



METHANE
GUIDING
PRINCIPLES

Methane Guiding Principles Signatory Reporting

Baker Hughes

January 2023





COMPANY: **Baker Hughes**

YEAR OF JOINING METHANE GUIDING PRINCIPLES: **2020**

SENIOR REPRESENTATIVE: **Tom Harper, Vice President – Emissions Management & Commercial Development, Climate Technology Solutions**



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><u>With customers/partners:</u></p> <ul style="list-style-type: none"> • Baker Hughes offers a range of products and services to help our customers manage and reduce methane emissions including advanced methane monitoring and detection, flare optimization, compressor upgrades, flare gas processing solutions, and ‘zero-bleed’ valves to control fugitives and leakage. • We are actively engaged in helping our customers (from the oil & gas industry, mining, waste, and biogas sectors) meet their carbon and methane emissions reduction goals by raising awareness of the benefits of various technologies. • Several collaboration agreements were signed, and activities progressed with major operators for emissions management, including methane. For example, Egyptian LNG has awarded a feasibility study contract to the Bechtel-led Coalition for Decarbonization that includes Enppi, Petrojet, Baker Hughes, GE Digital, HSBC, and NBE. The study will assess the implementation of a zero-flaring system at the Egyptian LNG export terminal (ELNG) in Idku, east of Alexandria. <p><u>How we aim to reduce our emissions:</u></p> <ul style="list-style-type: none"> • In 2019, Baker Hughes committed to achieving net-zero Scope 1 and 2 emissions from our operations by 2050. During 2021, we reduced our Scope 1 and 2 GHG emissions by 23% compared to the prior year. Through our Carbon Out program, we are empowering each Baker Hughes employee to take an active role in our goal of achieving net-zero carbon equivalent emissions by 2050. • Baker Hughes conducted a drone-based OGI methane measurement at our turbomachinery test facility & implemented abatement actions. <p>Our Corporate Sustainability Report is available here.</p>	<p><u>With customers/partners:</u></p> <ul style="list-style-type: none"> • We will continue our engagement with current and potential customers (from the oil & gas industry, mining, waste, and biogas sectors) across the world to help them reduce emissions in a cost-efficient way. • Our vision is to accelerate deep emissions reduction through innovative emissions management solutions. • We continue to cooperate with a number of partners to offer technologies to increase energy efficiency and reduce greenhouse gas emissions. <p><u>How we aim to reduce our emissions:</u></p> <ul style="list-style-type: none"> • Baker Hughes is committed to reducing our emissions by 50% by 2030 and net zero by 2050. • Baker Hughes will continue collaborating with our suppliers to meet our emissions reduction goals. • We also continue to expand our reporting to include new categories of both upstream and downstream emissions that are the core of our business.

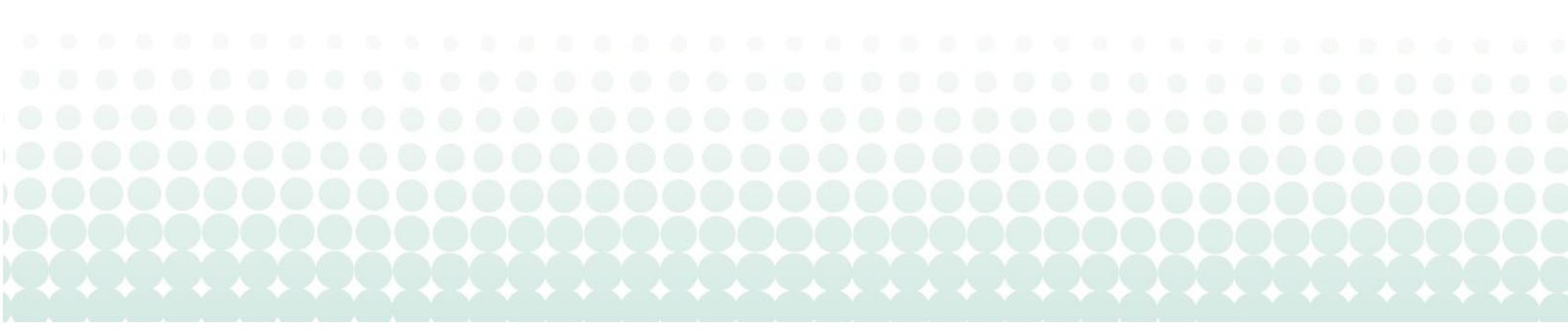


Principle Two:

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>Baker Hughes is an energy technology company, and we plan to further engage with our customers on the importance of reducing methane emissions. We continue investing in the improvement of our own technologies that quantify and abate emissions.</p> <p>We organized several conference presentations and webinars including topics such as the Global Methane Pledge, emissions management software, and measurement & abatement approaches. Additionally, several publications were issued. These include articles on ‘Rethinking emissions management’ and how we support OGMP 2.0. A communications campaign through social media followed to raise awareness among various stakeholders of the reality of methane in the industry and the need to measure and reduce emissions in the space, see link here. We also developed a video focusing on tackling methane emissions.</p> <p>In February 2022, Baker Hughes signed a Memorandum of Understanding (MoU) with the Egyptian General Petroleum Corporation (EGPC) to establish and drive a flare recovery initiative to support emissions recovery and reductions across Egypt’s upstream and downstream oil and gas operations. This MoU is followed by the implementation plan and will include some of our technology solutions such as flareIQ.</p> <p>We also joined a coalition of energy transition leaders - Bechtel, Enppi, Petrojet, GE, HSBC, and the National Bank of Egypt – that signed an MoU under the auspices of Tarek El Molla, Egyptian Minister of Petroleum and Mineral Resources. The coalition will be working on a study for zero flaring for Egyptian LNG.</p> <p>At the ADIPEC conference in UAE, Baker Hughes senior leadership participated in a Leadership Roundtable ‘Tackling the methane challenge’ hosted by OGCI and UNEP and a Strategic Panel session on ‘Standing up to the methane challenge’ with EDF, ADNOC, OGCI.</p> <p>Baker Hughes spoke at the COP27 event “Global Methane Pledge” and the EU-Algeria Business Forum where we addressed the importance of tackling methane emissions.</p> <p>Baker Hughes joined OGCI’s “Aiming For Zero Methane Emissions Initiative” as a Supporter. We are actively engaged in various industry groups focused on studies, best practices on methane management including for Methane Guiding Principles, IOGP, Veritas from GTI Energy, National Petroleum Council (US), LNGNet (EU), Differentiated Gas Coordinating Council (US).</p>	<p>Baker Hughes will continue to:</p> <ul style="list-style-type: none"> • Raise awareness throughout the supply chain and help to reduce carbon footprints; • Collaborate with our external partners (academia, research institutes) to drive research and development on methane emissions reduction technologies; • Increase industry awareness of solutions for methane measurement and abatement by organizing webinars and workshops. <p>We will host the industry engagement sessions on emissions management during our Annual Meeting in Florence gathering global thought leaders at the end of January.</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>Baker Hughes offers a range of products and services to help operators manage and reduce methane emissions, from advanced methane monitoring and detection, to flare optimization and flare gas processing solutions, to ‘zero-bleed’ valves to control fugitives and leakage.</p> <p>Our technology flare.IQ provides real-time monitoring of flare combustion efficiency, destruction and removal efficiency (DRE), and automatic control of flare operation for assisted flares and has been used to reduce methane emissions in a number of upstream and downstream sites. This combustion efficiency (CE), DRE, tracking method based on flare process conditions provides accurate emission monitoring, thus reducing methane slip from flaring. Case study with bp described here; video here. flare.IQ was launched in 2017 with an emphasis on the North American market and regulatory compliance with the EPA Refinery Sector Rule 63.670. It has been adopted by flare operators around the globe for improving flaring efficiency and methane quantification and reporting in line with OGMP 2.0 level 4. New outputs from flare.IQ are now available including CO₂ equivalent emissions, CO and VOC.</p> <p>Our solution, ProductionLink Edge, which is a suite of advanced analytics and “smart” edge technology can automate and boost production while curtailing associated methane emissions from gas wells.</p> <p>We supported the MGP work streams on flaring. Accurate and reliable data on flare flow and flare combustion efficiency are critical in methane emission management. For this reason, Baker Hughes has developed solutions that improve flare flow measurement and flare combustion efficiency monitoring. Accurate 24/7/365 real-time combustion efficiency is key for flare emission calculations, rather than using static emission factors.</p>	<p>New projects with other customers will come on stream.</p> <p>Baker Hughes will continue R&D initiatives, collaborating internally and externally, to further improve our existing offering and develop new technologies to track and reduce emissions.</p> <p>To further improve our own analytics and broaden the portfolio of technologies aimed at the measurement of methane emissions, we intend to test and study several technologies and digital solutions.</p> <p>We will continue investing in innovative technologies and R&D programs.</p>



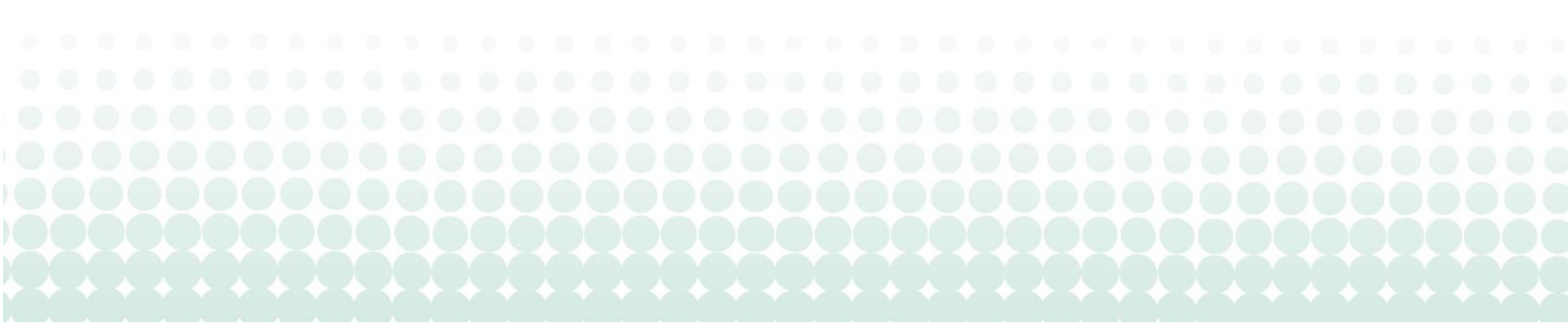
Principle Four:

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>Baker Hughes developed two policy statements: natural gas flaring and methane venting/fugitives.</p> <p>We participated in the LNGnet project led by the Florence School of Regulation.</p> <p>We submitted our response to the U.S. Environmental Protection Agency consultation on rules targeting methane emissions and developed a position paper on the EU proposed Regulation on methane emissions.</p> <p>We provided inputs and are actively collaborating through the Argentinian Oil and Gas Institute on this issue in Argentina and looking for opportunities to collaborate in India and Australia. We have also engaged in a discussion on differentiated gas in the U.S.</p> <p>Baker Hughes contributed to the MGP working group "Oil & Gas Toolkit for Global Methane Pledge". We also developed an article for the International Gas Union Magazine entitled "2023 is the year of methane policies". Additionally, we presented our solutions at the Methane Monday, hosted by the Energy Community Secretariat.</p>	<p>We will continue to engage in the activities of associations and initiatives that we are members of, to promote sound policy and regulations on methane emissions.</p> <p>Additionally, we will continue to contribute to discussions on developing GHG regulations at national levels where we have activities and engage with policymakers as appropriate.</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>Baker Hughes advises and provides technology solutions to enable operators globally to achieve OGMP 2.0 gold standard.</p> <p>We participated in the OGMP 2.0 session organized for technology providers.</p> <p>Baker Hughes contributed to the IOGP task force on methane recommended practices.</p> <p>We disclose information on our Scope 1, Scope 2 and Scope 3 emissions in our CR report here.</p>	<p>Baker Hughes will continue participating in various work streams under Methane Guiding Principles that enable regulatory compliance.</p> <p>In 2023, Baker Hughes will continue to report information within the CDP framework.</p>



Methane Emissions

<p>Do you report absolute methane emissions within your sustainability report? <i>If so provide link.</i></p>	<p>Yes Please see page 104 of Our Corporate Sustainability Report available here.</p>
<p>Do you report a methane intensity within your sustainability report? <i>If so provide link.</i></p>	<p>No Baker Hughes doesn't produce oil or natural gas.</p>
<p>What are your organisation's total absolute methane emissions? Provide a figure in tonnes. Provide latest data publicly available.</p>	<p>2021 Data: Scope 1 – 1,147; Scope 2 – 598 (MTCO₂e) Please see page 104 of Our Corporate Sustainability Report available here.</p>
<p>State your methodology.</p>	<p>GHG Protocols</p>
<p>State your reporting boundary.</p>	<p>-</p>
<p>What are your organisation's methane intensity? Provide latest data publicly available.</p>	<p>N/A Baker Hughes doesn't produce oil or gas.</p>
<p>State your methodology.</p>	<p>N/A</p>
<p>State your reporting boundary.</p>	<p>N/A</p>
<p>Do you have a methane emission target? If yes, please state what it is, including the boundaries and methodology. If no, are you developing such a target? Please state your intended timeline.</p>	<p>In 2019, Baker Hughes made a commitment to achieve net-zero Scope 1 and 2 emissions from our operations by 2050. During 2021, we reduced our Scope 1 and 2 GHG emissions by 23% compared to the prior year. Our Corporate Sustainability Report is available here.</p>

Commentary

Baker Hughes is an energy technology company providing solutions for energy and industrial customers worldwide. We design, manufacture, and service transformative technologies to help take energy forward – making it safer, cleaner, and more efficient for the people and the planet.

We offer a range of products and services to help our customers manage and reduce methane emissions, from advanced methane monitoring and detection, to flare optimization and flare gas processing solutions, to 'zero-bleed' valves to control fugitives and leakage.

Our goal is to ensure a role for natural gas in a sustainable energy future by helping customers address methane emissions associated with exploration, production, and transportation.

