

NIGERIAN UPSTREAM PETROLEUM REGULATORY COMMISSION (NUPRC)

7, Sylvester Ugoh Crescent Jabi, Abuja FCT. PMB 399 Garki, Abuja.

+234 (9) 903 2000 ✉ nuprc@nuprc.gov.ng 🌐 www.nuprc.gov.ng

Guidance Template for Greenhouse Gas (GHG) Emissions Inventory Reporting in Upstream Oil and Gas Operations

This Guidance template establishes a standardised framework for the consistent, accurate, and transparent reporting of greenhouse gas (GHG) emissions across Upstream Oil and Gas operations, while strengthening effective Monitoring, Measurement, Reporting, and Verification (MMRV) practices in alignment with NUPRC regulatory requirements and international best practices.

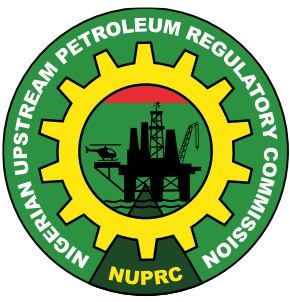
1. Executive Summary

- Overview of GHG emissions sources and totals (provide table with summary GHG report)
- Charts showing emission trends for a minimum of five (5) years.
- Methodologies and Reporting period
- Key findings and reduction progress from mitigation efforts (activities & projects leading to reduction)
- Organizational boundary and reporting frameworks used (e.g., IPCC, OGMP 2.0, ISO, API etc.)

2. Introduction

- Purpose and objectives of inventory.
- Regulatory or voluntary reporting drivers (e.g., IPCC, API, OGMP 2.0, EPA, ISO)
- Description of the facilities, assets, and operations (provide a tabular summary description)

| Sn | Field Name | Location (terrain) | Concession | Facilities Name | Facility Type |
|----|------------|--------------------|------------|-----------------|---------------|
| | | | | | |



NIGERIAN UPSTREAM PETROLEUM REGULATORY COMMISSION (NUPRC)

📍 7, Sylvester Ugoh Crescent Jabi, Abuja FCT. PMB 399 Garki, Abuja.

☎ +234 (9) 903 2000 ✉ nuprc@nuprc.gov.ng 🌐 www.nuprc.gov.ng

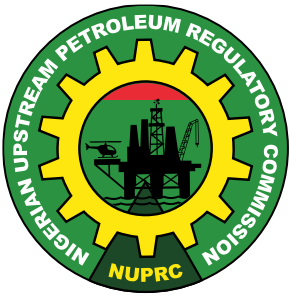
- Organizational boundary stating equity share and operational control status.
- Operational boundaries stating scope 1, scope 2, and scope 3 emissions (where applicable).
- State whether the inventory report includes joint ventures, affiliates, or third-party operators.
- **The report shall cover emissions from exploration activities, drilling & completion, well testing operations (including extended well test), facility upgrade/new projects, production operations, and decommissioning & abandonment activities carried out within the reporting period.**

3. Identification and Categorization of Emission Source

Categorize emissions in line with **IPCC sectors** or other relevant frameworks:

| Sn | IPCC Code | Category of Emission Source | Description |
|----|-----------|--|-------------|
| | | Combustion (stationary and mobile) | |
| | | Flaring | |
| | | Venting (routine and non-routine) Fugitive emissions (equipment leaks, tanks, etc.) | |
| | | Abandoned Wells | |
| | | Drilling Operations | |
| | | Well completions and workovers | |
| | | Exploratory activities | |
| | | Pneumatic devices and pumps | |
| | | Dehydrators and separators | |

- Other sources of emissions considered immaterial with minimal contributions shall be stated. Also, where OGMP 2.0 standard is adopted include source-level reporting elements that are monitored.
- Attach inventory of emission sources as Appendix A. This shall include number of flare points, vents, glycol dehydrators, storage tanks,



NIGERIAN UPSTREAM PETROLEUM REGULATORY COMMISSION (NUPRC)

📍 7, Sylvester Ugoch Crescent Jabi, Abuja FCT. PMB 399 Garki, Abuja.

☎ +234 (9) 903 2000 ✉ nuprc@nuprc.gov.ng 🌐 www.nuprc.gov.ng

generators, turbines, compressors, pneumatics etc., on facility-by-facility basis.

- **The Inventory report shall have sections that details unplanned emissions incidents such as pipeline leakages, equipment failure, vandalism, wellhead leak or fires etc., as well as emissions from notifications by NUPRC on super pollutant incidents from International Methane Emission Observation (IMEO)- Methane Alert Response System (MARS).**
- The cause of the incidents and actions taken to abate the incident shall be provided in the report.

4. Activity Data and Emission Factors

This section shall contain the following details:

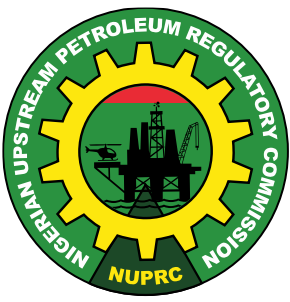
- Description of activity data collected in tabular formats (e.g., fuel use, flare volumes etc.)
- Source of emission factors (e.g., IPCC, API, EPA, field/site or equipment-specific etc.)
- Global warming potential (GWP) with reference to IPCC Assessment Report (AR) used.
- Uncertainty estimates and quality assurance methods

5. Baseline GHG Emissions Inventory

Establish and maintain a verifiable Methane & GHG baseline covering at least three historical years. The inventory shall:

- Be prepared in accordance with IPCC Tier 2 or Tier 3 methodologies. If Tier 2 approach is adopted, operators shall indicate clearly their strategies to progress the emission baseline to Tier 3 within 12 months.
- Include quantification methods, activity data, and emission factors
- Assign confidence ratings and quantify uncertainty

This baseline shall serve as the reference for all emissions-reduction assessments and target-setting.



NIGERIAN UPSTREAM PETROLEUM REGULATORY COMMISSION (NUPRC)

📍 7, Sylvester Ugoch Crescent Jabi, Abuja FCT. PMB 399 Garki, Abuja.

☎ +234 (9) 903 2000 ✉ nuprc@nuprc.gov.ng 🌐 www.nuprc.gov.ng

6. Methodologies Used for Quantification

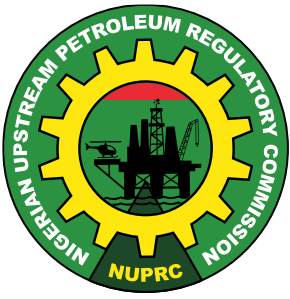
Provide detailed methods used for calculation of emissions ranging from direct or indirect measurement, mass balance or any other methods as well as frameworks used such as:

- IPCC Tier 1, 2 or 3
- OGMP 2.0 level of reporting (from Level 1 to Level 5),
- EPA Methods (e.g., Method 21, Subpart W equations)
- API Compendium methods and emission factors
- ISO 14064-based quantification principles (relevance, completeness, consistency, accuracy, transparency)
- Engineering estimates and use of emission factors
- Details of any other tool or software used.

State detailed plans to progress to measurement-based emissions reporting in line with provision of Section 4.0 of the Methane and GHG Guidelines 2022.

7. Emission Calculations and Quantifications

- State and justify the selection of quantification methods based on data availability, quality, and the significance of the emission source.
- Results of emissions and summary table by facility/asset and source type.
- Breakdown of emissions results in tonnes of CO₂ equivalent by gas (CO₂, CH₄, N₂O) as per Appendix C.
- **Calculate the total GHG emission intensity (in kilograms of CO₂e per barrel of oil equivalent (kg CO₂e/Boe) and CH₄ intensity (kg CO₂e/Boe), as well as breakdown of field/assets basis CO₂ and CH₄ intensities (provide this in a table with the formula used and assumptions)**
- Trends and comparisons of emissions with previous years while stating the base year adopted to track reduction targets.



NIGERIAN UPSTREAM PETROLEUM REGULATORY COMMISSION (NUPRC)

📍 7, Sylvester Ugoch Crescent Jabi, Abuja FCT. PMB 399 Garki, Abuja.

☎ +234 (9) 903 2000 ✉ nuprc@nuprc.gov.ng 🌐 www.nuprc.gov.ng

- Data management and QA/QC stating data collection and validation procedures, with details if conversions factors used.
- Describe the approach for ensuring consistency when using multiple methods in alignment with principles of transparency, accuracy, completeness, consistency and comparability (TACCC).
- Third-party independent verification used, stating the scope and outcome. Provide a statement on the level of assurance provided by the third party.

8. Mitigation Measures and Tracking of Reduction Targets

- Existing and planned emission reduction measures (share a table with summary of emission reduction per adopted mitigation activity and strategy to realign mitigation if emission reduction is not on track)
- Alignment of mitigation measures with national and corporate net-zero/decarbonization strategy.
- LDAR program and implementations plan
- Submission of GHG Inventory report shall be on quarterly basis in line with the provisions of Section 4.0 of the Methane and GHG Guidelines 2022.

The Commission will issue MRV Compliance Certificate to operators that fully comply with the submission of Methane and Greenhouse Gas Emission Inventory in line set standards and industry Best Practices.

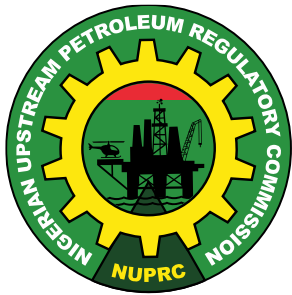
9. Conclusion and Recommendations

Appendix A: Inventory of Emission sources and equipment

Appendix B. Detailed calculations, conversions and formulas

Appendix C: Template for total emission summary

Other relevant data shall be added as appendix and referenced in the report



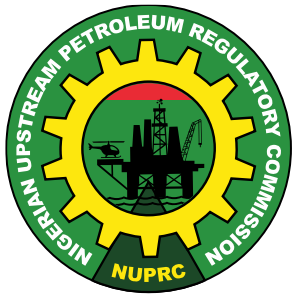
NIGERIAN UPSTREAM PETROLEUM REGULATORY COMMISSION (NUPRC)

7, Sylvester Ugo Crescent Jabi, Abuja FCT. PMB 399 Garki, Abuja.

+234 (9) 903 2000 ✉ nuprc@nuprc.gov.ng 🌐 www.nuprc.gov.ng

Appendix A: Table format

| S/ N | Facility Name | Facility Type | Location | Source Category | Equipment/Source Type | Quantity (# Units) | Segment (e.g Oil, Gas or Oil & Gas) | Pollutant Emitted (CH ₄ /CO ₂ , NO _x) | Quantification Method | Uncertainty |
|------|-----------------------------|--|---------------------|--------------------|--------------------------------------|--------------------|-------------------------------------|---|--|-------------|
| 1 | XYZ Flowstation or ABC FPSO | CPF / Flowstation / Wellpad / Platform/FSO | Offshore or Onshore | Flaring | Flare Point | | e.g Oil , Gas or Oil & Gas | | State whether it is Continuous Emission Monitoring Systems (engineering estimate, emission factor) | |
| 2 | | | | Venting | Vent Stack / Emergency Vent | | | | | |
| 3 | | | | Fugitive Emissions | Wellhead / Valve / Flange / Pig Trap | | | | | |
| 4 | | | | Combustion | Gas Generator /Turbines/ Diesel Gen. | | | | | |
| 5 | | | | Process Emissions | Glycol Dehydrator | | | | | |
| 6 | | | | Storage Tanks | Crude Oil / Condensate Tank | | | | | |
| 7 | | | | Pneumatic Devices | Controllers / Pumps | | | | | |

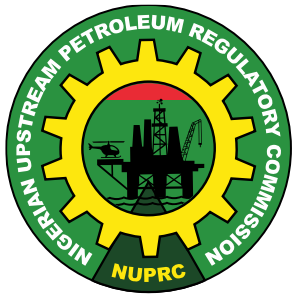


NIGERIAN UPSTREAM PETROLEUM REGULATORY COMMISSION (NUPRC)

📍 7, Sylvester Ugo Crescent Jabi, Abuja FCT. PMB 399 Garki, Abuja.

☎ +234 (9) 903 2000 ✉ nuprc@nuprc.gov.ng 🌐 www.nuprc.gov.ng

| | | | | | | | | | | |
|----|--|--|--|----------------------------------|---|--|--|--|--|--|
| 8 | | | | Stationary Engines | Compressor Engines | | | | | |
| 9 | | | | Compression Systems | Reciprocating / Centrifugal Compressors | | | | | |
| 10 | | | | Process Heaters | Heaters / Separators | | | | | |
| 11 | | | | Cold Vents | Flash Gas Vents / Dump Valves | | | | | |
| 12 | | | | Mobile Combustion | Trucks / Vehicles | | | | | |
| | | | | Well Testing Operations & Others | | | | | | |



NIGERIAN UPSTREAM PETROLEUM REGULATORY COMMISSION (NUPRC)

7, Sylvester Ugoch Crescent Jabi, Abuja FCT. PMB 399 Garki, Abuja.

+234 (9) 903 2000 ✉ nuprc@nuprc.gov.ng 🌐 www.nuprc.gov.ng

Appendix C: Table Format

| S/N | YEAR | MONTH | COMPANY NAME | COMPANY ABR | LOCATION (Terrain) | CONCESSION | FIELD NAME | FACILITY NAME | FACILITY TYPE | FACILITY COORDINATES | FRAMEWORK ADOPTED (Indicate Tier or Level) | EMISSION SOURCES | EQUIPMENT/SOURCE TYPE | UNIT (Tonnes CO ₂ e) | C O ₂ | C H ₄ | N ₂ O | TOTAL Intonnes CO ₂ e | COMMENTS |
|-----|------|---------|--|-------------|--------------------|---------------|------------|---------------|---------------|----------------------|--|---|--|---------------------------------|------------------|------------------|------------------|----------------------------------|----------|
| 1 | 2023 | January | e.g X Nigeria Exploration & Production Limited | XNEPL | Offshore | OML, OPL, PPL | XING | X FPSO | FPSO | | eg., IPCC (Tier 1,2,3), OGMP | Combustion Flaring Venting Fugitives Others | Mobile or stationary Combustion, Equip. Leak, Storage Tank vents, Venting, Fugitives etc | | | | | | |

Note: This shall be submitted in MS Excel Format provided in the link below:

[GHG Inventory Summary Template .xlsx](#)