



METHANE  
GUIDING  
PRINCIPLES

# Methane Guiding Principles Signatory Reporting

Shell

April 2023





COMPANY: **Shell International Exploration and Production BV (Shell)**

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

SENIOR REPRESENTATIVE: **Cederic Cremers, Executive Vice President LNG**

DISCLAIMER: **See Appendix A**



## **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>We continue to reduce methane emissions sources through operational improvement and abatement projects, including Leak Detection and Repair (LDAR) deployment and methane emissions quantification. Shell pilots and deploys a range of remote-sensing and direct-measurement technologies such as drones, infrared cameras, hi-flow samplers, Fourier-transform infrared spectroscopy, video imaging spectro-radiometry, and satellites to support initiatives that improve reporting accuracy and actively reducing methane emissions from our operations. Specific efforts to reduce methane emissions include:</p> <ul style="list-style-type: none"> <li>• Shell has been partnering with <a href="#">GHGSat</a>, a pioneer in methane detection, to determine potential methane emissions from various assets across the globe. The year-long programme covers all onshore Shell-operated and non-operated assets.</li> <li>• The installation of nitrogen skids to replace methane purges on Clipper/K-83 in the UK/NL resulted in a reduction of ~700 tonnes of methane emissions (SOV 100%-basis).</li> <li>• Integrated Gas (IG) operations continued to implement methane abatement projects, with significant focus on QGC Upstream in Australia which represents ~60% of IG's operated emissions. QGC Upstream methane emissions have been reduced by more than half between 2019 and 2022 through initiatives including: vent-to-flare projects, reduced flaring during planned turnarounds, well workover clean-out duration reduction, and improved accuracy of fugitive emission reporting.</li> <li>• In March 2022, Shell participated in the launch of the "Aiming for Zero Methane Emissions" initiative from OGCI, of which we are a member. This aims to virtually eliminate methane emissions by 2030.</li> </ul>	<p>Shell continues to identify and track implementation of methane emission reductions opportunities across our assets as part of a company-wide GHG abatement programme.</p> <p>Methane reductions are anticipated in 2023 from continued focus on routine flaring reduction projects in Nigeria and reductions in venting from well workovers and operations at QGC Upstream.</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>Shell initiated the Methane Guiding Principles (MGP), a coalition of industry, international institutions, non-governmental organisations and academics. In 2022, under the MGP NOJV working group, Shell led the “Standardised Data-sharing Agreement Terms” workstream and participated in the “Expanding Partner Collaboration Campaign” and “Managing and Reducing GHG Emissions in Existing JVs” workstreams.</p> <p>Shell co-developed the Oil and Gas Methane Partnership 2.0 (OGMP 2.0) reporting framework. Shell has been engaging with its NOVs to encourage adoption of OGMP 2.0.</p> <p>As an OGCI member company, Shell funded and participated in the Satellite Monitoring Campaign for Iraq in 2022.</p> <p>In January 2022, Shell facilitated the participation of its BGC NOV to the joint OGCI/World Bank workshop on flaring in Iraq where challenges and opportunities for flaring reduction were discussed.</p> <p>Shell Trading and Supply Company continues to identify and reduce methane emissions from the shipping fleet through upgrading existing engines to reduce methane slip, undertaking a methane slip measurement campaign across the full range of gas engines, and research and development to advance next generation technology, such as solid oxide fuel cells, which can use LNG as fuel. Chartered fleet rejuvenation enabled the selection of the best performing engines for minimising methane slip. As a result, methane emissions from operated fleet reduced by over 30% in 2022 relative to 2021.</p>	<p>Under OGCI, Shell will continue to fund and participate in the Satellite Monitoring Program for non-OGCI assets in more countries in 2023, to support methane emission reductions across the global gas supply chains.</p> <p>Under the MGP, Shell will continue to participate in the NOJV workstreams to advance methane emission reductions along the value chain.</p>



### 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>In 2022, Shell prepared and submitted its OGMP 2.0 Implementation Plan to the UN. Shell was awarded Gold Standard status for its enhanced methane emissions measurement and reporting under OGMP 2.0 for a second consecutive year.</p> <p>As part of ongoing implementation of OGMP 2.0, we commenced a Level 4 (source level) monitoring programme across a range of Integrated Gas and Upstream assets and completed a technology pilot representative of OGMP 2.0 Level 5 reporting, including reconciliation of bottom-up emission inventory at Level 4 and site level measurement. Plans for Level 5 (site level) monitoring were developed for implementation in 2023.</p> <p>Through its membership of Oil and Gas Climate Initiative, Shell co-led the OGCI/IOGP/IECA methane detection and quantification Recommended Practices from the OGCI side and contributed to the development of the Recommended Practices within the IOGP technical working group.</p>	<p>Shell will continue to implement OGMP 2.0, which requires a step change in source and site level quantification of emissions to further enhance the accuracy of reported emissions. As part of this implementation, Shell continues to conduct pilot studies on emerging technologies (including source and site level measurement solutions) that, if proven, would verify and improve the accuracy of reported emissions.</p> <p>As part of ongoing implementation of OGMP2.0, we plan to commence OGMP2.0 L5 reporting across a range of Integrated Gas and Upstream assets.</p> <p>Through its membership of Oil and Gas Climate Initiative, Shell will continue to participate to the Climate and Clean Air Coalition (CCAC) global Methane Science Studies where CCAC, Environmental Defense Fund, OGCI and European Commission are working together on a series of peer reviewed scientific studies to measure methane emissions in the oil and gas sector.</p> <p>Through its membership of Oil and Gas Climate Initiative, Shell will continue to participate in the calibration of the VIIRS satellite for global flaring data monitoring.</p> <p>Shell supported the International Methane Emissions Observatory (IMEO) in its development and rollout of the Methane Alert and Response System (MARS) by providing input on satellite programmes response planning. MARS is an initiative aimed at scaling up</p>





global efforts to detect and act on major emission sources in a transparent manner and accelerate implementation of the Global Methane Pledge (GMP). In 2023, Shell will continue its support of this important initiative.





## 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>In January 2022, Shell <a href="#">responded to US EPA's</a> consultation on methane emissions regulations. In its letter, Shell provided comments in support of regulations for existing sources, as well as new, reconstructed and modified sources. We also supported the Inflation Reduction Act of 2022, including a workable methane fee.</p> <p>In 2022, Shell helped develop the IEA-led "MGP Oil &amp; Gas sector toolkit for the Global Methane Pledge" under the MGP and encouraged others to participate in its development as well. The toolkit connects policymakers and regulators with resources and institutions to support methane policy and regulations development in countries that joined the GMP.</p> <p>Shell supported an ambitious and consistent EU policy framework covering the full range of methane emissions priorities as identified in the EU methane strategy.</p> <p>Shell continued to work with industry associations in Australia on member actions to reduce methane emissions as well as supporting methane emissions reduction policies. We welcomed the Australian government joining the GMP.</p>	<p>Shell will participate in the MGP 2023 outreach to governments to inform methane policies and regulations.</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>Shell has been co-chairing the OGMP Reporting Taskforce alongside industry partners to provide technical feedback to OGMP, and through the industry 'Mirror Groups', ensuring all companies are engaged in their development. Shell also co-chaired the Cross-industry Collaboration Forum, in connection with the industry Mirror Groups, to enhance industry shared learnings on OGMP technical programme implementation.</p>	<p>Shell will continue the implementation of programmes to increase data accuracy, with OGMP2.0 conformance playing a central role.</p> <p>Within the OGMP initiative, Shell will continue to work on the development of technical guidance and on encouraging improved methane reporting and reductions from our joint ventures.</p>



## Methane Emissions

<p><b>Do you report absolute methane emissions within your sustainability report?</b> <i>If so provide link.</i></p>	<p>Yes. Methane emissions - Shell Sustainability Report 2022</p>
<p><b>Do you report a methane intensity within your sustainability report?</b> <i>If so provide link.</i></p>	<p>Yes. Methane emissions - Shell Sustainability Report 2022</p>
<p><b>What are your organisation's total absolute methane emissions?</b> <b>Provide a figure in tonnes.</b> <b>Provide latest data publicly available.</b></p>	<p>In 2022, Shell reduced total methane emissions from our operations by 27% to 40,000 tonnes, compared with 55,000 tonnes in 2021. The decrease was in part due to a shutdown of the Trans-Niger Pipeline, the handover of operations at OML 11 and reduced flaring at SNEPCo (all in Nigeria), as well as the divestment of our Permian assets in the USA. Over the last few years, we have implemented more accurate methods of calculating fugitive emissions. Methane emissions were less than 2% of Shell's greenhouse gas emissions on a CO<sub>2</sub>-equivalent basis in 2022. Around 65% of our reported methane emissions in 2022 came from flaring and venting in our upstream and midstream operations.</p>
<p><b>Do you have a methane emission target?</b> <b>If yes, please state what it is, including the boundaries and methodology.</b> <b>If no, are you developing such a target?</b> <b>Please state your intended timeline.</b></p>	<p>Aligned with our Powering Progress strategy, Shell has a target to maintain methane emissions intensity below 0.2% by 2025. This target covers all oil and gas assets in Upstream and Integrated Gas for which Shell is the operator.</p> <p>Our target to keep methane emissions intensity below 0.2% was met in 2022 with Shell's overall methane emissions intensity at 0.05% for facilities with marketing gas and 0.01% for facilities without marketing gas.</p>



## Appendix A: Cautionary Note

The companies in which Shell plc directly and indirectly owns investments are separate legal entities. In this report “Shell”, “Shell Group” and “Group” are sometimes used for convenience where references are made to Shell plc and its subsidiaries in general. Likewise, the words “we”, “us” and “our” are also used to refer to Shell plc and its subsidiaries in general or to those who work for them. These terms are also used where no useful purpose is served by identifying the particular entity or entities. “Subsidiaries”, “Shell subsidiaries” and “Shell companies” as used in this report refer to entities over which Shell plc either directly or indirectly has control. Entities and unincorporated arrangements over which Shell has joint control are generally referred to as “joint ventures” and “joint operations”, respectively. “Joint ventures” and “joint operations” are collectively referred to as “joint arrangements”. Entities over which Shell has significant influence but neither control nor joint control are referred to as “associates”. The term “Shell interest” is used for convenience to indicate the direct and/or indirect ownership interest held by Shell in an entity or unincorporated joint arrangement, after exclusion of all third-party interest.

## Forward-Looking Statements

This report contains forward-looking statements (within the meaning of the U.S. Private Securities Litigation Reform Act of 1995) concerning the financial condition, results of operations and businesses of Shell. All statements other than statements of historical fact are, or may be deemed to be, forward-looking statements. Forward-looking statements are statements of future expectations that are based on management’s current expectations and assumptions and involve known and unknown risks and uncertainties that could cause actual results, performance or events to differ materially from those expressed or implied in these statements. Forward-looking statements include, among other things, statements concerning the potential exposure of Shell to market risks and statements expressing management’s expectations, beliefs, estimates, forecasts, projections and assumptions. These forward-looking statements are identified by their use of terms and phrases such as “aim”, “ambition”, “anticipate”, “believe”, “could”, “estimate”, “expect”, “goals”, “intend”, “may”, “milestones”, “objectives”, “outlook”, “plan”, “probably”, “project”, “risks”, “schedule”, “seek”, “should”, “target”, “will” and similar terms and phrases. There are a number of factors that could affect the future operations of Shell and could cause those results to differ materially from those expressed in the forward-looking statements included in this report, including (without limitation): (a) price fluctuations in crude oil and natural gas; (b) changes in demand for Shell’s products; (c) currency fluctuations; (d) drilling and production results; (e) reserves estimates; (f) loss of market share and industry competition; (g) environmental and physical risks; (h) risks associated with the identification of suitable potential acquisition properties and targets, and successful negotiation and completion of such transactions; (i) the risk of doing business in developing countries and countries subject to international sanctions; (j) legislative, judicial, fiscal and regulatory developments including regulatory measures addressing climate change; (k) economic and financial market conditions in various countries and regions; (l) political risks, including the risks of expropriation and renegotiation of the terms of contracts with governmental entities, delays or advancements in the approval of projects and delays in the reimbursement for shared costs; (m) risks associated with the impact of pandemics, such as the COVID-19 (coronavirus) outbreak; and (n) changes in trading conditions. No assurance is provided that future dividend payments will match or exceed previous dividend payments. All forward-looking statements contained in this report are expressly qualified in their entirety by the cautionary statements contained or referred to in this section. Readers should not place undue reliance on forward-looking statements. Additional risk factors that may affect future results are contained in Shell plc’s Form 20-F for the year ended December 31, 2022 (available at [www.shell.com/investor](http://www.shell.com/investor) and [www.sec.gov](http://www.sec.gov)). These risk factors also expressly qualify all forward-looking statements contained in this report and should be considered by the reader. Each forward-looking statement speaks only as of the date of this report, [insert date]. Neither Shell plc nor any of its subsidiaries undertake any obligation to publicly update or revise any forward-looking statement as a result of new information, future events or other information. In light of these risks, results could differ materially from those stated, implied or inferred from the forward-looking statements contained in this report.

**Shell's net carbon intensity**

Also, in this report we may refer to Shell's "Net Carbon Intensity", which includes Shell's carbon emissions from the production of our energy products, our suppliers' carbon emissions in supplying energy for that production and our customers' carbon emissions associated with their use of the energy products we sell. Shell only controls its own emissions. The use of the term Shell's "Net Carbon Intensity" is for convenience only and not intended to suggest these emissions are those of Shell plc or its subsidiaries.

**Shell's net-Zero Emissions Target**

Shell's operating plan, outlook and budgets are forecasted for a ten-year period and are updated every year. They reflect the current economic environment and what we can reasonably expect to see over the next ten years. Accordingly, they reflect our Scope 1, Scope 2 and Net Carbon Intensity (NCI) targets over the next ten years. However, Shell's operating plans cannot reflect our 2050 net-zero emissions target and 2035 NCI target, as these targets are currently outside our planning period. In the future, as society moves towards net-zero emissions, we expect Shell's operating plans to reflect this movement. However, if society is not net zero in 2050, as of today, there would be significant risk that Shell may not meet this target.

**Forward Looking Non-GAAP measures**

This report may contain certain forward-looking non-GAAP measures such as [cash capital expenditure] and [divestments]. We are unable to provide a reconciliation of these forward-looking Non-GAAP measures to the most comparable GAAP financial measures because certain information needed to reconcile those Non-GAAP measures to the most comparable GAAP financial measures is dependent on future events some of which are outside the control of Shell, such as oil and gas prices, interest rates and exchange rates. Moreover, estimating such GAAP measures with the required precision necessary to provide a meaningful reconciliation is extremely difficult and could not be accomplished without unreasonable effort. Non-GAAP measures in respect of future periods which cannot be reconciled to the most comparable GAAP financial measure are calculated in a manner which is consistent with the accounting policies applied in Shell plc's consolidated financial statements.

The contents of websites referred to in this report do not form part of this report.

We may have used certain terms, such as resources, in this report that the United States Securities and Exchange Commission (SEC) strictly prohibits us from including in our filings with the SEC. Investors are urged to consider closely the disclosure in our Form 20-F, File No 1-32575, available on the SEC website [www.sec.gov](http://www.sec.gov).