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Strengthening Uganda's Oil and Gas Sector Methane Emission Abatement

IBRAHIMA AIDARA, ANN-MARY KUSIIMA AND PAUL BAGABO | JULY 2026

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Natural Resource Governance Institute

Cover image:
Golden crude pipelines in Africa
Photo by Kodda via Shutterstock

Executive Summary

Uganda is on the cusp of becoming an oil-producing country, with commercial production expected to commence in 2027 at the earliest. Oil production will take place through the Lake Albert Project, involving three companies: TotalEnergies operating the Tilenga Project, China National Offshore Oil Corporation operating the Kingfisher project, and the Uganda National Oil Company. While oil production presents significant economic opportunities, it also introduces new climate-related risks, particularly from methane emissions across the oil and gas value chain. Methane is a highly potent greenhouse gas, with a global warming potential significantly higher than carbon dioxide over a 20-year period, making its abatement one of the most effective short-term climate mitigation strategies.

This briefing paper assesses Uganda's preparedness to manage methane emissions from its emerging oil and gas sector, and identifies key policy, regulatory and institutional gaps that must be addressed to align with global climate commitments and maintain the competitiveness of Uganda's hydrocarbons in a rapidly decarbonizing global energy market.

Although Uganda has made progress in establishing a legal and institutional framework for climate action, including the National Climate Change Act (2021) and updated Nationally Determined Contributions (NDCs), the current framework does not explicitly address methane emissions from the oil and gas sector, largely due to the sector's pre-production status and lack of baseline emissions data. This creates a critical window of opportunity for Uganda to proactively design and implement a robust methane management framework before production begins.

NRGI's analysis finds that while there are restrictions on flaring and venting under existing petroleum laws, these provisions are not supported by detailed methane-specific regulations, measurement standards or enforcement mechanisms.

In addition, Uganda's greenhouse gas inventory relies primarily on Tier 1 methodologies using default emission factors,[1] which limits the accuracy and reliability of emissions data. Institutional capacity constraints, limited inter-agency coordination and insufficient transparency further undermine the country's readiness to effectively monitor, report and verify methane emissions.

At the international level, momentum to reduce methane emissions is accelerating through initiatives such as the Global Methane Pledge and the Oil and Gas Methane Partnership 2.0. Uganda has not yet joined these initiatives, potentially limiting access to technical support, climate finance and global best practices.

To address these gaps, this paper proposes the development of a comprehensive methane action roadmap covering the full lifecycle of Uganda's oil and gas sector (approximately 25 years). The roadmap should include clear emissions reduction targets; robust monitoring, reporting and verification systems aligned with international standards, and defined roles for government agencies and industry actors.

Key recommendations include strengthening legal and regulatory provisions for methane management, integrating oil and gas emissions into future NDC updates, enhancing institutional and technical capacity for advanced emissions measurement (Tiers 2 and 3), and introducing a balanced system of incentives and penalties to drive methane abatement.

By taking early and decisive action, Uganda can position itself as a more responsible oil producer, minimize environmental risks, and ensure that its oil and gas sector is better able to contribute to sustainable development in the context of an international energy market increasingly conscious of global climate goals.

1 The Tiers 1, 2 and 3 framework refers to the Intergovernmental Panel on Climate Change (IPCC) methodology for calculating and measuring greenhouse gas emissions—including methane. It represents an ascending scale of complexity, data requirements, and measurement accuracy. See www.ipcc.ch

Key messages

Manage methane emissions from the start: Uganda is expected to commence oil production in 2027 at the earliest. Oil production, transport, and use of oil and gas generate greenhouse gas (GHG) emissions. To remain competitive in a low-carbon global economy and avoid future emissions-related trade barriers, Uganda must proactively manage methane emissions from the outset of production.

Develop a detailed action roadmap: Uganda should develop and publish a comprehensive methane action roadmap by 2027, covering the entire duration of oil and gas extraction in the country (approximately 25 years). This roadmap should include quantified methane reduction targets, national monitoring, reporting and verification (MRV) framework aligned with international standards, and clear institutional responsibilities. It should also provide for the establishment of a national oil and gas methane working group, mitigation measures (e.g., leak detection and repair (LDAR) systems, vapor recovery), and adoption of internationally recognized MRV systems such as those under the Oil and Gas Methane Partnership (OGMP) 2.0. Uganda should also enforce provisions in the National Climate Change Act 2021 on GHG emissions data collection and reporting. This should be complemented by mandatory independent verification of methane emissions data and clear data-sharing protocols across agencies.

Ensure key government agencies are aligned: The authorities should strengthen institutional coordination between key agencies, including the Ministry of Energy and Mineral Development, the Petroleum Authority of Uganda, the National Environment Management Authority and the Climate Change Department.

Implement reforms reflecting international best practice: Uganda should implement policy and regulatory reforms to strengthen its methane emission abatement ambitions, based on international best practices such as those specified in the International Energy Agency regulatory roadmap and toolkit[2] and the OGMP 2.0. These reforms should include explicit methane emission limits, LDAR requirements, and strict controls on flaring and venting.

Incentivize compliance with methane targets: Uganda should introduce a balanced system of incentives and penalties for methane abatement and emissions, including fiscal incentives for methane abatement technologies, and penalties such as flaring fees or carbon pricing mechanisms for non-compliance.

Build capacity to collect data and monitor emissions: The government should enhance its agencies' capacity to gather detailed emissions data. Specifically, it should invest in training technical staff to implement Tier 2 and Tier 3 methodologies for more accurate methane measurement and reporting, and set measurable targets, such as training at least 50 technical staff and deploying advanced MRV tools across major oil and gas facilities by 2028. It should also raise stakeholders' awareness of methane emissions, and build their capacity for data collection and monitoring.

Join international initiatives to reduce methane emissions: Uganda should formally join the Global Methane Pledge and participate in other international initiatives for methane reduction. At the corporate level, the Uganda National Oil Company and international operators should also commit to frameworks such as the OGMP 2.0 and the Oil and Gas Decarbonization Charter.

2 https://www.iea.org/reports/driving-down-methane-leaks-from-the-oil-and-gas-industry/regulatory-toolkit

Introduction

Mitigating methane emissions from Uganda's oil and gas sector is not only a climate imperative, but a critical opportunity to maintain the competitiveness of Uganda's hydrocarbons in a rapidly decarbonizing global energy market.

Understanding methane emissions

Climate change is one of the leading global challenges. Scientific consensus confirms that climate change is primarily driven by human-induced GHG emissions. These gases include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O) and chlorinated gases mainly used in refrigeration and air conditioning. Methane emissions currently account for approximately 30 percent of global warming since the industrial revolution, with total emissions estimated at 580 million tonnes annually. Anthropogenic methane emissions must decline by 30–60 percent by 2030 to meet the 1.5°C target for global warming under the Paris Agreement.[3]

Globally, the energy sector is a major contributor to emissions, particularly methane from oil and gas operations through flaring,[4] venting and leaks. Methane's short atmospheric lifetime but high warming potential makes it a critical target for near-term climate action. Energy sector GHG emissions are mainly comprised of CO_2 and nitrous oxide from fossil fuel use, and methane from petroleum production (mainly through flaring and venting) and refining processes.[5] The production and use of fossil fuels generated an estimated 120 million tonnes of methane emissions in 2023[6] (78 million tonnes from oil and gas alone), while a further 10 million tonnes came from bioenergy—largely from the traditional use of biomass.

Emissions from oil and gas can be described in three main categories: scopes 1, 2 and 3. Scope 1 refers to direct emissions from sources that a company owns or controls. In the oil and gas sector, this includes emissions from drilling rigs, oil and gas extraction, and transportation. Scope 2 covers indirect emissions from the energy a company purchases and uses. This includes electricity, steam, heat and cooling purchased by an oil and gas company for its operations. Scope 3 relates to indirect emissions that occur in a company's value chain. This includes the emissions associated with goods and services that an oil and gas company purchases, but also the emissions that stem from the use of sold products, such as petroleum, diesel, gas and other petrochemicals. These downstream emissions are responsible for the greatest share of emissions in the sector.[7]

While other sectors also generate GHGs, fossil-fuel-based methane has a global warming potential that is close to 30 times that of CO_2,[8] based on a 100-year timeframe. The global warming potential of methane based on a 20-year timeframe is even higher, at about 84–87 times. Accordingly, while the agriculture and waste sectors are also major sources of methane emissions, fossil fuel production offers the greatest potential for immediate emissions reductions.

3 https://iea.blob.core.windows.net/assets/9efb310e-94d7-4c46-817b-9493fe5abb0a/Theimperativeofcuttingmethanefromfossilfuels.pdf

4 Gas flaring is the burning of gases associated with oil production, rather than the conservation and use of this by-product of drilling for oil. Gas flaring contributes to climate change and impacts the environment through the emission of CO2, black carbon and other pollutants. It also wastes a valuable energy resource that could be used to advance the sustainable development of producing countries.

5 https://unosd.un.org/sites/default/files/session_5_mr._andre_amaro_ipcc.pdf

6 https://www.worldbank.org/en/programs/gasflaringreduction/methane-explained

7 https://ghgprotocol.org/corporate-standard-frequently-asked-questions#:~:text=Emissions%20are%20further%20divided%20into,methane%20leakages%20from%20gas%20transport

8 https://ghgprotocol.org/sites/default/files/2024-08/Global-Warming-Potential-Values%20%28August%202024%29.pdf

Energy transition and methane emissions reduction

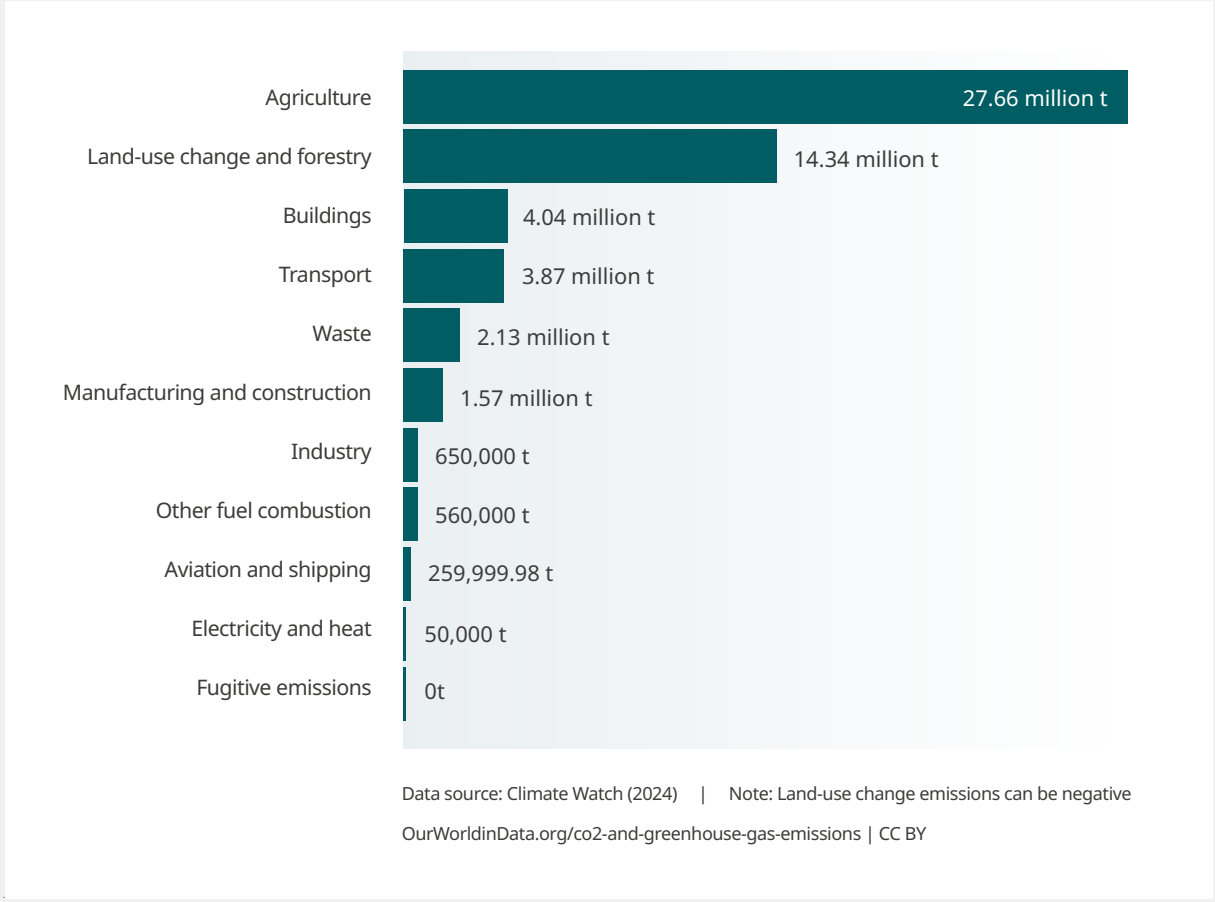
The first Global Stocktake at the 28th Conference of Parties (COP28) for the United Nations Framework Convention on Climate Change (UNFCCC) in Dubai highlighted the urgency of reducing methane emissions. Key global initiatives—including the Global Methane Pledge and the Oil and Gas Decarbonization Charter—demonstrate increasing international pressure on producers to reduce methane intensity.

Globally, the oil and gas sector is taking steps to decarbonize the production of petroleum and gas. According to the International Energy Agency's 2025 methane tracker, producing countries employ measurement, monitoring, reporting and verification procedures to track and ascertain the levels of methane emissions from the oil and gas production process for each country. There are also other mechanisms used by oil and gas producing countries. These include leak detection and repair (LDAR) requirements, use of low-emission equipment, and restrictions on routine flaring and venting. While many countries have committed to mitigating emissions from oil and gas production as part of the Global Methane Pledge launched in 2021[9] and the Oil and Gas Decarbonization Charter in 2023, implementation has been inadequate.

State of methane emissions in Uganda

There is currently no documented baseline data specific to methane emissions in Uganda, and no baseline data specific to oil and gas production, since Uganda has not yet commenced production. As such, available data refer more generally to GHG emissions. Most of Uganda's current GHG emissions are from energy (hydrocarbons, wood fuel and charcoal), agriculture, land use and the forestry sector. As shown in Figure 1, Uganda emitted roughly 115 million tonnes of CO_2-equivalent in GHG emissions in 2021.

Figure 1. Uganda's GHG emission profile, 2021 (tonnes CO_2-equivalent).



9 https://www.iea.org/reports/global-methane-tracker-2025/key-findings

The energy sector currently accounts for about 15 percent of the country's GHG emissions, with the vast majority coming from agriculture, forestry and other land-use (AFOLU) and waste sectors. Energy-related CO_2 emissions rose steadily over the past two decades, reaching 7 million tonnes of CO_2 emissions.[10] According to the African Energy Commission in 2024, energy-sector methane and nitrous oxide emissions are largely associated with traditional use of biomass for cooking, and have risen alongside the growth in households without access to clean cooking, to 13 million tonnes of CO_2-equivalent in 2021. However, the commencement of oil production will significantly alter the country's emissions profile, making early methane management essential.

Potential methane emissions from Uganda's oil and gas production

Uganda is expected to commence oil production in 2027 at the earliest, through the Lake Albert Project, involving three companies: TotalEnergies operating the Tilenga Project, China National Offshore Oil Corporation operating the Kingfisher project, and the Uganda National Oil Company. The oil project is characterized by upstream oil production, a crude oil pipeline, a refinery located in Hoima, a refined oil pipeline and storage terminals located in Wakiso District. Ahead of production, Uganda is increasingly focusing on oil-sector methane emission abatement as it moves to meet its GHG emission targets by 2030.

Tackling scope 1 and 2 emissions from oil and gas is one of the most viable and lowest-cost options to reduce methane emissions.[11] While Uganda does not have any baseline data reflecting current methane emissions from the oil and gas sector, the economic, social and environmental impact assessment (ESIA) report for the country's Tilenga project estimates that emergency flaring will produce 591,400 tonnes of additional CO_2 per annum.[12]

Using the same estimate, flaring at the Kingfisher Development Area, which will produce 40,000 barrels of oil per day, will generate approximately 124,505 tonnes per annum. Flaring alone is likely to produce 715,905 tonnes of CO_2-equivalent per year. The production, transport and use of oil and gas, as well as venting, flaring and leaking of CO_2 and methane, will generate further GHG emissions.

Uganda needs to manage the risks associated with increased methane emissions from the oil and gas sector, in order to meet global climate change commitments, and to keep oil and gas investments and exports competitive in the context of the global energy transition. To contribute to methane emission abatement efforts in Uganda's oil and gas sector and complement the interventions by the Ministry of Energy and Mineral Development, NRGI undertook a mapping study to outline Uganda's oil and gas sector methane emission abatement ambitions. The study aimed to map efforts and actors in emissions reduction in the sector, and to understand the main issues, challenges and opportunities the country faces in achieving its methane emission abatement ambitions.

This briefing paper draws on NRGI's mapping to highlight Uganda's oil and gas methane emission abatement ambitions when oil production commences. It focuses specifically on Uganda's oil and gas sector, and explores how associated methane emissions could be reduced, even when the sector is in its infancy.

10 https://au-afrec.org/sites/default/files/2024-11/English%20Ver._Main%20Publication_Sustainable%20Scaling_Meeting%20the%20Clean%20Cooking%20Challenge%20in%20Africa.pdf - Catalogues EN 164
11 World Energy Outlook 2025 – Analysis - IEA
12 https://totalenergies.ug/projects/tilenga/tilenga-project-esia-report

Uganda's oil and gas sector methane abatement plans

Collecting data on methane emissions

Parties to the UNFCCC, including non-Annex 1 countries like Uganda,[13] are required to prepare and submit their national communication to the UNFCCC. Uganda submitted its Third National Communication in July 2022,[14] reporting on its implementation of the Paris Agreement, and its climate adaptation and mitigation efforts.

Annex 1 of Uganda's Third National Communication to the UNFCCC shows that methane from fuel combustion in Uganda amounts to more than 123,000 gigagrams.[15] This constitutes methane mainly from the energy industries and the manufacture of solid fuels. However, the report indicates that oil and gas extraction activities generate zero methane emissions, since oil production has not commenced.

Robust methane MRV procedures are required for governments and companies to understand the extent of their emissions profile, as a first step in efforts to reduce methane emissions in the oil and gas sector. Uganda's National Climate Change Act (NCCA) 2021 requires that companies must take stock of GHG emissions associated with their activities.

Current reports on GHG emissions in Uganda use only Tier 1 methodology, due to data limitations. There have been efforts to enhance the capacity of government and other key players in measuring and reporting GHG emissions from all sectors.[16] For example, the Tilenga and East African Crude Oil Pipeline Project (EACOP) overview reveals that TotalEnergies plans to put in place an independent verification process for reported GHG emissions.[17]

The Climate Change Department (CCD) in the Ministry of Water and Environment is responsible for compiling and reporting on methane emissions in Uganda. It is not clear whether the department has adequate capacity to handle methane emissions data from the oil and gas sector. However, there are other remote-sensing data sources, such as MethaneSAT,[18] which provide an opportunity to record methane emissions from the oil and gas sector remotely.

Uganda signed the UNFCCC in 1993 and ratified it a year later. The Convention's objective is to stabilize GHG emissions to avoid dangerous interference in the global climate system. Being a non-Annex I country, Uganda is not required to implement emissions reductions but has implemented more than 180 Clean Development Mechanism projects, including Bujagali hydroelectric dam, and several tree-planting and renewable energy projects. As the world implements the energy transition, most organizations are moving away from measuring methane emission reduction using methodologies aligned to the clean development mechanisms, in favor of methodologies aligned with the rules of the Paris Agreement crediting mechanisms.

Uganda is a signatory to the Paris Agreement and submitted its first Nationally Determined Contribution (NDC) in 2015 and an updated NDC in 2022. The mitigation ambition in this updated NDC is to reduce GHG emissions by 24.7 percent by 2030—which equals a reduction of 36.75 million tons of CO_2-equivalent emissions between 2022 and 2030. These reductions in Uganda come mainly from the AFOLU sector, which is expected to contribute 20 million tonnes of CO_2-equivalent, with the energy sector only contributing 2.34 million tonnes of CO_2-equivalent.

13 Non-Annex I countries are predominantly low-income developing countries.
14 https://unfccc.int/documents/562307
15 unfccc.int/sites/default/files/resource/Final TNC Uganda.pdf
16 https://climate-transparency-platform.org/sites/default/files/project_document_file/ugandaghgi-mrvstakeholder-roles-and-responsiblities.pdf
17 https://totalenergies_tilenga-EACOP-projects_2025_en.pdf
18 https://www.methanesat.org/

The current NDC does not include oil and gas as a sector, nor does Uganda's national GHG inventory. This could be attributed to the fact that oil production has not yet commenced, hence there is a lack of streamlined activity data to inform modeling or its inclusion in the GHG accounting in the Intergovernmental Panel on Climate Change inventory. However, these targets should include oil and gas-related emissions data, since oil and gas production and refining will result in GHG emissions. Flaring could potentially produce 2.1 million tonnes of CO_2-equivalent between 2028 and 2030, or 100 percent of the energy-related emissions to which Uganda has committed in its NDC.[19]

The Paris Agreement requires that countries update their NDCs every five years, including revising their mitigation targets to raise ambition. Uganda's NDC is up for review, at a time when oil and gas extraction is close to starting. Oil and gas-related emissions data should therefore be included, if not in the 2024–2026 update, then the next one, due in 2030–2031. Other oil-rich countries have developed ambitious plans for methane emission abatement. For example, as a party to the Global Methane Pledge, Nigeria has committed to eliminate routine flaring by 2030 and to reduce fugitive emissions from leaks in the oil and gas sector by 95 percent by 2050.[20]

Uganda's Petroleum (Refining, Conversion, Transmission and Midstream Storage) Act, 2013, provides in Article 38 that, "a licensee shall not flare or vent petroleum in excess of the quantities needed for normal operational safety without the approval of the Minister of Energy and Mineral Development on the advice of the Petroleum Authority of Uganda".

The NCCA (2021) provides for the measurement of GHG emissions for the purposes of maintaining a national GHG inventory, and states that the Minister of Water and Environment shall, by regulations, prescribe the standard format, requirements and methodologies for measurement of emissions and removals of the targeted GHGs.

The law also provides that individuals and private entities must develop mechanisms to lower GHG emissions and promote green growth, and coordinate the related measurement, reporting and verification of emissions.

According to Uganda's 2022 NDC update, the emissions under the business-as-usual scenario in the energy sector will increase from 5.7 million tonnes of CO_2-equivalent in 2015 to about 12.4 million tonnes in 2030, provided current practices and policies remain unchanged. The country commits to reducing GHG emissions in the energy sector by 18.8 percent, to 10.1 million tonnes of CO_2-equivalent by 2030. However, Uganda's NDC mitigation ambition needs to be raised to include GHG emissions from oil and gas.

Uganda's legal and institutional frameworks for methane emissions abatement

Legal framework

To set the stage and prepare for the oil and gas sector, Uganda has established a policy and legal framework to regulate the oil and gas industry.

The Energy Policy, 2023

Uganda's proposed Energy Policy 2023 laid the foundations for methane abatement in the oil and gas sector. The policy outlines the roles and responsibilities of different ministries, agencies and departments, and highlights the need for environmental considerations in oil and gas development. It prioritizes methane emission mitigation in the context of Uganda's development agenda and aims to balance the need for energy access with that of environmental management of methane emissions. The policy demonstrates government commitment to responsible low-emission oil production to achieve sustainable economic development and the energy transition.

19 https://unfccc.int/sites/default/files/NDC/2022-09/Updated%20NDC%20_Uganda_2022%20Final.pdf
20 https://unfccc.int/sites/default/files/2025-09/Nigeria%20NDC%203.0%20-%20Transimission%20Version%202.pdf

The Petroleum (Exploration, Development and Production) Act, 2013

The Petroleum (Exploration, Development and Production) Act, 2013 seeks to establish institutions to manage petroleum resources and regulate petroleum activities, including licensing, exploration, development, production and decommissioning. The Act aims to ensure sustainable exploitation of oil and gas resources, which addresses environmental concerns, including methane emissions. It also established the Petroleum Authority of Uganda and the Uganda National Oil Company (UNOC). Section 100 of the Act prohibits flaring and venting, unless in emergency situations. Related regulations have been developed, including the Petroleum (Exploration, Development and Production) (Metering) Regulations, 2016, which aim to ensure that all products are appropriately metered, including amounts of gas flared, and the National Environment (Oil Spill Prevention, Preparedness and Response) Regulations, 2020.

The Petroleum (Refining, Conversion, Transmission and Midstream Storage) Act, 2013

The Refining, Conversion, Transmission and Midstream Storage Act, 2013 aims to establish an effective legal framework to ensure that Uganda's midstream operations are carried out in a sustainable manner that guarantees optimum benefits for present and future generations of Ugandans. It aims to ensure public safety and the protection of public health and the environment in relation to midstream operations. Specifically, Section 38 provides for prohibition of flaring and venting in oil and gas operations.

Uganda's Energy Transition Plan

Uganda's Energy Transition Plan (ETP)[21] is a strategic roadmap for the development and modernization of Uganda's energy sector. It charts a pathway to achieve universal access to modern energy, and to power the country's economic transformation in a sustainable and secure way. Its recommendations include ensuring that extractive projects are subject to rigorous environmental impact assessments, and to monitoring, reporting and verification requirements to reduce methane leakage from oil and gas operations to around 0.3 kilotonnes per million barrels of oil equivalent. The ETP prioritizes low-emission oil production that minimizes methane emissions from the sector and sets out steps to decarbonize the energy sector beyond 2050, in order to achieve net zero carbon emissions, while ensuring a just and inclusive energy transition. The plan includes a strategy for methane emission intensity per barrel of oil, and aims to power oil and gas operations, including the pipeline, with low-emission sources of electricity, to minimize methane emissions from the power sources used to heat the pipeline.

The National Climate Change Act, 2021

The NCCA (2021) gives the force of law in Uganda to the UNFCCC and the Paris Agreement and provides for the country's participation in climate change mechanisms and measurement of GHG emissions. Under the Act, the Minister of Water and Environment will prepare regulations to prescribe the standard format, requirements and methodologies for measurement of emissions and reductions in targeted GHGs.

Uganda's Nationally Determined Contributions

The NDC updated in 2022 is Uganda's climate action plan and summarizes the country's proposals for achieving adaptation and mitigation objectives. Whereas the current NDC does not explicitly set targets for methane emissions in the oil and gas sector, future iterations offer an opportunity to establish such targets.

21 https://iea.blob.core.windows.net/assets/f07d075d-de48-4967-a8c8-4806c7247eb7/UgandaEnergyTransitionPlan.pdf

Institutional framework

In addition to the Climate Change Department, government agencies with a mandate or responsibilities relating to oil and gas or monitoring and reporting GHG emissions include:

a. The Ministry of Energy and Mineral Development—the lead institution that oversees the country's energy sector, and the policy-making organ. Other institutions are the Petroleum Authority of Uganda and UNOC. The key infrastructure for oil and gas production comprises the upstream production under the Lake Albert Project, the related refinery and the pipeline.

b. The Petroleum Authority of Uganda, which is the regulator of all upstream and midstream oil and gas activities, and has the mandate to monitor and regulate these activities, and ensure compliance with national laws and international best practices.

c. The National Environment Management Authority, which provides technical guidance for environmental and social impact assessments, and carries out environmental audits and inspections to ensure compliance with environmental standards and sector regulations.

Policies and initiatives by companies operating in Uganda

In addition to the national policy and legal framework, individual players in Uganda's oil and gas sector are focused on ensuring environmental sustainability of their developments, to comply with the country's legal requirements.

UNOC is developing a Climate Action Plan, and has an environmental, social and governance (ESG) strategy, under which 40 million trees are to be planted from 2022–2029. The strategy defines six priority areas: good governance; climate change mitigation and adaptation; quality, health, safety and environment; social license to operate; diversity, equity and inclusion; and national participation. The company has also established the Alliance for Climate Resilience, with the goal of environmental and social sustainability both at the workplace and in local communities.

EACOP has several environmental and social management plans.[22] After work on the pipeline began, the Advocates Coalition for Development and Environment conducted an environmental and social compliance assessment in 2023.[23] ESIAs were conducted for all the major oil and gas projects in Uganda, including the Tilenga project, the Kingfisher project and the EACOP project, by TotalEnergies, in collaboration with Eco and Partner Consult. The ESIA reports are publicly available from the respective company websites. However, these reports are not explicit about GHG emissions from each project. Following the ESIA for the Tilenga project, TotalEnergies commissioned a climate risk and GHG assessment study, conducted by BIMCO Consult. The study included a climate change risk assessment for the Tilenga Project, and also aimed to update the project's GHG Emissions Inventory, recommend GHG mitigation and adaptation actions for consideration by TotalEnergies, and develop a GHG emissions monitoring and reporting framework for TotalEnergies to implement.

The Tilenga project is committed to no flaring, except for in emergency situations, and to keeping GHG emissions at the lowest levels. Additional measures are being planned for methane emission mitigation, including the establishment of an LDAR system; the provision of vapor recovery units for storage tanks; the conversion of excess gas to liquid petroleum gas, and optimizing the efficiency of combustion devices.

22 https://www.eacop.com/wp-content/uploads/2022/09/ESMP-ONLINE-COPY-APPROVED-.pdf
23 https://csco.ug/wp-content/uploads/2024/09/CSCO-PRS13.pdf

Civil society, the media and other stakeholders

Stakeholders play an important part in ensuring robust policy-making, implementation and monitoring. The legal framework provides for stakeholder involvement in policy-making and monitoring, including around oil and gas. In Uganda, stakeholders work through collaborative partnerships at the subnational, national and international levels, drawing on highly experienced technical assistance to support their advocacy. There are a number of civil society organizations (CSOs), non-governmental organizations (NGOs) and other actors working on climate change and ESG in the extractive sectors in Uganda. These include the Advocates Coalition on Development and Environment, the Civil Society Budget Advocacy Group, the Civil Society Coalition on Oil and Gas, the Climate Action Network, Oxfam International and the World Wide Fund for Nature.

Civil society actors support information sharing, community empowerment, policy enhancement and adherence to international best practices, especially in areas related to social inclusion and human rights.

Stakeholders' objectives include building resilience and adaptation to deliver climate justice for vulnerable communities; advocating for the elimination of harmful investments, subsidies and other incentives that negatively impact emissions, human rights evictions and child labor; advocating for tax transparency and justice; and supporting transformative action to ensure a fair and just energy transition.

The Extractive Industries Transparency Initiative (EITI) requirement 3.4 on GHG Emissions states that companies are encouraged to disclose emissions disaggregated by project, commodity or specific operational site where feasible, in alignment with existing leading disclosure standards. Uganda joined the EITI in 2020. Among other activities, the EITI will collect emissions data and provide recommendations on reforms to ensure abatement of emissions from oil and gas production, including methane.

Uganda has already begun including GHG emissions in its EITI reporting, while other EITI countries have commenced disclosure of emissions data. For example, a November 2025 stock take by the EITI Secretariat showed that 14 of the 49 EITI countries (or 29 percent) are reporting on GHG emissions. In Nigeria, for instance, companies individually submit their emissions data to the Nigeria EITI (NEITI) annually. NEITI then validates these data with the government's upstream regulator, and also conducts an annual audit of oil and gas emissions data.

To support inclusive policy-making, the government has established an annual stakeholders conference, through the Petroleum Authority, including representatives from government, the private sector and CSOs working on environmental governance in the oil and gas sector. The event serves as a vital platform for dialogue, transparency and trust-building among diverse stakeholders.

However, despite the engagement of CSOs and other stakeholders, the oil and gas sector faces several challenges. These include inadequate information and awareness among civil society and non-government actors about methane emission data collection and the government's abatement ambitions; inadequate legal provisions related specifically to methane abatement in the sector, and inadequate capacity and resources for tracking, monitoring and enforcement of the country's existing provisions on emission abatement.

Involvement of CSOs in the oil and gas sector helps to provide a platform for dialogue, transparency and trust-building across the sector. NGOs and CSOs are key in supporting information sharing, community empowerment, policy enhancement and adherence to international best practices, especially in areas related to social inclusion and human rights.

International initiatives and commitments

Numerous international initiatives can support emissions reduction in Uganda's oil and gas sector. These include:

a. Oil and Gas Climate Initiative, which brings together CEOs from 12 of the largest oil and gas companies worldwide to lead the industry's response to climate change.

b. Global Methane Hub, which funds and convenes partners at the international, national and local levels to ensure all actors are working together toward the shared goal of curbing methane pollution in the most efficient way possible.

c. Oil and Gas Methane Partnership 2.0, a measurement-based reporting framework under the United Nations Environment Programme, which centers around a multi-year process in which companies improve the accuracy and granularity of emissions targets and reporting. There is a need to align national regulations with the partnership.

d. The Global Methane Pledge, launched at COP26 by the European Union (EU), which had 159 members by January 2025. Under the pledge, members developed the Methane Abatement Partnership Roadmap, launched at COP29 in Baku. The roadmap sets out a robust measurement, monitoring, reporting and verification system, built on the Oil and Gas Methane Partnership 2.0, and complemented by other measures.

e. World Bank Zero Routine Flaring by 2030 initiative, a framework launched in 2015 that commits governments and oil companies to end routine flaring no later than 2030. Participating governments and oil companies commit to reporting their flaring and progress towards the initiative annually. A few international oil companies have signed up to the initiative.



Kampala, Uganda - photo by Jose Matheus via Shutterstock

Challenges to Uganda's oil and gas methane emission abatement

Inadequate provision for methane emission reduction

While Uganda has established a legal, policy and institutional framework for regulation of the oil and gas sector, these measures have not been explicit in detailing how methane emissions will be tracked and reported. Several factors will affect efforts to reduce oil and gas-based methane emissions in Uganda:

Lack of incentive systems for methane emissions abatement

The government has not developed a clear incentive regime for methane emissions abatement. Article 22 of the National Climate Change Act (NCCA) requires that incentives for both climate change adaptation and mitigation will be provided by the Minister of Finance. The Act also states that regulations for these incentives will be developed. However, such regulations have not been formulated. In addition to incentives, the government needs to introduce methane abatement penalties in the form of fees or taxes charged to sector players who fail to comply with agreed methane reduction levels.

Countries such as Brazil, Guyana, Nigeria and Norway already impose a financial charge or tax on flaring and venting, in order to encourage cost-effective methane emission reduction. However, there does not seem to have been any benchmarking against which to assess how effective the penalties are in helping to reduce methane emissions in these countries.

Inadequate coordination for methane emissions abatement

Oil and gas actors implement activities that collectively contribute to overall emissions reduction in the sector—for example, UNOC's tree-planting plans, or TotalEnergies' assessment of likely GHG emissions from the Tilenga project. These individual plans should be brought together under the bigger national plan for minimizing methane emissions from the oil and gas sector. Key players in the sector are keen to keep their GHG emissions low and to conduct offset interventions in Uganda. There have been campaigns to stop Uganda's oil and gas projects, such as the Stop-EACOP campaign, which aimed to prevent construction of the pipeline and make it hard for Uganda to operationalize the oil project.[24]

Inadequate information and awareness around methane emission abatement

The Ugandan public is increasingly aware of and engaged with climate change issues. However, little attention is paid to methane emissions from the oil and gas sector. Uganda usually sends a delegation to the UNFCCC COP meetings, with public events beforehand, where issues for discussion are presented by officials from the Climate Change Department. After the COP meetings, the Department also organizes debriefings. The public is free to participate in these events. For example, in 2024, ahead of COP29 in Baku, the Department organized a forum bringing together stakeholders from government, the private sector, academia, development partners, youth and civil society, to help build consensus on Uganda's climate priorities for the COP gathering.[25]

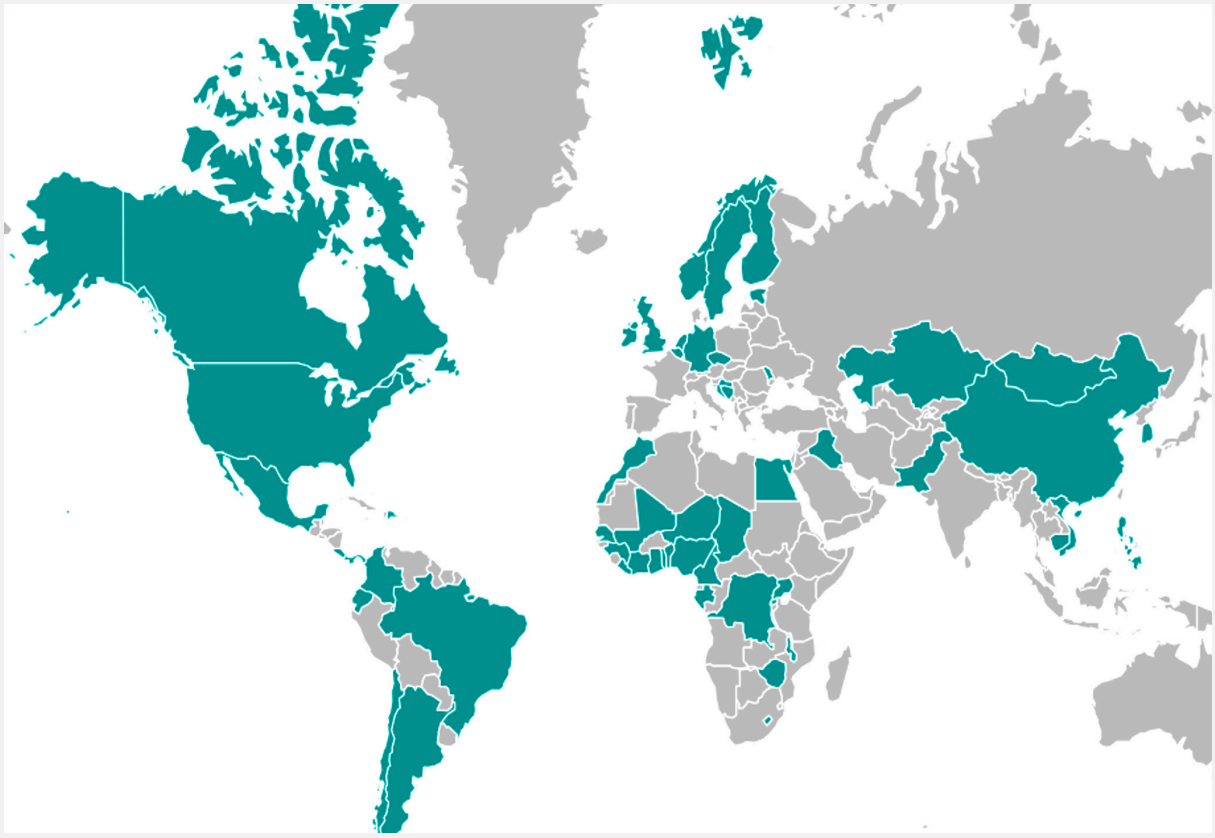
24 https://www.stopeacop.net/
25 https://observer.ug/viewpoint/here-are-uganda-s-priorities-at-cop-29-in-baku/

However, these events focus on improving access to climate finance and on efforts to reduce the vulnerability of Uganda's key sectors to the impacts of climate change. GHG emissions, particularly methane emissions from the oil and gas sector, are not among the main issues discussed. In addition, the Ugandan Parliament lacks adequate information on the reforms needed to enhance sustainable exploitation of the country's oil reserves and other extractive resources—through effective legislation, information sharing, oversight, engagement and accountability—to benefit the country's citizens.

Inadequate transparency, measurement and reporting of methane emissions

The Global Methane Pledge aims to cut global methane emissions by at least 30 percent between 2020 and 2030. Several countries have submitted their methane action plans or roadmaps, which outline existing policies and future activities to reduce methane emissions by 2030 and beyond.

Figure 2. Countries with national methane roadmaps or action plans



Through the Ministry of Energy and Mineral Development and the Petroleum Authority of Uganda, the government provides highlights of key developments in the sector and among its leading players.

While oil production has not yet commenced, the country has an important opportunity to prepare a roadmap for oil and gas sector players in monitoring and implementing measures to reduce methane emissions.

Strengthening Uganda's oil and gas methane abatement – key recommendations

Reduction in methane emissions is one of the key steps to achieving climate change mitigation goals. Globally, oil-producing countries have developed mechanisms to measure, monitor and verify methane emissions from the sector to inform abatement. Oil companies have also taken steps to decarbonize the sector. These carry useful lessons for Uganda. The recommendations below will help the country follow a low-methane pathway as it pursues the development of its oil and gas sector.

1. As a promising oil and gas producer in the East African region, Uganda requires an explicit methane abatement roadmap that specifies how the country plans to monitor, report and reduce methane emissions from various sectors, including oil and gas. Preparation of the methane roadmap should be the responsibility of the Climate Change Department, in collaboration with the Ministry of Energy and Mineral Development, the Ministry of Finance, Planning and Economic Development, the Petroleum Authority and other relevant agencies. A more elaborate roadmap could be prepared to cover the anticipated 25-year duration of oil and gas extraction in Uganda.

2. The National Climate Change Act requires that companies and organizations, both public and private, should collect data on GHG emissions and report these regularly to the Climate Change Department. Key players in the oil and gas sector should make a commitment to collect methane data associated with their operations and report them to the relevant government agencies. This should be accompanied by plans for verification of the data by the Climate Change Department and the EITI Secretariat, where feasible. Government agencies should be able to share relevant emissions information among themselves, as well as with non-government stakeholders.

3. As provided for in the National Climate Change Act, the Minister of Water and Environment should ensure the preparation of regulations to prescribe the standard format, requirements and methodologies to measure emissions and reductions of targeted GHGs. Where necessary, these regulations should make explicit the methodologies for measuring methane emitted by the oil and gas sector.

4. Section 149 of the Petroleum Exploration and Production Act (2013) provides that a licensee shall keep records on the enterprise, including records of the amount of natural gas flared or vented. However, there is no provision that these data will be shared with the regulator (the Petroleum Authority of Uganda) or with the public. The government should make provisions to ensure that methane data are shared with the designated agency, consolidating all GHG data in the country.

5. Uganda's third Nationally Determined Contribution (NDC 3), now under formulation, should include emissions from the oil and gas sector, as exploitation of oil is expected to start in 2027. The country's next NDC update should also be more explicit on methane emissions reduction targets for key methane-emitting sectors.

6. Most GHG inventory data for Uganda is based on Tier 1 methodology, partly due to the country's lack of technical capacity for the more detailed Tiers 2 and 3 methodologies. Capacity building is required to enable government agencies—such as the Climate Change Department and the Petroleum Authority of Uganda—and sector partners to collect methane emissions data using Tiers 2 and 3 methodologies.

7. Uganda should join the Global Methane Pledge and other international initiatives for the reduction of methane from the oil and gas sector.

About the authors

At NRGI, Ibrahima Aidara is the deputy Africa director, Ann-Mary Kusiima is the Uganda program associate, and Paul Bagabo is the Uganda country manager.

Acknowledgements

Special thanks to NRGI colleagues who contributed to the paper: Nafi Quarshie, Amir Shafaie, Rob Pitman, Tengi George-Ikoli and Aida Diop. We are also grateful to Damilare Ogunmowo from the NRGI communications team, for the paper's design and publication.

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