



METHANE  
GUIDING  
PRINCIPLES

# Methane Guiding Principles Signatory Reporting

Exxon Mobil Corporation

August 2023



COMPANY: **Exxon Mobil Corporation**

YEAR OF JOINING METHANE GUIDING PRINCIPLES: **2017**

SENIOR REPRESENTATIVE: **Neil A. Chapman, Senior Vice President**



## Principle One: Continually reduce methane emissions

- Please state what specific activities or projects your company has undertaken to reduce methane emissions. Please refer to the previous year’s annual MGP reporting where applicable to refer to intended activity. Link to sustainability report where relevant to provide further detail.
- Describe how the reduction was achieved including description of the asset type, technology type, timeframe. What was the end result?
- Provide data to support your description e.g. the actual amount of emissions reduction achieved, or the reduction in methane intensity.

2022 completed activity	2023 intended activity
<p>ExxonMobil cut methane emissions intensity from across our operated assets by more than 50% and reduced operated absolute methane emissions by 50% through 2022 vs. 2016 levels.</p> <p>We achieved our results by:</p> <ul style="list-style-type: none"> <li>• Reducing total flaring by more than 75% from our Permian Basin operated assets compared to 2019, resulting in one of the lowest flaring intensities in the basin.</li> <li>• Enhancing operations protocols and developing plans for implementation of a comprehensive methane-monitoring and leak-detection program.</li> <li>• Conducting more than 39,000 leak surveys on more than 9.2 million components at more than 11,500 production sites.</li> <li>• Implementing design improvements, including electrifying operations and enhancing the reliability of storage tank facilities, and eliminating high-bleed, natural gas-driven pneumatic devices across our U.S. unconventional operated assets.</li> </ul>	<p>ExxonMobil’s <a href="#">2023 Advancing Climate Solutions Progress Report</a> expands on the company’s 2030 greenhouse gas emission-reduction plans. These plans are consistent with Paris-aligned pathways, the U.S. and European Union’s Global Methane Pledge and the U.S. Methane Emissions Reduction Action Plan. ExxonMobil has also announced an ambition to achieve Net Zero Greenhouse Gas Emissions by 2050.</p> <p>Our 2030 emission-reduction plans are intensity based. They focus on driving industry-leading performance while still meeting the needs of society. These emission-reduction plans cover Scope 1 and 2 emissions from assets we operate, compared to 2016 levels. For non-operated assets, we work with our equity partners to advance greenhouse gas reductions to achieve comparable results.</p> <p>Our 2030 GHG emission-reduction plans are:</p> <ul style="list-style-type: none"> <li>• 20-30% reduction in corporate-wide greenhouse gas intensity.</li> <li>• 40-50% reduction in upstream greenhouse gas intensity.</li> <li>• 70-80% reduction in corporate-wide methane intensity.</li> <li>• 60-70% reduction in corporate-wide flaring intensity.</li> </ul> <p>We are also working to eliminate all of our natural gas-driven pneumatic devices by 2025 in our key U.S. unconventional operated assets and to accelerate the phaseout of these devices across all of our global operated assets where technically feasible.</p>



## Principle Two: Advance strong performance across the gas supply chain

Please include answers to the following questions:

1. Did you participate in any methane research or plan to do so?
  2. Did you conduct any outreach on methane management?
- Describe what action you have taken to engage industry players across the value chain to better understand how to achieve robust methane emissions management. Outreach activity could include training sessions, participation in webinars, influencing of NOJV partners, or publication of guidance. Activity could also include commercial incentives or engagement with investors to drive better performance by others.
  - Provide details of any outcomes that resulted from your action.

2022 completed activity	2023 intended activity
<p>Working together with our industry peers, regulators, researchers and NGOs, ExxonMobil has continued to undertake extensive research to understand methane emissions sources, and helped develop and test new detection and mitigation technologies. For example:</p> <ul style="list-style-type: none"> <li>• ExxonMobil joined the Gas Technology Institute-led <a href="#">Project Veritas</a> to develop and implement a standardized, science-based, technology-neutral, measurement-informed approach to reporting methane emissions.</li> <li>• We are a founding member of <a href="#">Project Astra</a>, a collaboration of universities, environmental groups and industry partners, that is developing an innovative sensor network to continuously monitor methane emissions across large areas of Texas for quick and efficient leak detection and repair. We participate in its high-frequency monitoring system that will enable operators to more easily direct resources to specific locations and could provide a more affordable, efficient solution to reduce methane emissions. In 2021, the initiative completed its first phase of sensor evaluation and launched a small-scale pilot in 2022 in the Permian Basin.</li> <li>• We also are collaborating with Stanford University and with the Collaboratory for Advancing Methane Science to progress field</li> </ul>	<p>ExxonMobil will continue to participate in research programs and collaborations.</p> <p>We will continue to work within trade associations globally to promote industry consensus on the need and means to reduce methane emissions, as well as with the Environmental Partnership in the U.S.</p> <p>Under the MGPs, ExxonMobil sponsored and will help coordinate activity under the new “Advancing Global Methane Reductions” initiative, which focuses on dedicated action by MGP signatories in select countries.</p> <p>We will also continue to support the IEA Methane Tracker activities, and help complete the Non-Operated Joint Ventures work stream.</p>



and desktop studies to better understand capabilities of current deployed satellite technology.

ExxonMobil was also a founding member of API's Environmental Partnership, whose mission is to continuously improve the industry's environmental performance with a current focus on methane and VOC emissions, and flaring. The Partnership takes action, learns together about best practices and technologies, and fosters collaboration in order to responsibly develop oil and natural gas resources. See: [The Environmental Partnership's 2022 Annual Report](#).

Through the Oil and Gas Climate Initiative (OGCI), we are working with GHGSat to finance monitoring of industry methane plumes in Iraq, one of the world's largest methane emitters. If successful, this initiative could be extended to other methane hotspots. For more information see [OGCI's website discussion of the project](#).

Within the MGPs, ExxonMobil participated in the Non-Operated Joint Ventures work stream, and helped sponsor the IEA's Methane Tracker initiative. The Methane Tracker provides emissions data by country and industry segment to assist in engagements on improved performance, as well as guidance for the adoption for new policies and regulations.



### Principle Three: Improve accuracy of methane emissions data

- Describe action taken to improve methane emissions data collection methodologies. This could be application of new technology at an operated site(s), investment and participation in R&D initiatives, development of monitoring/modelling software, or support to research that improves the accuracy of the quantification of methane emissions.
- Where new technology /software has been piloted or adopted, it is helpful to describe how it works, the reasons it was selected, and how it was deployed. Any data that can be shared to demonstrate improvements is useful.
- How these new methods/technologies has been adopted into your accounting process if at all.

2022 completed activity	2023 intended activity
<p>As described above, ExxonMobil collaborates extensively with others on leading-edge detection and measurement platforms, and on piloting new technologies in our operations to help industry reduce its methane emissions.</p> <p>We are on the forefront of technology when it comes to monitoring, measuring, and addressing fugitive methane emissions. We use satellites, aircraft, drones, facility-scale, near-continuous monitoring via fixed cameras and sensors, on-the-ground manual leak detection, and a first-of-its-kind stratospheric balloon with hyperspectral sensors.</p> <p>These technologies enable sensitive, specific detection of methane emissions. For example:</p> <ul style="list-style-type: none"> <li>• Aerial detection thresholds range from 50 kilograms per hour to less than 3 kilograms per hour on a scale of hundreds of sites per day.</li> <li>• Facility-scale, near-continuous monitoring (fixed cameras, sensors, etc.) detection limits vary with sensor placement and wind conditions and range from 25 kilograms per hour to less than 1 kilogram per hour.</li> </ul> <p>As technology continues to evolve, we are focused on transitioning to observation-based emission quantification of potential nonroutine sources. For example:</p>	<p>ExxonMobil plans to further reduce emissions at operated assets in alignment with the Global Methane Pledge and OCGI-developed Aiming for Zero Methane Emissions Initiative by deploying best practices and advanced technologies, including satellite, aerial, and ground-sensor networks.</p> <p>We plan to further reduce flaring in upstream operations to meet the World Bank Zero Routine Flaring Initiative, which mitigates methane and greenhouse gas emissions.</p> <p>We are working to expand natural gas certification in the Permian basin and in other unconventional operated assets, including Appalachia and Haynesville.</p> <p>We also plan to continue to progress our work with Scepter, to develop satellite-based technology to improve global methane detection and quantification. Currently, ExxonMobil and Scepter are collaborating to design and optimize satellite placement and coverage, initially focused on capturing methane emissions data from our operations in the Permian Basin. Scepter anticipates deploying satellites and increasing coverage to more than 24 satellites over three years, forming a large constellation network capable of monitoring oil and natural gas operations around the world.</p>



- We're deploying detection technologies in nine countries at operated assets that account for more than 80% of our methane emissions.
- We're expanding our continuous monitoring program in the Permian Basin to cover about 700 unconventional production sites by 2025.
- We recently launched the Center for Operations & Methane Emissions Tracking (COMET) in Houston, enabling real-time responses using incoming methane observations from our multilayered detection system.

We also continue to expand the volume of natural gas production that is independently certified by the non-profit organization MiQ. In April 2022, we announced that approximately 200 million cubic feet per day of natural gas produced from our Permian Basin facilities at Poker Lake, New Mexico, was independently certified and received the top grade for methane emissions management. We are the first company to achieve certification for natural gas production associated with oil. The certification from MiQ helps us meet customer demand for energy produced with lower methane emissions. It also helps us identify areas for improvement.



## Principle Four:

### Advocate sound policy and regulations on methane emissions

Advocacy consists of active participation in legal consultation processes, external policy statements, and direct engagement with government

- Consider providing details on the region or regulation involved, how you undertook your advocacy, others involved, and the outcome.

2022 completed activity	2023 intended activity
<p>ExxonMobil continued to advocate for policies that promote cost-effective solutions to address the risks of climate change including methane emissions.</p> <p>In February, for example, ExxonMobil filed a comment letter with the U.S. Environmental Protection Agency in support of its proposed regulation of both new and existing sources of oil and gas industry methane emissions. We similarly support the framework for regulating methane being developed in the European Union.</p> <p>Under the Methane Guiding Principles, ExxonMobil is a primary sponsor of the International Energy Agency’s Methane Tracker, that provides information on global methane emissions and mitigation measures, as well as a roadmap to assist countries interested in pursuing methane emissions reduction policies.</p>	<p>ExxonMobil intends to remain highly active in support of effective methane policies and regulations across the globe. We will remain engaged with the U.S. Administration, with U.S. states that pursue regulation individually, with the European Union, and other interested countries.</p> <p>ExxonMobil is also committed to working with governments to help achieve the objectives of the Global Methane Pledge. We see the value of collaborating with other methane-emitting sectors – such as agriculture, livestock, and landfills — and will share our experience, technologies and mitigation strategies to help find solutions that work for them.</p> <p>Within the MGPs, ExxonMobil will continue to sponsor the IEA Methane Tracker, and participate in discussions surrounding emissions data reporting and regulatory activities. In this regard, we sponsored and will help coordinate activity under the new “Advancing Global Methane Reductions” initiative, which focuses on dedicated action by MGP signatories in select countries.</p>



## Principle Five: Increase transparency

Please include answers to the following question:

1. Are you participating in OGMP 2.0 or do you intend to do so? If you are participating in OGMP 2.0 you may provide a link to the website.
  - Describe what activity you have carried out e.g. providing information in relevant external reports on methane emissions data, methodologies, and progress and challenges in methane emissions management.
  - If you have contributed towards the standardisation of comparable external methane reporting describe the activity you have taken.

2022 completed activity	2023 intended activity
<p>ExxonMobil published information on its methane emissions performance and programs in its <a href="#">2023 Advancing Climate Solutions Progress Report</a>.</p> <p>We have publicly reported methane emissions on an annual basis since 2014. This data is based on internationally recognized methodologies and compiled every year by determining emissions by source at each operated asset across the company.</p> <p>Our reporting framework has enabled the development of consistent and comparable data, which along with our growing field observations has guided our mitigation efforts. We are focused on emissions mitigation and the transition to observation-based emission quantification of potential non-routine sources. This is why we continue to develop and deploy enhanced technologies to ensure rapid detection, mitigation, and quantification of these non-routine sources at our operated assets.</p> <p>As noted above, we joined the Gas Technology Institute-led <a href="#">Project Veritas</a> to develop and implement a standardized, science-based, technology-neutral, measurement-informed approach to reporting methane emissions.</p>	<p>ExxonMobil will continue to release additional information on its corporate website, participate in relevant conferences and symposia, and publish study results in scientific journals.</p> <p>ExxonMobil also plans to continue working with OGCI, IOGP, IPEICA, API, AXPC, NGSA, IAGP and other trade associations in the U.S. and globally.</p> <p>Under the Inflation Reduction Act, the U.S. Environmental Protection Agency will be revising its Greenhouse Gas Inventory reporting system for methane emissions to account for empirical data. ExxonMobil will engage with EPA in this important methane emissions-reporting rulemaking process.</p>



## Methane Emissions

<p><b>Do you report absolute methane emissions within your sustainability report?</b></p> <p><i>If so provide link.</i></p>	<p>Yes. ExxonMobil published information on its methane emissions performance and programs in its <a href="#">2023 Advancing Climate Solutions Progress Report</a> and <a href="#">Corporate Sustainability Report</a>.</p>
<p><b>Do you report a methane intensity within your sustainability report?</b></p> <p><i>If so provide link.</i></p>	<p>Yes. Our <a href="#">2023 Advancing Climate Solutions Progress Report</a> (page 90).</p>
<p><b>What are your organisation’s total absolute methane emissions?</b></p> <p><b>Provide a figure in tonnes.</b></p> <p><b>Provide latest data publicly available.</b></p>	<p>On an equity basis, in 2016 ExxonMobil’s methane emissions totaled 9 million CO<sub>2</sub>- equivalent tonnes; in 2021 methane emissions totaled 5 million tonnes CO<sub>2</sub>e; and in 2022 methane emissions totaled 5 million tonnes CO<sub>2</sub>e.</p> <p>On an operated basis, in 2016 ExxonMobil’s methane emissions totaled 9 million CO<sub>2</sub>- equivalent tonnes; in 2021 methane emissions totaled 5 million tonnes CO<sub>2</sub>e; and in 2022 methane emissions totaled 4 million tonnes CO<sub>2</sub>e.</p>
<p><b>State your methodology.</b></p>	<p>Emissions are calculated based on a combination of measured and estimated data using reasonable efforts and collection methods. Calculations are based on industry standards and best practices, including guidance from the American Petroleum Institute (API) and IPIECA.</p>
<p><b>State your reporting boundary.</b></p>	<p>ExxonMobil reports emissions on both a net equity and operated basis.</p>
<p><b>What are your organisation’s methane intensity?</b></p> <p><b>Provide latest data publicly available.</b></p>	<p>In 2016, methane intensity on an equity basis was 0.06, in 2021 it was 0.04, and in 2022 it was 0.03.</p> <p>In 2016, methane intensity on an operated basis was 0.07, in 2021 it was 0.04, and in 2022 it was 0.03.</p>
<p><b>State your methodology.</b></p>	<p>Metric tons CH<sub>4</sub> per 100 metric tonnes of throughput or production.</p>
<p><b>State your reporting boundary.</b></p>	<p>Intensiy is reported on an equity and operated basis.</p>
<p><b>Do you have a methane emission target?</b></p> <p><b>If yes, please state what it is, including the boundaries and methodology.</b></p> <p><b>If no, are you developing such a target?</b></p> <p><b>Please state your intended timeline.</b></p>	<p>ExxonMobil’s methane emissions reduction plans were discussed under Principle One.</p> <p>Our 2030 GHG emission-reduction plans are:</p> <ul style="list-style-type: none"> <li>• 20-30% reduction in corporate-wide greenhouse gas intensity.</li> <li>• 40-50% reduction in upstream greenhouse gas intensity.</li> <li>• 70-80% reduction in corporate-wide methane intensity.</li> <li>• 60-70% reduction in corporate-wide flaring intensity. (Versus 2016 levels, for operated upstream assets.)</li> </ul>



Statements and data provided by herein by ExxonMobil is for information purposes only. This document includes estimates of previously disclosed or potential future emissions and events based on data available at the time of this submission. Numbers and metrics for future years are hypothetical based on certain cost and technical assumptions and are subject to change, including as a result of changes in development or production plans; the outcome of research and the development of new technologies; the ability to scale new technologies on a cost effective basis; changes in law or government policy; unforeseen technical difficulties or developments; and other factors. Nothing contained herein is intended to override the corporate separateness of affiliated ExxonMobil companies.

