6 knots. The terminal is open 24/7 and operates on a 'Just-in-Time' (JIT) philosophy

On the shore side area of the terminal complex is the production area. It contains the following:

- 6 Gas liquefaction Plants (6Trains)
- 4 LNG Storage tanks with a capacity of 84,200 cubic meters each.
- A Common Fractionation plant to process LPG.
- A Condensate Stabilization Unit
- 3 Condensate storage tanks with a capacity of 36,000 cubic meters each.
- 4 LPG tanks of 65,000 cubic meter each (for propane & butane).
- 10 Power generation gas turbines with a total capacity of 320 MW.

ECOPORT PERS will only apply to the terminal areas described above.

1.0.1 NLNG Environmental, Governance and Social Performance Responsibility

NLNG is aware of the environmental impact of its activities and has developed an Environmental Management System which is deployed for improvements and to mitigate against environmental, legal and reputational risks while also increasing Senior Leadership oversight, enhancing employee engagement and positively influencing suppliers, contractors and stakeholders' behaviour towards environmental excellence sustenance in the terminal.

NLNG integrates sustainability into all its business decisions and activities as part of its corporate social responsibility and advocates the preservation of the environment future generations. Information related to the NLNG Bonny Terminal is available at www.nlng.com/emi

The ECOPORT Port Environmental Review System (PERS) aligns with NLNG's ambition to be a role-model in environmental performance within its region of operation and globally.

PERS is specifically designed to assist ports and terminals in developing environmental management programs in line with the recommendations of the European Sea Ports Organisation (ESPO). The ESPO Environmental Code of Practice 2004 recommends that ports should:

- Contribute towards a sustainable logistic chain
- Engage wide consultation, dialogue and cooperation with relevant stakeholders at a local level (port users, community and NGOs).
- Generate new knowledge and technology and develop sustainable techniques which combine environmental effectiveness and cost efficiency.
- Enhance cooperation between port administrations in the field of environment, facilitate the exchange of experience and implementation of best practices on environmental issues.

- Prepare publicly available environmental policies to increase awareness of environmental concerns and integration of sustainable development.
- Conduct appropriate environmental impact assessments for both port projects and port development plans
- Stimulate continual improvement in the port environment and its environmental management
- Promote monitoring based on environmental performance indicators to measure objectively identifiable progress in environmental port practices
- Promote environmental reporting as a means of communicating environmentally good behaviours to stakeholders
- Intensify the communication about the environmental achievements made by ports

ECOPORT PERS is based on internationally recognised professional best practices and is a port specific system developed by ports for ports. It is formulated to be flexible and capable of evolution so it can be adapted to future changes in legislation and priorities for action. The system defines basic standards of good practice for the port sector e.g. the ESPO Green Guide 2012 and PPRISM Port performance Indicators.

1.0.2 Port Location and Port Area

NLNG Bonny Terminal is located on Bonny Island, on the eastern bank of Bonny River, approximately 40 km south of Port Harcourt in Rivers State, Nigeria. It covers a land area of about 2.27km² and is licensed by the NPA.

1.0.3. Legal Status and Port Operation

The NLNG Bonny Terminal is a private terminal licensed by the NPA which is the statutory regulator of all ports and terminals in Nigeria. All operations within the terminal are under the control of NLNG. Operations at the jetties are conducted on a closed gas return system. LNG ships that call at the terminal use gas as a means of propulsion and to run machinery when at the jetties. All visiting ships are required to comply with all applicable IMO and local regulations as a condition for terminal acceptance.

The terminal has substantial environmental obligations under various regulatory bodies. The relevant regulatory authorities visit the terminal for compliance inspection and audits from time to time.

1.0.4 Main Commercial Activities

The terminal serves a dedicated LNG gas liquefaction plant situated within the facility. Currently the facility has a capacity of 22MTPA. The company is currently executing an expansion project that will add 35% capacity to the facility and bring the production capacity

to 30 MTPA. Current product export ratio is about 95% LNG cargoes and 5% LPG and condensate cargoes. Annually, about 400 cargoes are exported through the terminal to different parts of the world making it one of the busiest private terminals in West Africa.

NLNG functions as a development lever of the local and national economy. Its operations have a positive effect on the social and financial well-being of the local community as well as thousands of citizens and businesses. Its new expansion project is estimated to generate up to 12,000 direct jobs during the construction phase. NLNG also plays significant roles in the development of shipping and maritime activities in the country.

1.0.4.1 Logistic Supports

The terminal has 2 logistics support jetties for maintenance, repair and operational (MRO) items and one passenger jetty for transporting passengers from the terminal to the mainland. There is a dedicated Air Strip of less than 2km for transporting workers to the mainland and international airport hubs in the country.

Other key dedicated support facilities include:

- Purpose built tugboats for towage, berthing, unberthing and emergency support services
- Purpose built pilot boats for conveying the pilots to and from the ships
- Nigerian Navy manned armoured security boats for security services
- Passenger boats for workforce transport to and from the mainland.
- Purpose built emergency service boats for responding to any marine emergency within the Terminal
- Vessel Traffic Monitoring System (VTIMS) for monitoring traffic at the channel and within the terminal waterfront.
- A pool of trained pilots from the NPA for safe and efficient handling of vessels at the terminal.

The NLNG Bonny Terminal offers unique advantages because of its strategic location and infrastructure.

Its main comparative advantages are summarised in the following:

- Closeness to the open sea – reducing vessel port transit time.
- Well sheltered thereby reducing impact of high winds on vessels at jetties
- Natural deep water thereby reducing frequent dredging maintenance.
- Adequate infrastructure to serve the largest modern gas tanker vessels.
- Co-located with other major oil company facilities –Seplat and Renaissance – enabling knowledge and service sharing to reduce overall cost
- Dedicated logistic support facilities including top class hospital and air strip.
- Dedicated channel and port infrastructure maintenance company
- Operating conditions and safety based on international standards and regulations including ISPS.
- Qualified, experienced and motivated staff for all terminal functions.
- Excellent relationship with the immediate host communities

1.0.5 Main Cargoes

- LNG
- LPG & Condensates

1.0.6 Port Environmental Management

The activities within the terminal complex are under the HSE responsibility of NLNG and as such it retains the overall environmental supervision of these activities in line with its environmental policies and management system as well as the requirements of the regulatory authorities such as NPA, NIMASA, Federal Ministry of Environment, Rivers State Ministry of Environment, amongst others.

NLNG acknowledges the significance of environmental issues related to air, soil, noise, GHG, water quality and resources consumption and accordingly seeks to achieve long-term sustainable development by minimizing harmful effects on the natural environment (air, land and water, immediate community) and the society, in all its operations, activities and facilities. In this respect, NLNG's policies are focused on minimizing emission, oil/chemical spills that can lead to contamination of the environment, waste generation from operations, the effective management of any residual waste generated from ships and other terminal facilities and

installations through recycling and re-use, monitoring of noise levels, water quality, air quality in the entire terminal complex and immediate community.

NLNG has established systems, manuals and structures with which to implement these environmental responsibilities. Some of the systems and manuals includes:

- Environmental Management System Manual certified to ISO 14001:2015
- Energy Efficiency Management System Manual certified to ISO 5001:2011
- Ship Energy Efficiency Management Plan for owned vessels.
- Greenhouse Gas and Energy Management Plan (GEMP).

The Greenhouse Gas and Energy Management plan/manual addresses issues specifically related to GHG Reduction and serves to:

- document the GHG emissions for the asset
- describe possible energy efficiency improvement and GHG reduction opportunities and recommend viable options for implementation based on preliminary evaluation.
- forecast greenhouse gases emission and energy consumption for the asset over a 10-year and 5-year period respectively.
- document relevant information such as annual emission target and key performance indicators
- provide historical perspective of asset performance against targets.
- comply to NLNG's energy policy

Shipping and Marine Decarbonization to Net Zero Emission Pathway (NLNG NZE decarbonization Pathway to 2040).

The pathway contains the key milestones and financial requirements to achieve NZE in shipping by 2040

1.0.6.1 Key Areas of Our Greenport Concept

- Long-term vision which strives towards an acceptable footprint on environment and nature
- Transparent stakeholder participation and stakeholder approved strategies to operate and grow
- Shift from sustainability as a legal obligation to sustainability as an economic driver (economic development and sustainable development as complementary factors)
- Active sharing of knowledge with other terminals and stakeholders
- Continuous striving towards innovation in process and technology

1.0.6.2 Key Issues Being Addressed

Climate change – Greenhouse gases (energy efficiency, CO₂ emissions reductions)

Air quality management

(SO_x, NO_x, Particulate Matter – PM)

Relationship between the port and local communities

- Environmental quality (soil, water, air and noise)
- Habitat and integrity of ecosystems
- Energy efficiency and energy transition (from dirty to clean and renewable energy)
- Materials and waste management
- Stakeholder participation and corporate social responsibility
- Co-operation with private sector, public authorities, NGOs, academia and other ports/terminals.

1.0.6.3 The Focus of our Port Environmental Implementation

- Continuous Environmental Improvement
Further development of the Port Environmental Management System to deliver continuous improvement of the terminal environmental performance, having as final target the PERS certification and continuous re-certification.
- Legal compliance
Compliance with all applicable national laws, port regulations and international conventions, regulations and directives.
- Contractors and Customers.
NLNG shall ensure that its customers and contractors are required to comply with all applicable environmental laws. Appropriate environmental terms and requirements are established for all kinds of contracts and supplies.
- Communication-Consultation
Carry out regular consultation and communication engagements with all stakeholders (port workforce, ships, third party transport companies, port users, contractors, suppliers) to enhance their environmental awareness and emphasize their environmental responsibilities according to the NLNG environmental policy. Proper co-operation with national/local authorities and the local community towards their environmental priorities and responsibilities.
- Employee Training-Awareness

NLNG provides adequate resources for staff training and information campaigns to keep the necessary knowledge and skills required from the nature of their activities, as well as to raise staff and port users' environmental awareness and improve port's environmental performance.

- **Accidents-Incidents**
Commitment to prevention of pollution by maintaining a high level of preparedness and organizational operation of all appropriate contingency plans to respond effectively to any incident in the terminal area liable to harm the natural and social environment.
- **Energy Management**
Implementation of schemes and actions including but not limited to energy reviews, proper infrastructure maintenance, possibilities of renewable energy resources and environmentally friendly technology to improve energy, water and fuel efficiency within terminal operations.
- **Waste Management**
Implementation of appropriate procedures for the minimization, reuse and recycling of port wastes and procurement of environmentally friendly materials, where appropriate. Continuous monitoring and supervision of both ships-generated and port's installation generated waste handling and systematic review of all relevant legislative and technical requirements.
- **Air Quality**
Implementation of a monitoring programme on air quality and CO₂ footprint estimation to identify, assess and quantify terminal's significant air emissions and develop appropriate actions and operational techniques to protect and improve air quality within the terminal area.
- **Marine Environment**
Work in consultation with all port users, local and mainland communities to identify, monitor and quantify all possible polluting loads, and development of administrative and operational techniques to eliminate such pollutants and improve the quality of the marine environment.
- **Noise Management**
Implementation of an integrated monitoring programme of the acoustic environment, covering the entire terminal complex and nearby local community, focusing on the reduction of noise levels from sources related to plant and ship operations, construction works and vehicle movement.

- **Environmental Monitoring and Review**
Monitoring, analysis, assessment, evaluation and review of the port's environmental management performance and the environmental quality of the port area with special reference to its significant environmental aspects, using the appropriate performance indicators.
- **Support Resources**
Availability of adequate human, technology, equipment and financial resources to implement and achieve the objectives of the Environmental Policy and standards.
- **Engagement and Publicity**
Implementation of a programme of regular engagement and publicity campaigns on a variety of environmental issues related to terminal activities, communication of the environmental policy and goals to all relevant stakeholders, and the annual publication of an Environmental Performance Report, available to all interested parties

1.0.6.4 NLNG Bonny Terminal Plane View



1.1 NLNG PORT ENVIRONMENTAL POLICY STATEMENTS.

NLNG shall demonstrate leadership and commitment to the environmental management system by taking accountability for the effectiveness of the Port Environmental Review System (PERS)


NLNG shall:

- Have a systematic approach to HSE management and implement a Health, Safety and Environment Management System, which ensures compliance and continuous improvement in its HSE performance.
- Comply with all relevant legislation, regulations and agreements it has entered.
- Set and measure targets for improvement and appraise and report on performance.
- Expect its staff to intervene if they believe an activity is unsafe or fails to meet NLNG's standards.
- Require contractors to manage Health, Safety and Environment in line with this policy.
- Include Health, Safety and Environment performance in the appraisal of all staff and reward accordingly.
- Use its influence to promote this policy with those with whom it does business.

1.1.1 NLNG Health, Safety and Environmental Commitment

In NLNG, we are all committed to:

- Pursue the goal of no harm to people.
- Protect the environment.
- Use raw materials and energy efficiently and minimise waste.
- Consult with our stakeholders and publicly report on our performance.
- Play a leading role in promoting best practice in the industry.
- Manage HEALTH, SAFETY and ENVIRONMENT matters as any other critical business activity.
- Promote a culture in which all NLNG contractors and employees actively demonstrate personal commitment to HSE
- Proactively manage the safety and integrity of our assets by continuously applying proven protocols and standards.
- And in this way, we aim to have an HSE performance we can be proud of, to earn the confidence of our Contractors, Suppliers, Customers, Shareholders and Society at large, and be recognised as a good neighbour and partner in sustainable development.

Signed by Terminal Manager	
Names: Captain Auwalu Hassan	
12/5/2026	
Date:	
Signature	
Signed by: AAFE3DE3DA2454	

1.1.2 Relevant UN Sustainable Development Goals Related to ESPO ECOPORT Framework

3 GOOD HEALTH AND WELL-BEING



4 QUALITY EDUCATION



6 CLEAN WATER AND SANITATION



7 AFFORDABLE AND CLEAN ENERGY



8 DECENT WORK AND ECONOMIC GROWTH



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



11 SUSTAINABLE CITIES AND COMMUNITIES



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



13 CLIMATE ACTION



14 LIFE BELOW WATER



15 LIFE ON LAND



17 PARTNERSHIPS FOR THE GOALS



RESILIENT INFRASTRUCTURE



CLIMATE AND ENERGY



COMMUNITY OUTREACH & PORT CITY DIALOGUE



SAFETY AND SECURITY



GOVERNANCE AND ETHICS



NLNG Bonny Terminal will be committed to the principles of the ESPO Green Guide and apply the Guide’s framework for action under the ‘5Es’ in its drive towards environmental excellence:

- **Exemplifying:** Setting a good example towards the wider port community by demonstrating excellence in managing the environmental performance of our operations, equipment and assets.
- **Enabling:** Providing the operational and infrastructural conditions within the terminal facility that facilitate port users and enhance improved environmental performance within the port area.
- **Encouraging:** Providing the incentives to terminal users that encourage a change of behaviour and induce them to continuously improve their environmental performance.
- **Engaging:** Engaging with terminal users and/or competent authorities in sharing knowledge, means and skills towards joint projects targeting environmental improvement in the port area and logistics chain.
- **Enforcing:** Making use of mechanisms that enforce good environmental practice by terminal users where applicable.

1.1.3 Policy Action Plan.

2021		
Initiative	Goal	Benefit
Waterfront Plastic Litter pick	Plastic litter reduction in port environment	Healthy and safe environment
Host community fisherfolk engagement	Empowerment and environmental education	Safe environment and social support
Corporate sponsorship	Contributing to educating the community and Health improvement	Empowerment and Social support
Community Engagement	Waste Management and Fire prevention	Environment and Safety Awareness.
In-Vehicle Monitoring System (IVMS) Awareness engagement	Safety Improvement and energy management	environment and Safety
2022		
Initiative	Goal	Benefit
Waterfront Plastic Litter pick	Plastic litter reduction in port environment	Healthy and safe environment
Host community fisherfolk engagement	Empowerment and environmental education	Safe environment and social support
Corporate sponsorship	Contributing to educating the community and Health improvement	Empowerment and Social support
Annual ESHMP and Impact Mitigation exercise	Environmental Impact Mitigation	Healthy Environment
NLNG Bonny Environmental Consultants Committee (BECC) Meeting	Environmental Impact Review	Safe and Healthy environment
Community Engagement	HSE enlightenment	Health awareness and social support
Biodiversity monitoring	Support to Finima Nature Park	Biodiversity protection
Celebration of World Environmental Day	Enlighten society on environmental issues	Health awareness and social support
2023		
Initiative	Goal	Benefit
Waterfront plastic and litter pick	Plastic and litter reduction	Healthy and safe environment

Greenhouse Gas Energy Abatement Workshop	Net-Zero Emission Roadmap	Climate change Mitigation
Corporate Sponsorship	Education and Empowerment	Empowerment and Social support
Community fisherfolk Engagement	Plastic litter and channel Navigation safety	Environment and safety of navigation
Celebration of World Environmental Day	Environmental aspect awareness and impact mitigations	Environment enlightenment and social support
Annual NLNG Contractor CEO HSE Workshop	Health, Safety and Environmental Awareness and Recognitions	Safety an Environmental Commitment
Tree Planting Exercise	Re-forestation	Prevent erosion
Fleet Vehicle Renewal	Safety and Energy management	Environment and safety
Land transport Mobility Solution	Cleaner Source of Energy for NLNG operated vehicles	Healthy and safe Environment for staff
Domestic LNG Supply Initiative	Cleaner Energy for in-country Power Generation	Environmental Commitment
Carbon Sustainability/Green LNG Opportunity Framing Workshop	Net-Zero Emission Reduction Workshop	GHG and Environmental Commitment
2024		
Green Roof certification	Cleaner alternative Source of Energy in the Residential area	Healthy and safe Environment
Bonny Secondary school environmental awareness and education	Empowerment and environmental education	Health awareness and social support
Smart Port Automation	Net-Zero Emission Reduction through efficient use of port assets	GHG and Environmental Commitment
Portable Pilot Unit	Net-Zero Emission Reduction through efficient use of port assets	GHG and Environmental Commitment
Eco Alert	Create awareness environmental changes	Healthy and safe Environment

1.2 ENVIRONMENTAL ASPECTS AND LEGAL REQUIREMENTS

Environmental Aspects are those elements of NLNG's activities, products and services that can interact with the environment. In identifying and reviewing the aspects and associated impacts, NLNG adopts the life cycle perspective.

This process considers:

- Emissions to atmosphere
- Discharges to water
- Management of waste
- Noise level
- Contamination of soil and groundwater
- Use and management of raw materials and natural resources
- Community and Relationship Management
- Marine ecosystems
- Habitat and biodiversity

The identification of environmental aspects is undertaken:

- Whenever a new activity, product or service is planned
- Whenever a significant modification to an activity, product or service is proposed
- Whenever a change to relevant or applicable legislation and or regulations occurs.

Aspects identified will be considered under the following modes of operation:

- Normal operations
- Abnormal operations e.g. start-up and shut down, major maintenance
- Reasonably foreseeable emergency situations (ref: HSE Case)

In addition to the use of the NLNG Risk Assessment Matrix (RAM) for the assessment and categorization of aspects and impacts the following principles generally apply:

- All environmental discharges and wastes for which, NPA, FMEEnv, The Authority or NIMASA permit / license limits apply are assessed as significant.
- All environmental discharges and wastes with a demonstrable environmental effect are assessed as significant.
- All environmental discharges and wastes of concern to employees or the local communities are assessed as significant.

a) Controls are in place for all the identified aspects.

b) Description of the preventative measures or other controls used to minimize the impacts.

These include:

- Mechanical or equipment standards and safeguards
- Work procedures to control the impact
- Maintenance procedures
- Monitoring and testing schedules.

c) Details of the monitoring or recording process to ensure that the controls are effective.

d) Designation of the person or group responsible for developing the control

- and reviewing and maintaining its effectiveness.

e) Effectiveness of the controls and whether the residual risk is adequate. This is seen to be the case if the risk is as low as reasonably practicable or ALARP.

- This residual risk is re-assessed if monitoring data, non-conformances or
- incident reports warrant a re-evaluation. This is an on-going process.

The identification and prioritization of these environmental aspects associated with NLNG's activities is done through risk assessment. A sample of the environmental risk register is attached as **Appendix 1**

1.2.1 Environmental Aspects related to each Department/Division

While the HSE Department is the over-all coordinator, each department or area or business function is made to be fully aware of its environmental aspects, the legal requirements as well as the actions to eliminate or mitigate any impacts of their activities on the environment.

Table 2 Functional Environmental Aspects and Impacts Register.

Ref.	Department, tenant, operators	Impact on	Responsible Party	Applicable Legislation	Legal Requirements	Control measure
1	SHIPPING AND MARINE OPERATIONS					
i	Maintenance Dredging	Biodiversity, contamination, waste, and hydrocarbon pollution	Terminal Manager	NPA Regulation	Material suitable for offshore disposal. Placement in designated spoil ground. Appropriate Waste Management	NPA Permit/approval for dredging and disposal required
ii	Fleet Marine Support Craft	Emission, Waste	Terminal Manager	NIMASA and NPA Regulations	NPA and NIMASA Pollution Regulations	NLNG Waste Disposal and Emergency Efficiency Management compliance monitoring.
iii	MOF Operations	Wastes, Emissions, Spills	Terminal Manager	NIMASA Regulations	NPA and NIMASA Regulations	NLNG Terminal Waterfront Procedures compliance monitoring.

iv	Handling Dangerous Goods	Emission, Spills and Leaks,	Logistics Manager and Contract, Procurement and Material Manager	IMDG Cases	Storage Requirements. Placarding	NLNG Dangerous Goods Emergency Response Procedures
v	International Vessels	Emission, Ballast Water, Biosecurity	Terminal Manager	Ballast Water Management Plan.	Ballast Water regulation, IMO Marpol Regulations	Environmental Management Procedures, Ballast water lab test
2	PRODUCTION DIVISION					
i	Plant Operation	Emission, Noise, Soil and water contamination	Operations Manager	The Authority & Federal Ministry of Environment	<ul style="list-style-type: none"> *The Mineral Oils (Safety) Regulations 1997 * Petroleum Regulations 1967 * The Petroleum Industry Act 2021 * New Flare Gas 	<ul style="list-style-type: none"> *NLNG Energy Policy. NLNG HSSE & SP controls. * The Authority's *Environmental Guidelines & Standards for Petroleum Industry in Nigeria (EGASPIN) * FME's Guidelines and Standards for Environmental Pollution Control in Nigeria (Green

					Prevention of Waste and Pollution Regulations, 2018	<p>Book)</p> <ul style="list-style-type: none"> * HSSE & SP Control Framework * The HSE Performance, Monitoring and Reporting (PMR) standard. * API Compendium of Greenhouse Gas Emission Methodologies for the Oil and Gas Industry * ISO-50001 Energy manual
3	TECHNICAL DIVISION					
i	Maintenance and Improvement Projects	Disturbance to Heritage items, Biodiversity, Noise, Erosion,	Front End Development and Technical Interface Manager and Project	The Authority & Federal Ministry of Environment	<ul style="list-style-type: none"> *The Mineral Oils (Safety) Regulations 1997 * Petroleum 	<ul style="list-style-type: none"> *Environmental Impact Assessment. *Contractor Management system

		Land pollution Waste	Delivery Manager		<p>Regulations 1967</p> <p>* The Petroleum Industry Act 2021</p> <p>* New Flare Gas Prevention of Waste and Pollution Regulations, 2018</p>	<p>NLNG Energy Policy. NLNG HSSE & SP controls. *</p> <p>The Authority's *Environmental Guidelines & Standards for Petroleum Industry in Nigeria (EGASPIN)</p> <p>* FME's Guidelines and Standards for Environmental Pollution Control in Nigeria (Green Book)</p> <p>* HSSE & SP Control Framework</p> <p>* The HSE Performance, Monitoring and Reporting (PMR) standard.</p> <p>* API Compendium of Greenhouse Gas Emission</p>
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						<p>Methodologies for the Oil and Gas Industry</p> <p>* ISO-50001 Energy manual</p> <p>* Design Engineering Practice</p>
ii	GHG and Impact of Climate Change on Company Infrastructure	Implications of sea level rise on Terminal infrastructure	Front End Development and Technical Interface and Project Delivery Manager	The Authority & Federal Ministry of Environment	<p>*The Mineral Oils (Safety) Regulations 1997</p> <p>* Petroleum Regulations 1967</p> <p>* The Petroleum Industry Act 2021</p> <p>* New Flare Gas Prevention of Waste and Pollution Regulations, 2018</p>	<p>*Environmental Impact Assessment.</p> <p>*Contractor Management system</p> <p>NLNG Energy Policy. NLNG HSSE & SP controls.</p> <p>The Authority's *Environmental Guidelines & Standards for Petroleum Industry in Nigeria (EGASPIN)</p> <p>* FME's Guidelines and Standards for</p>

						<p>Environmental Pollution Control in Nigeria (Green Book)</p> <p>* HSSE & SP Control Framework</p> <p>* The HSE Performance, Monitoring and Reporting (PMR) standard.</p> <p>* API Compendium of Greenhouse Gas Emission Methodologies for the Oil and Gas Industry</p> <p>* ISO-50001 Energy manual</p> <p>* Design Engineering Practice</p>
4	CORPORATE SERVICES					
i	Vehicle Fleet Logistics	Emission	Logistic Manager	Y		Regular maintenance and renewal program,

						IVMS, Fuel usage monitoring and reporting
ii	Marine logistics	Emission, Hydrocarbon pollution	Logistic Manager	NPA, NIMASA	Emission and Reporting, No unlawful pollution	Emission and fuel usage monitoring and reporting, Bi-monthly safety inspection
iii	Air Logistics	Emission	Logistic Manager	NCAA, NAMA		Inspections,
iv	IT Infrastructure	E-Waste, Energy usage	IMT Manager	NTDA		Waste Management procedure
5	CONTRACTS AND PROCUREMENT					
i	Procurement	Wastes Generation	Procurement Manager	Public procurement Laws and Regulations, 2021, Public Procurement Act 2007	Risk Assessment and Environmental Impact Assessment.	Procurement policy
6	EXTERNAL RELATIONS					
i	Engagement with the host community	Complaints arising from plant and terminal operation	Community Relations Manager	National Noise Standards SI 35	Noise mapping and noise criteria	Community management procedure
7	WORK HEALTH					

	Health and Wellness	Mental Health, Physical Wellbeing	Corporate Medical Services Manager	<p>1. Quarantine Act, 1954 An Act to provide for and regulate the imposition of quarantine and to make other provisions for preventing the introduction into and spread in Nigeria, and the transmission from Nigeria, of dangerous infectious diseases.</p> <p>2. Factory Act 1990 Occupational/Health and Safety Act, 1994</p>	<ul style="list-style-type: none"> • Federal Environmental Protection Agency Act of 1988 (FEPAAct). The following Regulations were made pursuant to the FEPAAct: • National Environmental Protection (Effluent Limitation) Regulations: • National Environmental Protection (Pollution Abatement in Industries and 	
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				<p>Facilities Generating Wastes) Regulations; and</p> <ul style="list-style-type: none"> • National Environmental Protection (Managem ent of Solid and Hazardous Wastes) Regulations. • Environm ental Impact Assessment Act of 1992 (EIA Act). • Harmful Wastes (Special Criminal Provisions 	
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					etc.) Act of 1988 (Harmful Wastes Act).	
8	EXPANSION					
i	Expansion Projects (T7)	Disturbance to Heritage items, Biodiversity, Noise, Erosion, Land pollution Waste	HSSE & SP Manager	The Authority & Federal Ministry of Environment	<p>*The Mineral Oils (Safety) Regulations 1997</p> <p>* Petroleum Regulations 1967</p> <p>* The Petroleum Industry Act 2021</p> <p>* New Flare Gas Prevention of Waste and Pollution Regulations, 2018</p>	<p>*Environmental Impact Assessment.</p> <p>*Contractor Management system</p> <p>NLNG Energy Policy. NLNG HSSE & SP controls. *</p> <p>The Authority's *Environmental Guidelines & Standards for Petroleum Industry in Nigeria (EGASPIN)</p> <p>* FME's Guidelines and Standards for Environmental Pollution</p>

						<p>Control in Nigeria (Green Book)</p> <p>* HSSE & SP Control Framework</p> <p>* The HSE Performance, Monitoring and Reporting (PMR) standard.</p> <p>* API Compendium of Greenhouse Gas Emission Methodologies for the Oil and Gas Industry</p> <p>* ISO-50001 Energy manual</p> <p>* Design Engineering Practice</p>
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1.2.2 Environmental Regulations

This section describes the process used by NLNG to identify and have access to legal and other requirements relating to the environment.

These requirements include those of the Nigerian Federal Government, Rivers State and Bonny Local Government laws, regulations, licenses, permits, memoranda of understanding and other agreements of environmental significance. Also included are voluntary agreements entered into by NLNG adopting international conventions and best practices such as ECOPORT Port Environmental Review System (PERS) and United Nations Sustainable Development Goals (UN SDGs).

A register of the laws, permits, regulations and other requirements governing the operation of the NLNG Environmental Management System (EMS) are set out in a separate procedure.

Vessels also comply with IMO regulations and norms, such as the International Convention for the Prevention of Pollution from Ships (Marpol 73/78), IMO GHG Regulations and the London Dumping Convention on the control of Harmful, Anti-fouling Systems to ships (1996)

Periodic audits to evaluate compliance with legal and other requirements is conducted by internal auditors.

Table 2 Some National Environmental Laws and Regulations

S/N	Law	Purpose of the Law	National Authority	Local Enforcement Agency
1	Marine Environment (Prevention of pollution by Garbage) Regulation 2012	Prevention of Water Pollution by Garbage from ships	NIMASA	NPA
2	Noise (Control) Law (Cap. 89 LRS 1999)	Made to control point sources of noise within Port Harcourt City	RSMEEnv	RSMEEnv (Vehicle Inspectorate; Nigerian Police Force; Port Harcourt City Council).
3	Harmful Wastes (Special Criminal Provision) Act 1988	An Act to prohibit the carrying, depositing and	FMEnv	Zonal Office, FMEnv Port Harcourt

		dumping of harmful waste on any land, territorial waters and matters relating thereto		
4	Rivers State Environmental Protection Agency	Protection, conservation and sustainable development of the state's natural resources and Marine environment	RSMEEnv	RSMEEnv
5	Environmental Impact Assessments Act 1992	An Act to set out the general principles, procedure and methods to enable the prior mandatory consideration of environmental impact assessment on certain public or private projects	FMEnv	Zonal Office, FMEnv Port Harcourt
6	Federal Environmental Protection Agency Act.	Prohibition of the discharge in harmful quantities of any hazardous substance into the air or upon the land and waters of Nigeria or at the joining shorelines	FMEnv	Zonal Office, FMEnv Port Harcourt
7	National Environmental Protection (Pollution Abatement in Industries and Facilities Producing Waste Regulations	An Act to regulate pollution caused by industrial wastes and have established pollution monitoring Unit on site.	FMEnv	Zonal Office, FMEnv Port Harcourt

8	National Guidelines and Standards for The Water Quality in Nigeria	To Maintain good water quality	FMEnv	Zonal Office, FMEnv Port Harcourt
9	National Environmental Standards and Regulations Enforcement Agency (NESREA) (Establishment) Act 2007.	Prohibition of discharge of hazardous substances into the Air, Water or Land.	NESREA	Zonal Office, NESREA Port Harcourt

Table 3. Some Key International Conventions Related to Terminal Operations

CONVENTION		OBJECTIVES	CORRESPONDING LOCAL LEGISLATION
1	International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto and by the Protocol of 1997 (<u>MARPOL</u>)	MARINE POLLUTION PREVENTION	<ul style="list-style-type: none"> • Merchant Shipping (Prevention of Oil Pollution) Regulations 2012. • Marine Environmental (Prevention of Pollution by Garbage) Regulations 2012. • National Environmental Standards and Environment Agency (Establishment) Act 2007 Section 20. Air quality and atmospheric protection.
2	Convention on the Prevention of Marine Pollution by <u>Dumping of Wastes and Other Matter</u> (LC), 1972 (and the 1996 London Protocol)	Dumping of harmful waste on any land, territorial waters and matter relating thereto	<ul style="list-style-type: none"> • Harmful Wastes (Special Criminal Provision) Act 1988 • Merchant Shipping (Sea Dumping) Regulations, 2012

			<ul style="list-style-type: none"> National Environmental Protection (Pollution Abatement in Industries and Facilities Producing Waste Regulations)
3	International Convention for the Control and Management of <u>Ships' Ballast Water and Sediments</u> , 2004	Prevention of Pollution from Ballast Water and Sediments	Merchant Shipping (Ballast Water Management) Regulations, 2012
4	International Convention on Liability and Compensation for Damage in Connection with the <u>Carriage of Hazardous and Noxious Substances by Sea</u> (HNS), 1996 (and its 2010 Protocol)	Prevention of damage by hazardous cargoes	Merchant Shipping (Dangerous or Noxious Liquid Substances in Bulk) Regulations, 2012
5	Nairobi International Convention on the <u>Removal of Wrecks</u> , 2007	Removal of wrecks which constitute navigation risks, and which is a threat to the marine environment.	NIMASA Act. Reg. 44 (1) b- Wreck Removal.
6	International Convention on the Control of Harmful <u>Anti-fouling Systems</u> on Ships (AFS), 2001	Prevention of pollution of environment with harmful chemicals	Merchant Shipping (Anti-Fouling Systems) Regulations, 2012

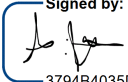
Independent Verification of the Correctness of Presented Laws

Please see the appendix

DECLARATION

The undersigned, attorney of law in organisation, has controlled the overview of legal requirements in the PERS report of NLNG Bonny Terminal, Nigeria and declares that the contents are related with the applicable laws and regulations.

This declaration applies to the ECOSLC's EcoPorts Certification only.

Signed by:

-----3794B4035DE84AE-----

Signature -----

Akachukwu Nwokedi

Company Secretary & General Counsel

Nigeria LNG Limited

NLNG Corporate Head Office

NLNG Road, Amadi Creek, Port Harcourt, Rivers State, Nigeria

1.2.3 Environmental Performance Indicators

NLNG has identified the following environmental performance indicators that relate to its significant environmental aspect, policy and key environmental objectives. These indicators are monitored as appropriate, and the overall annual performance recorded.

Table 4. Environmental Performance Indicators

Item	Significant Environmental issues	Env. Impact / issue	Port Policy	Actions taken	Responsible Action party	Key Performance Indicator (KPI)	Concrete Targets		Measured Results		Targets next 2 years	
							Last 2 years		Last 2 years			
							2023	2024	2023	2024	2025	2026
1	Air Quality	Emission of PM10, PM2.5, SO2, NO2	To improve air quality by continuous reduction of polluting emission in the air	Maintain full functional shore power supply for support craft.	PCN	Number of Functional shore Power Supply facilities	5 Functional shore Power Supply facilities	5 Functional shore Power Supply facilities	5 Functional shore Power Supply facilities	5 Functional shore Power Supply facilities	5 Functional shore Power Supply facilities	5 Functional shore Power Supply facilities
				Transition of our Land Transport Fleet to zero- and low-carbon emission alternative energy			CSL/1	Number of Internal Combustion Engine (ICE) vehicles replaced by zero- and low-carbon emission	5 ICEs	24 ICEs	5 ICEs	24 ICEs

				powered vehicles		alternative annually						
				Alternative energy power supply (solar) for NLNG assets (RA, IA and Nature Park in execution and plan)	CTE/2	Initiatives commenced and completed (CO2 abatement)	1-NLNG GUEST HOUSE 1 – Pilot Solar power Installation 2- NLNG Security Shelters Solar Power Pilot Installation 3-Solar Powered Electric Vehicle Charger	NLNG Residential Area Golf Course Solar Lighting Installation	1 - NLNG GUEST HOUSE 1 – Pilot Solar power Installation 2- NLNG Security Shelters Solar Power Pilot Installation 3 - Solar powered Electric Vehicle	1. NLNG Residential Area Golf Course Solar Lighting Installation 2. Corporate Head Office (CHO) Transit Building Solar Power Installation 3. Commencement of CHO Solar power	1. Finima Nature Park solar power installation 2. Corporate Head Office (CHO) Transit Building Solar Power Installation 3. Commencement of CHO Solar power	Alternative energy power supply (solar) for NLNG assets (RA, IA and Nature Park in execution and plan)

							Project – Pilot Implementation at NLNG IA and RA in Bonny (To support procured and planned EVs)		Charger Project– Pilot Implementation at NLNG IA and RA in Bonny (To support procured and planned EVs)		installation project.	
2	Carbon Footprint (GEI)	Human health wellbeing, global warming and climate change	Significant reduction of emissions.	Identification of emission source, robust measurement, reporting and verification (MRV)	CTE	Year on year improvement.	0.400 (tCO ₂ e/tLNG)	0.400	0.430	0.405	0.409	0.400

3	Debris and Erosion Monitoring	Human health wellbeing and operational efficiency	Improve operational efficiency and early detection of siltation	Periodic Bymetric survey	NST	Twice a year.	2 Times	N/A	N/A	2 times	NIL	2 times
4	Noise	Human health and wellbeing	Improve the quality of life of workers and the community	Monthly noise monitoring around the facility	HSE/6	Maintain the noise level within 70 decibel day and night within the perimeter fence. 50&45 decibel day and night respectively within the community	90.1% compliance	95.1% Compliance	95.4% compliance	94% compliance	99% compliance	100% compliance
5	Energy Efficiency	Greenhouse Gas Emission	NLNG is committed to operating its business in an energy efficient manner by	Measure, evaluate and always work towards improving energy efficiency:	PSU	Year on year improvement	6,000 (MJ/tLNG)	6,000	6,137	5,643	6,000	6,000

			minimising waste and continuously improving its energy performance in all activities.	1-Trains Shutdown for Energy Conservation 2-Gas Turbine Generator Shutdown for power generation optimisation etc								
6	Garbage and Waste	Human health and wellbeing and operational efficiency	Improve operational efficiency and reduce waste generated	Waste management plan	HSE/6	Year on year improvement on waste reduction	Waste reduction by 62%	Waste reduction by 78%	Waste reduction by 59.52%	Waste reduction by 53.69%	Waste reduction by 54%	Waste reduction by 50%
7	Soil Contamination	Soil and water quality	Preservation of environmental quality	Identification, characterization and remediation of contaminated soil.	HSE/6	Timeliness of remediation of contaminated soil	2 months	2 months	3 months	3 months	2 months	2 months

8	Industrial Effluent Discharges	Aquatic life, environmental quality	Preservation of environmental quality	Monitoring of effluent quality		% compliance with regulatory limit.	100%	100%	94.98%	93.5%	100%	100%
9	Marine Ecosystem	Water pollution	Early detection of contamination and regulatory compliance	Monthly sample collection and testing	HSE/6	Monitoring of key quality parameters (Physical, Chemical and Biological – 4 times annually	4times	4times	4times	4times	4times	4times
		Water pollution by plastic litter	Promote clean sea by reducing plastic litters	Periodic clean-up of waterfront	NST	At least 2 Marine Litter and plastic clean up at the terminal	2 clean ups	2 clean ups	3 clean ups	3 clean ups	4 clean ups	4 clean ups
		Human health and operational efficiency	Early detection of siltation	Periodic Bymethric survey and	NST	One Survey and testing of sediments	NIL	NIL	NIL	2 times	NIL	2 times

				sediment test		and dredge dumpsite soil – annually.						
10	Relations hip with the host community	Human health wellbeing	manage waste generation and disposal	Timely evacuation of waste by disposal agency	HSE/6	Zero complaints on terminal environmental issues.	Zero Complaints	Zero Complaints	Zero Complaints	Zero Complaints	Zero Complaints	Zero Complaints
		Human health, wellbeing	Communicate updates on Impacts from terminal Activities on Community Lifestyle	Periodic Community engagement	ERC	4 Engagements and Events	4 Engagements held	4 Engagements held	4 Engagements held	4 Engagements held	4 Engagements held	More than 4 Engagements held
11	Relations hip with stakeholders	Climate Change impact on shipping /Port Operation	Compliance with Laws, Standards and	Compliance Monitoring and sensitisation	HSE/6	2 Engagements per annum	2 Engagements held	2 Engagements held	2 Engagements held	3 Engagements held	3 Engagements held	3 Engagements held

			Regulations	on changes in regulatory requirement.								
12	Water Consumption	Sustainability	Ensure availability of water to support production demands	Monitoring consumptions for early detection of leaks	PSU	Year on year improvement Consumption is largely dependent on the Loading of LNG Trans 1/2/3	12,111,000 tons	9,825,300 tons	8,451,200 tons	12,111,000 tons	12,111,000 tons	12,111,000 tons
13	Terrestrial habitats	Loss of biodiversity, deforestation, poaching, erosion	Preservation of biodiversity and environmental	Anti-poaching and anti-encroachment patrol,	HSE/6	Number of biodiversity survey campaigns	4	4	4	4	3	3

			conservation	reforestation, habitat and species monitoring		Hectares restored	Nil	Nil	No record	No record	Nil	70 hectares
						Carbon sequestration	Nil	Nil	247,148. 78 tCO2e (2019 study)	247,148. 78 tCO2e (2019 study)	Nil	
						Tree planting and tagging	50000 trees	50,000 trees	62,805 trees	50,000 trees	50,000 trees	60,000 trees

1.3 RESPONSIBILITIES AND RESOURCES

NLNG leadership – the Executive Management (EM) and Senior Management Team (SMT) shall demonstrate leadership and commitment to the environmental management system

1.3.1 NLNG Environmental Responsibility

NLNG integrates management of environmental issues into its mainstream operations. Competency assessment and training programs for operational tasks include assessments and training in environmental aspects as appropriate.

Environmental responsibilities of staff are set through job descriptions developed by the NLNG Health, Safety and Environment Department.

In addition to the general responsibilities above, individuals have specific HSE responsibilities. These are set out in job descriptions and also described in NLNG procedures, manuals and work instructions referenced throughout this document. There are also several specific programs in which the environment is the primary focus together with lists of those who have attended. These are set out in a data base. Contracted field employees also receive training in chemicals handling provided by an in-house or external training resource.

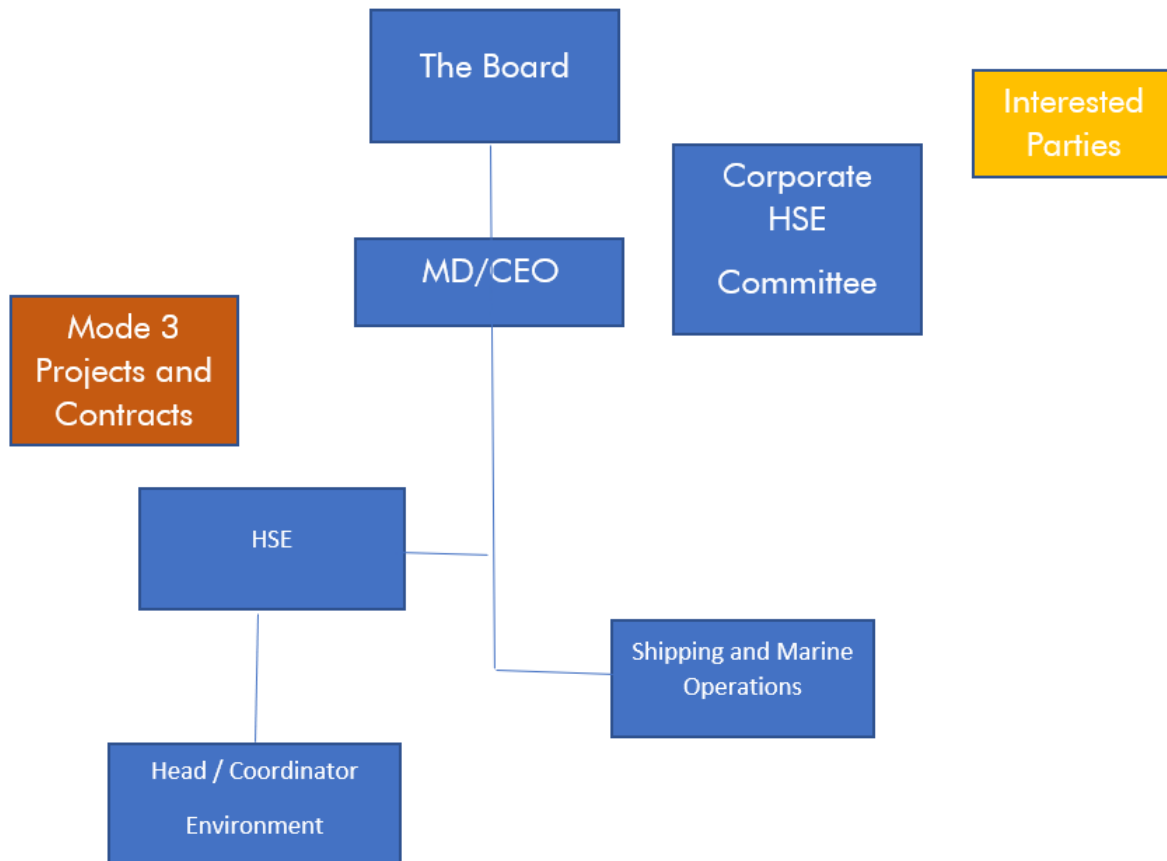
All NLNG workforce have a general obligation to comply with applicable environmental legislation as described in all position descriptions. NLNG ensures that its workforce is equipped to fulfil their obligations through the provision of adequate training, communication and information.

1.3.2 Environmental Responsibility Within the Terminal Area

NLNG is responsible for environmental issues in the areas within its control. However, there are other stakeholders that have responsibilities regarding environment within NLNG control areas and the public area of the port. See table—below

National	Federal regulators, National Policy Makers, Implementation of IMO legislation
Regional	State Regulators, regional and local policy makers, implementation of national legislation, issuing and enforcement of licences, approvals and permits. Nigeria Port Authority, Harbour Master, NIMASA.
Port Users	Individual organisations applying for and operating in accordance with relevant permits, approvals and licences. Compliance with legislation.

Abridged Organogram for NLNG Terminal Environmental Management



1.3.3 Responsibilities of Key Personnel

OPERATION	JOB TITLE	DEPARTMENT/ DIVISION
Terminal Shipment Operations	Manager Terminal Services	NSML
Terminal Support Craft Operations	Manager Terminal Services	NSML
Terminal Logistic Jetty Operations	Manager Terminal Services	NSML

Export Cargo Loading Operations	Manager Production Operation	Production
Dredging Operations	Manager Terminal Services	NSML
Permit and Licences	Manager, Government Relations	External Relations and Sustainable Development
Plant Projects	Project Manager	Technical Services
Maintenance	Maintenance Manager	Production
Onsite Contractor Management	Asset Manager	Production
Waste Management	HSE Manager	Managing Director
Emergency Planning	HSE Manager	Managing Director
Environmental Document Management	HSE Manager	Managing Director
Environmental Data Management	HSE Manager	Managing Director
Soil Contamination Assessment	HSE Manager	Managing Director
Energy and Carbon footprint Monitoring	Production Support	Production
Air Quality Monitoring	HSE Manager	Managing Director
Noise Monitoring	HSE Manager	Managing Director
Vessel Traffic Management and Monitoring	Manager Terminal Services	NSML
Vehicular traffic management	Logistics Manager	Corporate Services
Community Complaints Management	Manager Community Relations	External Relations and Sustainable Development
Procurement	Manager Contracting, Procurement & Materials	Managing Director

1.3.4 Environmental Resource Allocation

NLNG has been investing in environmental impact management since its establishment. These costs are mainly divided into staff, environmental maintenance and management, environmental monitoring, emergency response and communication. The purpose of these investments is to continually improve the environmental awareness among staff, environmental maintenance, environmental quality, emergency response capabilities, public understanding and social approval of the terminal.

NLNG shall maintain its commitment in the provision of resources for the implementation of PERS. The amount budgeted in 2021-2024 is as stated in table 5

Table 5 Environmental Annual Budget Allocation for 2021-2024

ECOPORT Documentation for Certificate Renewal. Required HSE input

		2021	2022	2023	2024	
Part of Organisation	Item	Budget Amount Allocated USD\$ (Approx.)				Remarks
Staff	Health and Safety Staff cost – Marine and Environment	300,000.00	688,717	680,803	1,028,571	Data provided is for HSE Partners estimated figures as budgeted.
Staff Development	Training	100,000.00	4,956	57,782	68,274	
Environmental, Maintenance and Management	Port Greening (plantation and waterfront maintenance)	Nothing Yet.	225,529	277,738	254,729	
Sewage	Maintenance sewage treatment equipment	450,000.00				
Environmental Monitoring	Environmental Monitoring plan for operation area of new developed area e.g. T7	525,000.00	104,965	139,168	76,267	
Emergency Response	Oil-absorbent Cotton for oil pollution treatment Surveillance boat Containment booms	465,000.00	548,663	393,941	45,000	
Special Training	Dangerous goods / Hazardous Materials training fees	125,000.00				Our training information will suffice.

1.4 CONFORMITY REVIEW

NLNG leadership – the Executive Leadership (EL) and Senior Leadership Team (SLT) shall demonstrate leadership and commitment to the environmental management system

Item	Significant Environmental issues	Env. Impact / issue	Port Policy	Actions taken	Responsible Action party	Key Performance Indicator (KPI)	Concrete Targets		Measured Results		Conclusions about policy results last 2 years and recommendation for the next 2 years	Conclusion about Policy Plans for 2025-2026
							Last 2 years		Last 2 years			
							2023	2024	2023	2024		
1	Air Quality	Emission of PM10, PM2.5, SO2, NO2	To improve air quality by continuous reduction of polluting emission in the air	Maintain full functional shore power supply for support craft.	PCN	Number of Functional shore Power Supply facilities	5 Functional shore Power Supply facilities	5 Functional shore Power Supply facilities	5 Functional shore Power Supply facilities	5 Functional shore Power Supply facilities	Target was realized	Plan is to sustain 5 Fully functional shore power supply
				Transition of our Land Transport Fleet to zero- and low-carbon emission alternative energy powered vehicles	CSL/1	Number of Internal Combustion Engine (ICE) vehicles replaced by zero- and low-carbon emission alternative annually	5 ICEs	24 ICEs	5 ICEs	24 ICEs	Target was realized	31 ICEs

				Alternative energy power supply (solar) for NLNG assets (RA, IA and Nature Park in execution and plan)	CTE/2	Initiatives commenced and completed (CO2 abatement)	<p>1-NLNG GUEST HOUSE 1 – Pilot Solar power Installation .</p> <p>2- NLNG Security Shelters Solar Power Pilot Installation .</p> <p>3-Solar Powered Electric Vehicle Charger Project – Pilot Implementation at</p>	NLNG Residential Area Golf Course Solar Lighting Installation.	<p>1 - NLNG GUEST HOUSE 1 – Pilot Solar power Installation.</p> <p>2- NLNG Security Shelters Solar Power Pilot Installation.</p> <p>3 - Solar powered</p>	<p>1. NLNG Residential Area Golf Course Solar Lighting Installation.</p>	Target was realized	Alternative energy power supply (solar) for NLNG assets (RA, IA and Nature Park in execution and plan)
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							NLNG IA and RA in Bonny (To support procured and planned EVs)		Electric Vehicle Charger Project – Pilot Implementation at NLNG IA and RA in Bonny (To support procured and planned EVs)			
2	Carbon Footprint (GEI)	Human health, wellbeing, global warming and climate change	Significant reduction of emissions.	Identification of emission source, robust measurement, reporting and	CTE	Year on year improvement.	0.400 (tCO2e/tLNG)	0.400	0.430	0.405	Target not met. recommendations	Review target base on results

				verification (MRV)							Continuous detailed noise mapping, optimize operational controls	
3	Debris and Erosion Monitoring	Human health, wellbeing and operational efficiency	Improve operational efficiency and early detection of siltation	Periodic Bymetric survey	NST	Twice a year.	2 Times	N/A	N/A	2 times	Target met	Periodic turnaround maintenance
4	Noise	Human health and wellbeing	Improve the quality of life of workers and the community	Monthly noise monitoring around the facility	HSE/6	Maintain the noise level within 70 decibel day and night within the perimeter fence. 50&45 decibel day	9.9% noise quality off spec	4.9% noise quality off spec	4.6% noise quality off spec	6% noise quality off spec	Target is met and a plan to sustain continuous waste reduction is in place	Waste reduction by 50%

						and night respectively within the community						
5	Energy Efficiency	Greenhouse Gas Emission	NLNG is committed to operating its business in an energy efficient manner by minimising waste and continuously improving its energy performance in all activities.	Measure, evaluate and always work towards improving energy efficiency: <ul style="list-style-type: none"> - Trains Shutdown for Energy Conservation - Gas Turbine Generator Shutdown for power generation optimisation etc	PSU	Year on year improvement	6,000 (MJ/tLNG)	6,000	6,137	5,643	Target was realized	On time turn around maintenance to sustain 6,000 (MJ/tLNG)
6	Garbage and Waste	Human health, wellbeing and operational efficiency	Improve operational efficiency and reduce	Waste management plan	HSE/6	Year on year improvement	Waste reduction by 62%	Waste reduction by 78%	Waste reduction by	Waste reduction by	Target was realized	Waste reduction by

			waste generated			nt on waste reduction			59.52 %	53.69 %		50% in 2026
7	Soil Contamination	Soil and water quality	Preservation of environmental quality	Identification, characterization and remediation of contaminated soil.	HSE/6	Timeliness of remediating contaminated soil	2 months	2 months	3 months	3 months	Target was realized	2 months
8	Industrial Effluent Discharges	Aquatic life, environmental quality	Preservation of environmental quality	Monitoring of effluent quality	HSE/6	% compliance with regulatory limit.	100%	100%	94.98 %	93.5%	Target was realized	100%
9	Marine Ecosystem	Water pollution	Early detection of contamination and regulatory compliance	Monthly sample collection and testing	HSE/6	Monitoring of key quality parameters (Physical, Chemical and Biological – 4 times annually	4times	4times	4times	4times	Target was realized	To sustain same target

		Water pollution by plastic litters	Promote clean sea by reducing plastic litters	Periodic clean-up of waterfront	NST	At least 2 Marine Litter and plastic clean up at the terminal	2 clean ups	2 clean ups	3 clean ups	3 clean ups	Target was realized	4 clean ups
		Human health, wellbeing and operational efficiency	Early detection of siltation	Periodic Bymethric survey and sediment test	NST	One Survey and testing of sediments and dredge dumpsite soil – annually.	NIL	NIL	NIL	2 times	Target was realized	2 times
10	Relations hip with the host community	Human health, wellbeing	manage waste generation and disposal	Timely evacuation of waste by disposal agency	HSE/6	Zero complaints on terminal environmental issues.	Zero Complaints	Zero Complains	Zero Complains	Zero Complains	Target was realized	No complaints
		Human health, wellbeing	Communica te updates on Impacts from	Periodic Community engagement	ERC	4 Engageme nts and Events	4 Engageme nts held	4 Engagem ents held	4 Engag ements held	4 Engag ements held	Target met	More than 4 Engag

			terminal Activities on Community Lifestyle									ements held
11	Relations hip with stakeholders	Climate Change impact on shipping /Plant Operation	Compliance with Laws, Standards and Regulations	Compliance Monitoring and sensitisation on changes in regulatory requirement.	HSE/6	2 Engageme nt per annum	2 Engageme nts held	2 Engagem ents held	2 Engag ements held	3 Engag ements held	Target exceeded	3 Engag ements held
12	Water Consump tion	Sustainability	Ensure availability of water to support production demands	Monitoring consumptions for early detection of leaks	PSU	Year on year improve ment Consumpti on is largely dependent on the Loading of LNG Trans 1/2/3	12,111,000 tons	9,825,300 tons	8,451,200 tons	12,111,000 tons		

13	Terrestrial habitats	Loss of biodiversity, deforestation, poaching, erosion	Preservation of biodiversity and environmental conservation	Anti-poaching and anti-encroachment patrol, reforestation, habitat and species monitoring	HSE/6	Number of biodiversity survey campaigns	4	4	4	4	Target met	3
						Hectares restored	Nil	Nil	No record	No record		70 hectares
						Carbon sequestration	Nil	Nil	247,1 tCO ₂ e (2019 study)	247,1 tCO ₂ e (2019 study)		
						Tree planting and tagging	50000 trees	50,000 trees	62,805 trees	50,000 trees		60,000 trees

1.4.1 Conformity Review on Legal Requirements and Policy

NLNG Environmental Management System manual was established in 2002. The content is consistently updated to reflect changes in processes, structure and knowledge. In 2004 it was certified to ISO 14001. The manual contains policies which include a commitment to safe, efficient and sustainable operations. The policy outlines how this will be achieved through management, training, implementation, revision and publication of results of the action the terminal performs in environmental matters.

The following sections provide a conformity review of the objectives described in the NLNG HSE Policy in the management system manual.

S/N	Initiative	Status Update
2019		
1	Plant Emission Benchmarking	Completed 2019
2	Corporate Sponsorship	Completed November 2019
3	Quarterly Plastic litter pick	Completed throughout 2019
4	Quarterly Community Fishermen Engagement	Completed November 2019
2020		
1	Quarterly Waterfront Plastic Litter pick	Completed throughout 2020
2	Quarterly Community fishmen engagement	Completed throughout 2020
3	Corporate sponsorship	Completed Sept 2020
4	Annual environmental and Social Impact Management Plan (ESHMP) and Impact Mitigation exercise	Completed October 2020
5	NLNG Bonny Environmental Consultants Committee (BECC) Meeting	Completed November 2020
6	Quarterly Community Engagement	Completed throughout 2020
7	Biodiversity monitoring	Completed November 2020
8	Celebration of World Environmental Day 2020	Completed June 2020
2021		
1	Waterfront plastic and litter pick	1 st and 2 nd Quarter completed

2	Greenhouse Gas Energy Abatement Workshop	Completed February 2021
3	Community fishermen Engagement	
4	Celebration of World Environmental Day	Completed
5	Annual NLNG Contractor CEO HSE Workshop	Completed
6	Tree Planting Exercise	Completed
7	Fleet Vehicle Renewal	Completed August 2021
8	Opportunity Framing on Carbon Sustainability	Completed September 2021
2022		
	Quarterly Waterfront Plastic Litter pick	May 2022
	Celebration of World Environmental Day	Completed June 2022
	Celebration of World Wetland Day	Completed February 2022
2023		
	Quarterly Waterfront Plastic Litter pick	March 2023
	Celebration of World Environmental Day	Completed June 2023
	Celebration of World Wetland Day	Completed February 2023
	Commence studies on renewables, studies and deploy low carbon power initiatives (Solar and EVs)	Pilot phase completed; full implementation ongoing
2024		
	Quarterly Waterfront Plastic Litter pick	
	Celebration of World Environmental Day	Completed June 2024
	Eco Alert	Completed
	Celebration of World Wetland Day	Completed February 2024
	Increased number of EVs and off grid solar facilities	implementation ongoing

1.4.1.2 Management of GHG Emission

NLNG is committed to reducing its carbon footprint and achieving net-zero emission in line with national and international regulations and voluntary agreements. Towards this end there is an established Greenhouse Gas and Energy Management Plan which contains various standards and voluntary agreements the company is striving to achieve. This initiative is currently being extended to cover the entire NLNG corporate footprint. A Corporate Abatement Strategy is being developed; this would be the governing framework of all NLNG's Green House Gas activities. Benchmarking with the industry is also done annually.

For the terminal support craft, onshore power is provided in addition to various measures such as speed reduction and improved hull painting and machinery maintenance.

For the international vessels, emission reduction efforts have been driven primarily by the implementation of the IMO Ship Energy Efficiency Management Plan (SEEMP) across the fleet. Other initiatives around this include the Trim Optimisation project, and Hull Resistance Index (HRI) monitoring which has supported the decision around hull scrubbing and anti-fouling paint selection.

There are other initiatives currently going through approval process like JAWS, Air Lubrication technology, Hull Resistance Index, and Shore Power Initiative which are all at various levels of development. Improvement progress trending in this area has been the measurement of the Carbon Index which is the emission per tonne miles. The company is also working towards ensuring that all the crafts under its operation meets the IMO GHG 2030 regulations

1.4.1.3 Management of Air Quality

NLNG maintains 'no venting and flaring' principles. Key environmental indicators for both ambient air quality and stack emissions are regularly monitored to ensure compliance with the principles, permit conditions and applicable regulatory limits. There is continuous ambient air quality monitoring, while stack emissions monitoring is routinely carried out at identified and registered emission sources within the plant fence to ensure that air quality at the workplace and in the nearby settlements do not exceed regulatory tolerance limits for ambient air pollutants e.g., Nitrogen Dioxide (NO₂), Total Suspended Particulates (TSP- PM 2.5 & 10), Carbon Monoxide (CO), Sulphur Dioxide (SO₂). These indicators are monitored and measured using the Amatek Lancom 4 portable flue gas analyzer for stack emission and Aeroqual AQM 65 Base station for continuous ambient air quality monitoring.

Apart from the plant, the air quality in the other areas of the terminal is monitored as part of health risk assessment / Industrial Hygiene Survey including the support crafts and jetties.

1.4.1.4 Management / Reducing Port Wastes

NLNG waste management policy follows world best practice, emphasis being on recycling and reuse, evident in the environmentally friendly avenues of waste disposal. Proper management of wastes begins with prevention, referring to elimination, change or reduction of waste streams where possible. If this is not feasible, the aim is to minimize the amount of waste ultimately to be disposed through Reduction, Reuse, and Recycle/Recovery practices followed by incineration or use of government approved landfill. Of the 33 waste streams identified, majority (>90%) were either recycled or reused. "Due Diligence" audits/visits are regularly carried out with federal and state government regulators to confirm the level of compliance of waste management contractors to regulatory requirements and NLNG HSE Standards and Procedures.

Heritage Management

Finima Nature Management is funded by NLNG. The day-to-day upkeep and management is done by a Park Management Consultant – The Nigerian Conservation Foundation (NCF). The Park was nominated and recognised at the Global Award and nominated for special mention at the IEMA international Awards 2020. Over the years, the Park has gained international recognition e.g. Rivers State Certificate of Institutionalization, member of the Wetland Link International (WWI), International Wetland Centers recognition and recognition by the Federal Government as a RAMSAR site of International Importance.

1.4.1.5 Management of Goods, Services and Contractors

Procedures related to the identifiable significant environmental aspects of materials brought in by NLNG (such as chemicals and lubricants) are available in the Material Safety Data Sheets, copies of which are available on the company Intranet.

NLNG ensures that outsourced processes are controlled or influenced by insisting that vendors/suppliers/contractors who do business with us adhere to its environmental management system principles and commitments. In keeping with its life cycle perspective, the following applies:

- Ensuring that environmental requirements are considered in the design and development of goods and service at each life cycle stage
- Determining environmental requirements for the procurement of goods and services - including disposal, decommissioning or abandonment of projects.
- Communicating environmental requirements to external providers including contractors
- Providing information about potential significant environmental impact associated with transportation, delivery, use, end-of-life treatment and disposal of its goods and services.

HSE requirements applicable to other suppliers and contractors are stipulated in the appropriate contract documentation. Scheduled HSE meetings and walk-about are also held with contractors. Activities of employees of contractors engaged to provide services in NLNG are controlled by the processes and procedures given in the registers which apply to their activities. Environmental awareness and competence are slated for these contracted activities as part of the HSE Plan.

1.4.1.6 Management of Soil and Ground Water Contamination

To prevent migration of unintended liquid releases to soil and ground water and to the swamps and river during non-routine operations, accidentally oil contaminated (AOC) and continuously oil contaminated (COC) water collection systems are in place.

After treating the contaminants in these systems, the remaining water is discharged off into the Bonny River. Impermeable slabs under process units and product storage prevent soil and ground water contamination, and adequate measures are available for isolation and local containment of spills to facilitate spilled product recovery. Other measures are:

- Bunker fuel and diesel storage tank bunds have impermeable bases, with collection pits to contain spillage.
- Installation of cost effective, Emergency Shutdown Valves in the ship loading lines.
- Monitoring wells have been installed to monitor the quality of ground water.
- These will detect the presence and migration patterns of any contaminants on the site.

1.4.1.7 Ensuring Appropriate Training and Awareness for our Employees

Nigeria LNG Limited has a robust Health, Safety, Security, Environment and Social Performance (HSSE & SP) framework with strong emphasis on the environment. Part of the company's HSE Policy statement is 'to Protect the environment. Use raw materials and energy efficiently and minimize waste'.

The company is certified in ISO 14001, ISO 9001, ISO 50001. NLNG also has a robust competency structure covering all areas and aspects of its operation and environmental requirements. Every job position has a clear job competency profile with an elaborate list of competency proof points and assigned proficiency levels on four-level scale of Awareness, Knowledge, Skill and Mastery (AKSM)

The competency 'Manage Environmental Risks and Aspects' covers the following tasks:

- Regulatory requirements
- Operational procedures & guidelines
- Environmental Monitoring
- Environmental Management
- Waste Management

The process used in identifying training needs and bringing employees to the required proficiency in environmental management by practice and instruction are as follows:

- We conduct Profile match-up and Assessments to identify Group and Individual Competency gaps
- Analysis of learning needs and recommendation of appropriate Learning interventions.
- Implementation of the recommended and approved learning courses to close the gaps identified using a variety of learning delivery methods as may be appropriate.
- Learning Evaluation to validate that the gaps have been closed.

Types of environmental training offered and available

- General HSE Induction (awareness) for all staff.
- Shell's Lead, Prepare and apply HSSE Management (Awareness, Knowledge and Skill levels) Courses. For all HSSE-critical job positions
- Greenhouse gas and energy management systems (GHG-EM)
- PGM Training to monitor the level of Hydrocarbon gases, Oxygen and other toxic gases in the environment.

Progress and improvements in environmental training and awareness in the last 3 years and future initiatives.

- Loss of Primary Containment (LOPC) campaign commences
- Flange integrity initiative and training courses/certifications program
- Active participation in World environment day – with staff awareness sessions and tree planting exercise
- Inclusion of GHG and Energy Management courses in general staff induction program
- The NLNG energy consumption reduction initiative covering the NLNG residential and Industrial areas.

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1.4.1.8 Managing Biodiversity in the Terminal Area.

Regular biodiversity surveys and biological monitoring is done monthly to observe the state of flora and fauna that live on the Island. Diverse species of plants and animals are normally sighted during these surveys. The Finima Nature Park remains a significant NLNG's commitment and contribution to the local, national and global conservation objectives consistent with the Project's Environmental Impact Assessment (EIA) mitigation requirements and relevant Bio-diversity Convention. Over the years, the park has gained international recognition e.g., Rivers State Certificate of Recognition, member of the Wetland Link International (WWI), recipient of Wetlands Link International Star Wetland Centres award during RAMSAR COP14 held in Geneva, Switzerland, 2022, and recognition by the Federal Government as a RAMSAR site of International Importance. The Park continues to play host to the community, tourists, conservation students/lecturers and has become the site of importance to inhabitants and visitors to Bonny Kingdom with an average of 22,000 visitors each year. A tree planting project was embarked on within the Bonny communities in 2023. A total of 62,805 tree seedlings including mangroves were planted within the communities and seacoast.



1.4.1.9 Strengthening Relationship with Host Communities and Society

NLNG's approach to corporate social responsibility is anchored on sustainability, stockholding and partnership. NLNG is guided in this by its conviction based on sound business principles that businesses must strive to be a force for good within society.

NLNG therefore strategically conceives and implements projects at both national and local levels that will positively impact the lives of citizens. For example, in its host communities, NLNG supports the improvement of infrastructure, health and educational facilities and encourages local enterprise, facilitating knowhow and building capacity in the sustainable use of resources.

NLNG maintains cordial relations with its host communities and delivers its CSR development initiatives/interventions via a strategic framework that is hinged on four pillars as itemized below –

- **Health:** Bonny Community Health Insurance Programme (BCHIP); Bonny Malaria Elimination Project (BNYMEP); Ibani-Se HIV Initiative; and several other Health Outreaches
- **Education:** A Three-tier Scholarship Scheme (Postgraduate, Undergraduate and Post Primary); Prizes for Literature & Science; and Bonny Vocational Centre
- **Empowerment:** DLPG/DLNG Initiative; Radio Bonny Initiative – awareness/education/communication; Youth Empowerment Scheme; Amanyanabo Cup – youth engagement via sports
- **Infrastructure:** Bonny Bodo Road; Bonny Utility Company (Power & Water); Housing projects; Schools; Health Centers; Electrification projects

For emphasis, two significant success stories in the development annals of NLNG namely the Bonny Bodo Road and the Bonny Utility Company.

In a tripartite agreement between the Federal Government of Nigeria, NLNG and Julius Berger Nigeria (Contractor), the decades-long abandoned Bonny- Bodo Road was rejuvenated. NLNG has committed to financing the project on behalf of the government, utilizing the FGN’s Executive Order 007 scheme. The Bonny Bodo Road is expected to open immense opportunities for rapid socio-economic development of the area and impact on the lives of millions of Nigerians, particularly those from such Niger Delta.

Bonny Utility Company (BUC) is a community powered utility company setup to manage sustainably the basic utilities (electric power and water) in Bonny Community. BUC distributes power donated by NLNG to the community via its grid. Over 15,000 customers within the community are connected to the BUC power grid and enjoy uninterrupted power supply.

1.4.1.11 Supporting the Health and Wellness of Our Employees.

The Chief Medical Office (CMO) Department of NLNG is the department of the company responsible for the health and wellness of all staff and their families.

Some of the methods targeted at promoting health include the deployment of the VIRGIN PULSE APP which monitors exercise, health parameters and even sleep; we currently have an enrolment rate of 63% of staff.

Period medical examination (PMEs) are done yearly/two yearly for those below the age of 40, PMEs are vital to the early detection of illness and quick treatment; messages are sent on birthdays and again two weeks after to remind celebrants to schedule for their PME.

Preventive mental health is ensured by the Employee Assistance Programme (EAP), focused at helping staff and their families resolve both work and non-work-related matters that affect their personal life or work negatively.

All NLNG offices are ergonomically furnished, have air conditioning, and indoor plants and good lightning. Computers have the Ergosuite software: “ErgoSuite’s patented methods

observe activity and recovery time in order to personally coach users precisely when needed using biofeedback to prevent tissue damage and help make neutral postures, micro-breaks and stretching all automatic behaviours for optimal employee comfort, safety, wellness and productivity." www.ergosuite.com

1.4.1.12 Managing Maintenance Dredging

All regulatory permits pertaining to dredging rests with NPA. However, the maintenance of the terminal jetties and waterfronts is the responsibility of NLNG as a private facility. NLNG surveys the waterfront and beach and monitors the silting, debris as well as any possible erosion. Dredging of silted depth recovery is done after EIA and relevant permits from NPA.

Dredging maintenance of the main public river access channel is the responsibility of NPA and this is done with a dedicated dredging company. All dredge materials are deposited to the established spoil ground beyond the terminal fairway buoy area.

1.4.1.13 Ensuring Compliance

NLNG has a firm commitment to meeting relevant environmental legislations and regulations (as environmental policy) and meeting other voluntary or contractual environmental obligations to which it subscribes.

These include Nigerian Federal, Rivers State and Bonny Local Government laws, regulations, licenses, permits, memoranda of understanding and other agreements of environmental significance. Also included are voluntary agreements entered into by NLNG adopting international conventions and best practices such as ECOPORT Port Environmental Review System (PERS).

1.5 ENVIRONMENTAL REPORT

NLNG leadership – the Executive Leadership (EL) and Senior Leadership Team (SLT) demonstrate leadership and commitment to the environmental management system

The aim of the environmental report is to provide environmental information to senior terminal management, the public and other interested parties regarding the environmental impact and the performance of the terminal's significant environmental aspects.

NLNG prepares detailed annual environmental report that is shared with the shareholders and terminal stakeholders.

Compliance

The company complies with local and international regulations applicable to its operations. It conducts regular engagements with the various stakeholders for performance updates and feedback towards improvement. As a demonstration of commitment it has in place Environmental Management System that was certified to ISO 14001 since 2004. In 2018 it was recertified to ISO 14001:2015 following a successful audit. All NLNG workforce are briefed on the Environmental Management System as part of the onboarding induction requirements.

Energy Management

NLNG Energy Efficiency Management System is certified to ISO 5001:2018

There have been several measures aimed at improving or reducing energy consumption. These include:

- Energy Efficiency and Heat Integration (EE & HI) review
- Energy Abatement Workshop

A dedicated Mission Critical Tactics (MCT) team has been set-up with the aim to conserve energy, reduce flaring and improve the site wide greenhouse emission intensity (GEI). The processes for monitoring energy and water use to better understand and manage consumption is ongoing. The monitoring provides the baseline to be able to understand the effectiveness of any improvement initiatives as those indicated above.

Other measures include:

- General energy consumption awareness training for the staff and workforce
- Use of LED lighting in offices
- On-shore Power provision.

Emission Management

NLNG has a Green House and Energy Management Plan (GEMP) that requires the company to measure and report its emissions as it relates to GHG. As an ISO50001:2018 certified company, NLNG has committed to measure, monitor and reduce its GHG emissions and report its Corporate Green House Gas Footprint measured in terms of Carbon Dioxide equivalent (CO₂eq).

The company has categorised its emissions based on the activities carried out into 5 major focus areas and the emissions from those areas measured, documented and converted into Carbon Dioxide equivalents. This is reported monthly and strategies to reduce those GHG emissions put in place and their implementation monitored for effectiveness.

The five (5) focus areas that are aggregated into the Corporate Performance are:

- Production

- Shipping
- Logistics – Sea, Land & Air
- Projects
- Estate – Outside Bonny

Dredging and Channel Maintenance Management

Dredging and maintenance of the river access channel is carried out by Nigerian Ports Authority through a dedicated company, Bonny Channel Company Ltd (BCC). The maintenance of the jetties and required depth is done by NLNG with the approval of the Authority and after environmental impact assessment.

Waste Management

NLNG waste management policy follows world best practice, emphasis being on recycling and reuse, evident in the environmentally friendly avenues of waste disposal. Of the 33 waste streams identified, majority (>90%) were either recycled or reused.

Heritage Management

Finima Nature Management is funded by NLNG. The day-to-day upkeep and management is done by Park Management Consultant – The Nigerian Conservation Foundation (NCF) The Park was nominated and recognised at the Global Award and nominated for special mention at the IEMA international Awards 2020. Over the years, the park has gained international recognition e.g. Rivers State Certificate of Institutionalization, member of the Wetland Link International (WWI), International Wetland Centers recognition and recognition by the Federal Government as a RAMSAR site of International Importance.

Host Community and Stakeholder Management

NLNG maintains cordial relations with its host communities and delivers its CSR development initiatives/interventions via a strategic framework that is hinged on four pillars as itemized below –

- **Health:** Bonny Community Health Insurance Programme (BCHIP); Bonny Malaria Elimination Project (BNYMEP); Ibani-Se HIV Initiative; and several other Health Outreaches
- **Education:** A three-tier Scholarship Scheme (Postgraduate, Undergraduate and Post Primary); Prizes for Literature & Science; and Bonny Vocational Centre
- **Empowerment:** DLPG/DLNG Initiative; Radio Bonny Initiative – awareness/education/communication; Youth Empowerment Scheme; Amanyambo Cup – youth engagement via sports

- **Infrastructure:** Bonny Bodo Road; Bonny Utility Company (Power & Water); Housing projects; Schools; Health Centers; Electrification projects

The company took over the funding of the decades-long abandoned 38KM Bonny Bodo Road project that is meant to link the island to the mainland cities of Rivers State. This project will cost about N280bn and is estimated to be completed by 2026.

Tagged the biggest CSR initiative by a private company in Nigeria, the 38km road passing through Bodo, Afa, Opobo and Nanabie to Bonny is expected to contribute significantly to the long-term goals of the Federal Government with respect to the development of the Niger Delta region. In addition, the Bonny Bodo Road is expected to open immense opportunities for rapid socio-economic development of the area and impact on the lives of millions of Nigerians, particularly those from such Niger Delta communities as Bonny, Ogoni, Okrika, Eleme and Andoni.

Also, residents of Bonny Island today enjoy over 95% power availability, and this is courtesy the efficient power distribution network of the Bonny Utility Company. Bonny Utility Company (BUC) is a community powered utility company setup to manage sustainably the basic utilities (electric power and water) in Bonny Community. BUC distributes power donated by NLNG to the community via its grid. Over 15,000 customers within the community are connected to the BUC power grid and enjoy uninterrupted free or subsidized power supply.

Besides these, the company has funded several projects in different parts of the country, built research centres in selected Federal Universities within the country, and awarded overseas graduate scholarships annually to qualified students.

Employee Training

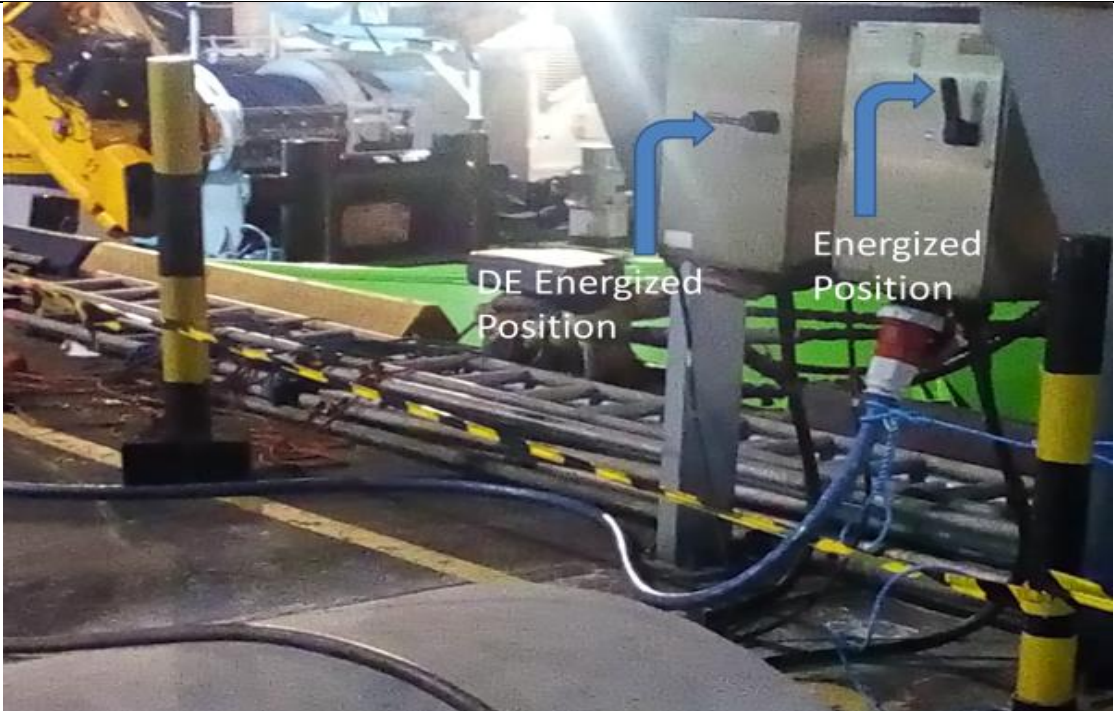
To further develop sustainable environmental awareness, we provide regular training to the workforce on the following:

- General HSE Induction (awareness) for all staff.
- Shell's Lead, Prepare and apply HSSE Management (Awareness, Knowledge and Skill levels) Courses. For all HSSE-critical job positions
- Greenhouse gas and energy management systems (GHG-EM)
- PGM Training to monitor the level of Hydrocarbon gases, Oxygen and other toxic gases in the environment.
- Inclusion of GHG and Energy Management courses in general staff induction program.
- The NLNG energy consumption reduction awareness covering the NLNG residential and Industrial areas.

1.6 BEST PRACTICE

This chapter details two examples of environmental projects undertaken by the NLNG to improve environmental conditions

NLNG Bonny Terminal	Nigeria
Contact	Capt. Auwalu, Hassan
Position	Acting Manager, Terminal Services
Email	Auwalu.Hassan@NLNG.COM
Environmental Issue	Air quality / Energy conservation and climate change / Noise management
Relevance to ESPO 5E's framework: Enable, Engage	
ON-SHORE POWER SUPPLY	
<p>The terminal has 5 tugboats, 2 pilot boats and 4 passenger boats dedicated to its marine operations.</p> <p>All the boats run on diesel. The tugboats and pilot boats run their machinery 24/7. These modes of operation have been in place since the establishment of the terminal. Meanwhile the terminal complex generates its own power from gas turbines and has sufficient power for all its operation/services. This power was never extended to the boats even though there was more than enough to support the crafts.</p> <p>However, in 2016 the terminal management decided to experiment on the ON-Shore Power Supply. By 2017 all the crafts were on shore power. This did not only reduce fuel consumption by more than 30%, but it also provides better working environment for the crew – reducing emission, noise and machinery wear and tear from continuous operation.</p>	



NLNG Bonny Terminal	Nigeria
Contact	Capt. Auwalu Hassan
Position	Acting Manager, Terminal Services
Email	Auwalu.Hassan@NLNG.COM
Environmental Issue	Garbage, Marine Litter
Relevance to ESPO 5E's framework: Encourage, Engage	
Waterfront Plastic Litter Clean up Exercise.	

Although the terminal has very good waste management practices, including creating waste management awareness to the workforce. It championed use of biodegradable bags in the terminal area and its residential area shopping mall. However, despite these measures the waterfronts were still littered with plastic bottles and debris washed into the river from the surrounding communities. To keep the waterfront clean NLNG Marine initiated the 'Clean Waterfront' initiative. This clean up exercise is done every quarter and involves terminal management and the workforce-line staff. There was huge turnout in the last exercise and a large area of the waterfront was covered.

This initiative and awareness is being planned for extension to the communities where the plastics and debris originate.



Terminal Waterfront Clean up Exercise

Nigeria LNG Finima Nature Park	Nigeria
Contact	Metseagharun, Weyimi
Position	Head Environment
Email	weyimi.metseagharun@nlng.com
Environmental Issue	None
Relevance to ESPO 5E's framework: Encourage, Exemplify	
Biodiversity Conservation and Carbon Sequestration	
<p>The Finima Nature Park (FNP) is situated on 1000 hectares of the rain forests, mangrove swamps and sandy soil with freshwater ponds along Nigeria's southern coastal area on Bonny Island in Rivers State.</p> <p>Nigeria LNG Limited recognition of unchecked increase in industrial activities on Bonny Island which has the potential to further put pressure on the fragile ecosystem, necessitated the establishment of the Finima Nature Park in 1999. Its intent was to preserve the natural environment, limit if not eliminate some of the adverse environmental effects, for example, land reclamation, felling of trees, hunting of endangered species for economic reasons, destruction of indigenous fauna and flora that are linked to the culture and heritage of the Bonny people and provide a rich repository for environmental research and educational activities.</p> <p>Given the sensitivities around industry operations in the Niger delta, NLNG also considers the nature park a veritable carbon sink thus making the company to take credit for this natural means of GHG reduction at a time when other multinationals are been blamed for unchecked emission. The carbon stock assessment carried out in 2019 revealed that the park helped to offset carbon to the tune of 247,158.78 MgTCO_{2e} annually. This is a huge transformational feat and aligns with one of the agreements contained in the Kyoto Protocol on greenhouse gas emissions and NLNG commitment to sustainable environment.</p>	



Finima Nature Park (FNP)

Appendix 1 Risk Assessment Register



Risk Assessment
Register

Appendix 2. Industrial Survey of NLNG Chartered Marine Support Boats



Industrial Survey of
NLNG Chartered Mari

Appendix 3. NLNG Terminal Stakeholder Management Plan



NLNG Terminal
Stakeholder Managen

Appendix 4. NPA endorsement of environmental aspect and impact and key regulations

As attachment on the portal