



COMAT Country Methane
Abatement Tool

CoMAT in Action:

Transforming National Approaches to Oil and Gas Methane Mitigation

February 2024

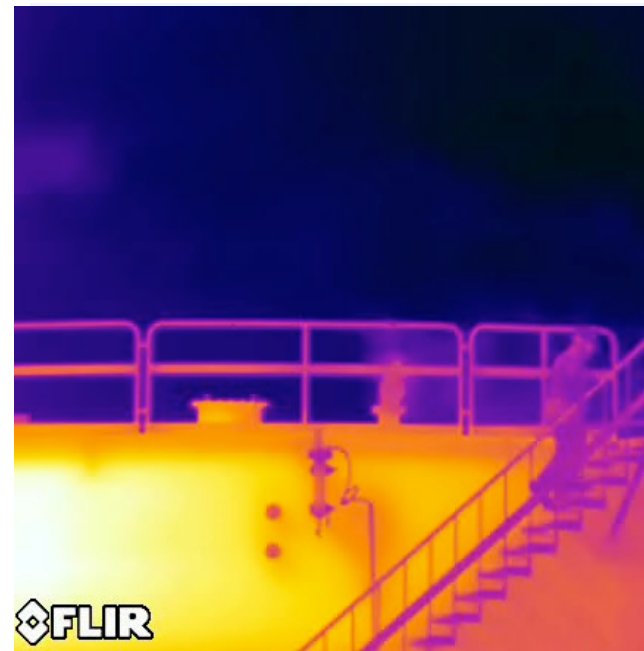
Prepared by Clean Air Task Force



The need

A significant barrier to the development and implementation of methane mitigation policies around the world, is that government officials often lack data regarding the origin and magnitude of emissions in the oil and gas sector.

CoMAT was designed to efficiently help policymakers and governments understand and address methane emissions within their jurisdictions.



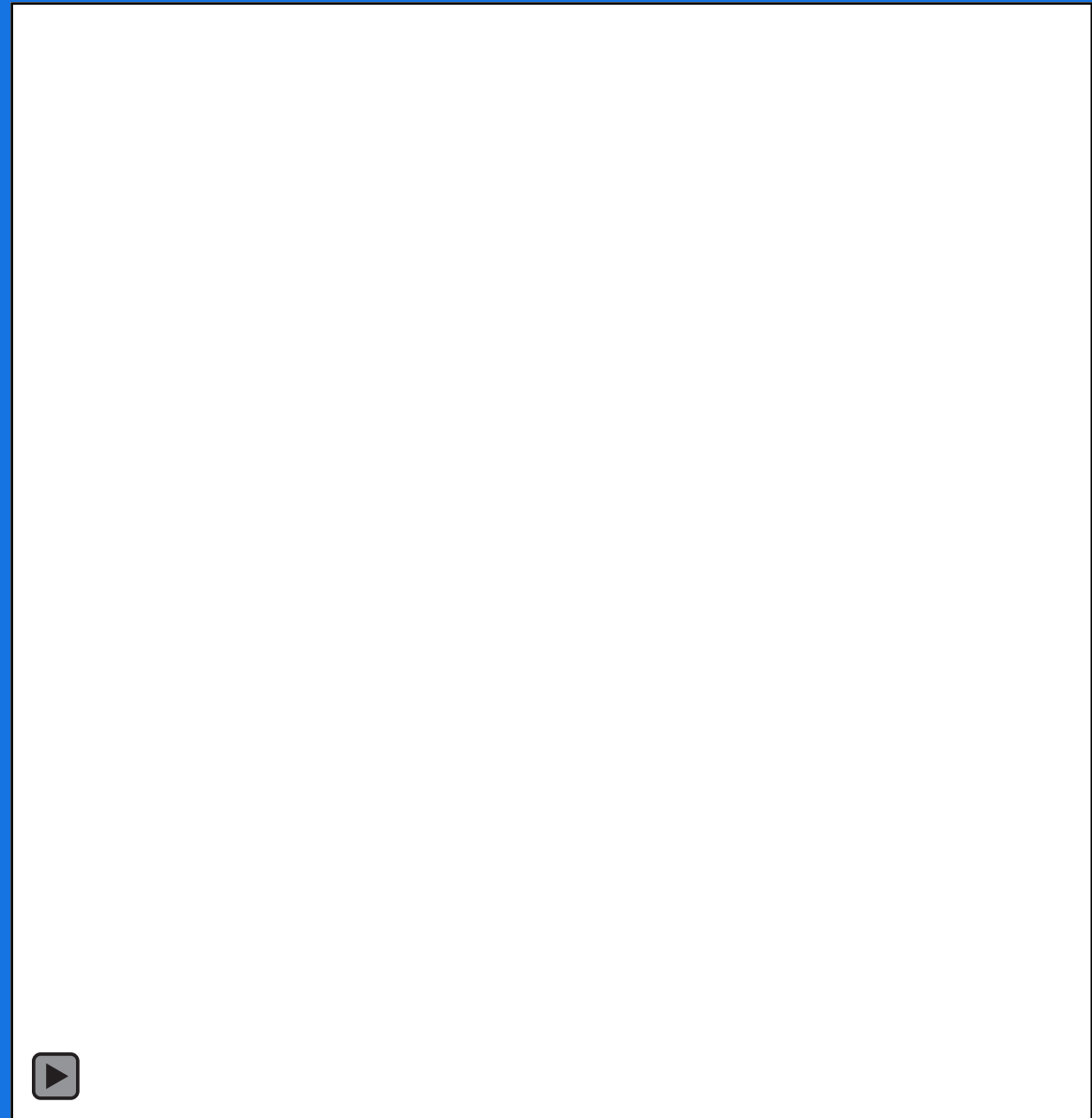
The solution: CoMAT

Country Methane Abatement Tool

The CoMAT App supports countries to:

1. Understand the sources and magnitude of methane emissions in their oil and gas industry.
2. Develop a tailored mitigation plan with goals.

CoMAT is not a black box. All the assumptions, methodology and calculations inside of the tool can be viewed and adjusted as users see fit.



CoMAT's Methodology

Core of the CoMAT methodology is based on:

- U.S. GHG Inventory (with some modifications)
- Country user input
- Potential for country-specific customization

Emissions estimates are driven by estimates of equipment, amount of gas produced, and other data points.

USER INPUT

1. Industry Parameters

Total active gas wells

2. Activity Drivers

Number of natural gas powered pneumatic controllers per well

3. Activity Data

Total number of natural gas-powered pneumatic controllers

4. Emission Factors

CH₄ emissions per natural gas-powered pneumatic controller

5. Emissions

CH₄ emissions from all natural gas-powered pneumatic controller

6. Mitigation

Abatement percentage or activity data change

CATF's country engagement process

Stages

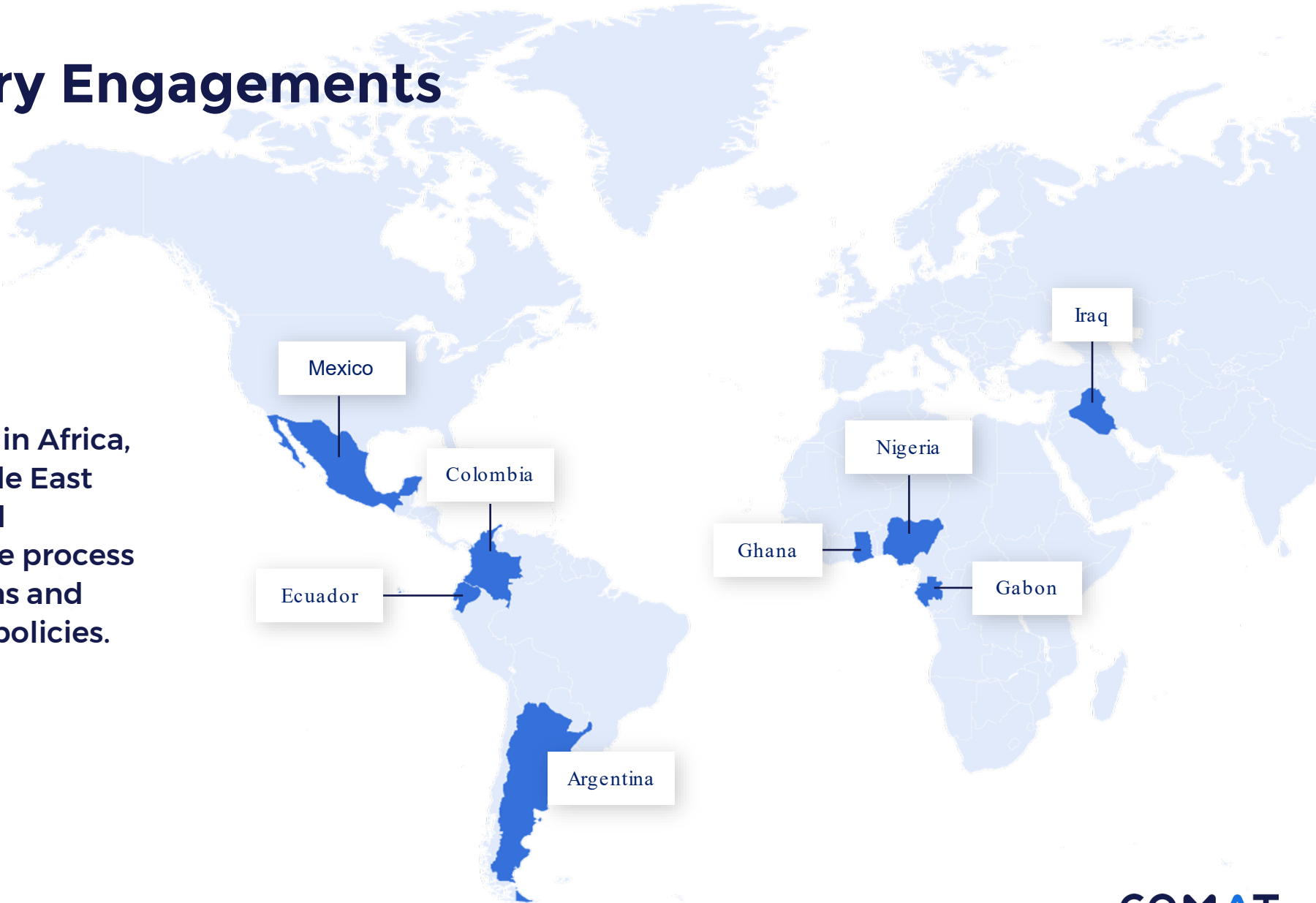
1. Establish **partnerships with government officials** and other stakeholders.
2. Organize **best practices workshops** to engage all stakeholders in country to **build a common understanding** of the issue and gain insights into national priorities.
3. **Deploy CoMAT** with partners virtually and in person.



4. Use learnings and insights from CoMAT to **inform policy and guideline design**
5. Provide additional support to government officials including:
 - I. Support to **socialize policies** and guidelines with industry
 - II. Organize **Optical Gas Imaging** tours with policy makers and companies to make methane emissions visible and raise awareness
 - III. Create **connections** to other organizations in the methane network
 - IV. Provide **capacity building** around **remote sensing** activities (drone, airborne & satellite measurements)

CoMAT: Country Engagements

As part of our engagements in Africa, Latin America and the Middle East we use CoMAT with national governments to facilitate the process of designing mitigation plans and identifying areas for strong policies.



CoMAT in Action

Mexico: CATF initiated engagement in 2016 as Mexico began developing methane regulations, which catalyzed the need for CoMAT. Collaborations included working with the government and Carbon Limits on emission estimates and recommendations.

Colombia: Engagement started in 2016, involving high-level meetings and workshops to address methane issues. Collaborations led to better emission estimates, policy identification, and CoMAT integration into Colombia's climate plan.

Nigeria: CATF collaborated with various Nigerian ministries and agencies to understand major methane emission sources, calculate emissions using CoMAT, and establish emission reduction targets for 2031, reflected in Nigeria's revised NDC.

Gabon: CATF partnered with Gabon's Ministry for the Protection of the Environment, supported by CCAC, to enhance methane emissions inventory and mitigation strategies using CoMAT.

Ghana: Collaboration with Ghana's Environmental Protection Agency aims to develop a national methane emissions inventory using CoMAT for oil and gas facilities.

Ecuador: A technical collaboration with Ecuador's Ministry of Energy and Mines and EP Petroecuador involved estimating emissions, understand mitigation opportunities using CoMAT, and advocating for methane regulations in the sector.

Thank You

Questions? Please Contact:

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Mexico

In 2016, CATF started engagement in Mexico as they were beginning to develop methane regulations. This early work helped inspired the need for a tool like CoMAT.

In the past, CATF:

- Worked with the Mexican government and Carbon Limits to develop a comparison of different national emission estimates (including CoMAT) and remote sensing data and issue recommendations for the national inventory

Currently, CATF:

- Is engaging the Mexican government to identify their interest in updating CoMAT to determine mitigation potential of best practice implementation in Mexico



Colombia

In 2016, CATF started engagement in Colombia through high-level meetings, workshops, and working group meetings to build capacity and understanding of the issue of methane in the oil and gas sector.

In the past, CATF:

- Worked with the Colombian government to gain a better estimate of Colombia's methane emissions and identified policy options to reduce methane.
- CoMAT has been used by the Colombian government in the development of their sectoral 2021 Integrated Climate Change Management Plan

Currently, CATF:

- Continues working with the Colombian regulator, ANH to use CoMAT.

On February 11th, 2022, Colombia became the first South American nation to regulate methane emissions



“As long as you have clear measurements of what you need to do, it's easier to commit.”

- Diego Mesa, Colombian Minister for Mines and Energy



Nigeria

CATF has worked with the Ministry of Environment, Ministry of Petroleum, NNPC (the national oil company) and NUPRC (the regulator) to develop a deeper understanding of the sources of methane.

CATF calculated Nigeria's methane inventory using CoMAT and provided training for Nigerian officials.

As a result of CATF's work, a target to reduce 60% fugitive emissions by 2031 was included in the revision of Nigeria's NDC in 2021. To implement this policy CATF worked with NUPRC to draft guidelines



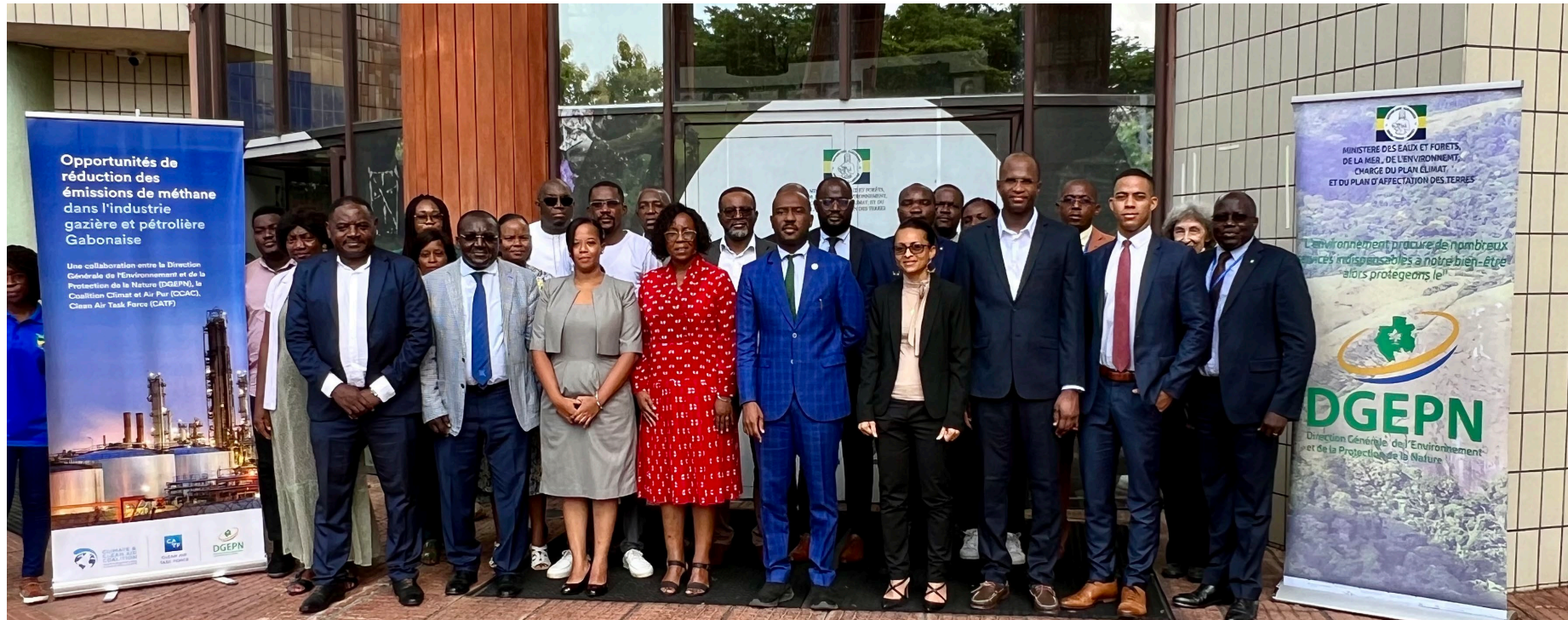
In-person training of government officials to use CoMAT in Nigeria.



Gabon

In Gabon, CATF is collaborating with the Ministry for the Protection of the Environment and Natural Resources, Forests, and the Sea. This partnership is supported by the Climate and Clean Air Coalition (CCAC).

CoMAT is being used to improve the methane emissions inventory and to better understand the sources of emissions and the potential for mitigation.



Ghana

In Ghana, CATF is working with the Ghanaian Environmental Protection Agency to use CoMAT to begin developing a national emissions inventory for methane emissions from their oil and gas facilities.



Ecuador

CATF has a technical collaboration agreement with Ecuador's Ministry of Energy and Mines to continue working with them and others (e.g., the regulator and EP Petroecuador) to share best practices, build capacity, and support flaring and methane regulations.

In the past, CATF:

- Worked with the Ecuadorian government and EP Petroecuador to estimate national emissions and potential mitigations through CoMAT

Currently, CATF:

- Is working with the Ecuadorian regulator to update CoMAT and publish a report highlighting the importance of methane regulations for the oil and gas sector



Next Steps for Scaling CoMAT Deployment

1. Accelerate deployment of CoMAT in more countries with the help of CCAC and Global Methane Hub.
 - a) Provide capacity building and training to government officials.
 - b) Leverage CoMAT results to design methane mitigation policies.
 - c) Continue improving CoMAT with feedback from users.
2. Explore synergies of using CoMAT in parallel with other tools that develop methane emissions estimation and measurements.

