



METHANE
GUIDING
PRINCIPLES

Methane Guiding Principles Signatory Reporting

Woodside Energy

January 2023





COMPANY: **Woodside Energy**

DATE: **January 2023**

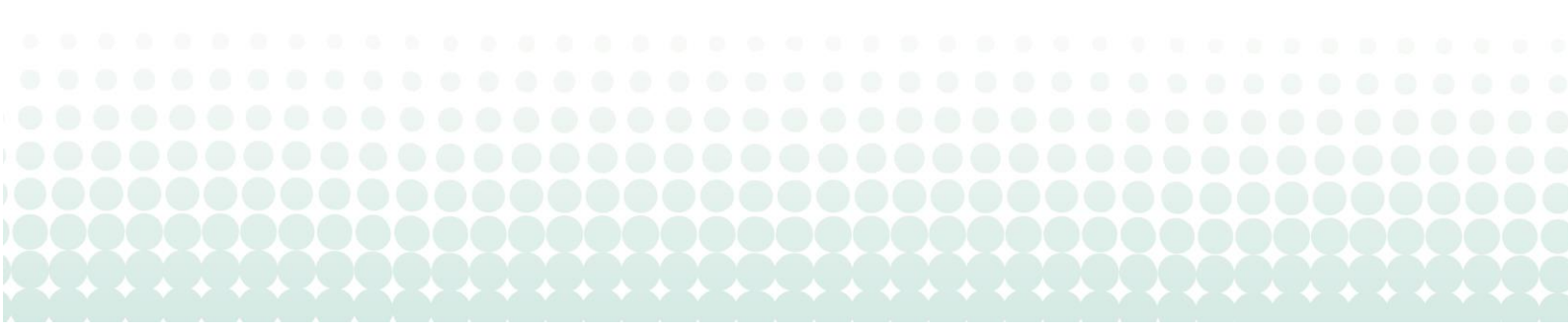
YEAR OF JOINING METHANE GUIDING PRINCIPLES: **2018**

SENIOR REPRESENTATIVE: **Tony Cudmore, EVP Strategy and Climate**

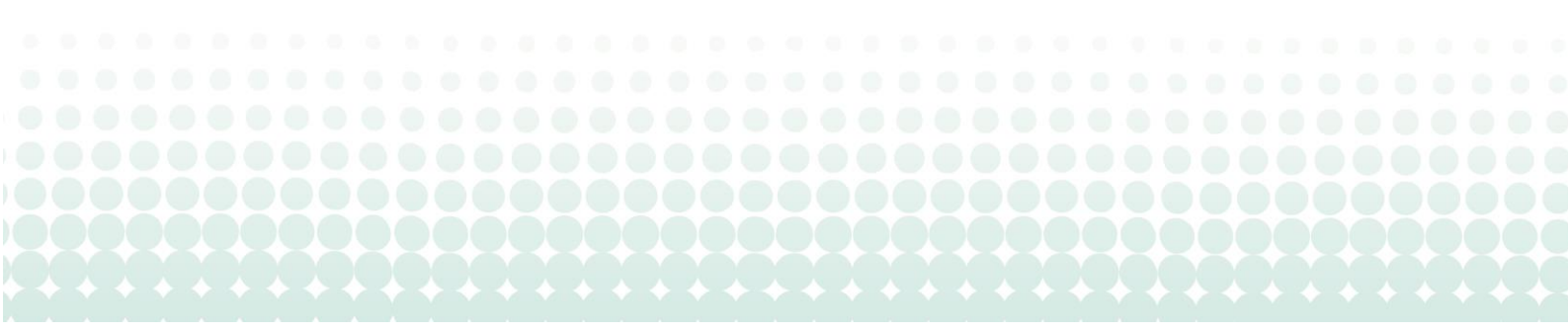


Principle One: Continually reduce methane emissions

- 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>During 2022, we continued to prioritise methane reduction activities in conjunction with our asset decarbonisation and methane reduction activity plan processes. Activities were in support of further reducing our methane emissions in line with our commitment to the Oil and Gas Climate Initiative (OGCI) Aiming for Zero Methane Emissions Initiative.</p> <p>During 2022 activities completed on existing assets include:</p> <p>Venting reduction</p> <ul style="list-style-type: none"> • Commissioning of an LNG (Liquefied Natural Gas) train wet seal gas recovery system. • Shutting off methane-intensive equipment when idle, reducing methane emissions. • Continued refinement of Acid Gas Removal Unit (AGRU) operation. • Progressing studies on retrofitting wet seals to dry gas seals. <p>Flare combustion slip reduction</p> <ul style="list-style-type: none"> • Addressing the root cause of high cadence, material flaring events. • Improving the operation of air-assisted flares. • Refining commissioning and design-related operating procedures to reduce flaring as well as specifying strategic spares for key flaring related equipment for new projects. <p>Fuel combustion slip reduction</p> <ul style="list-style-type: none"> • Implementation of advanced process control modifications and dashboard visualisations to optimise energy efficiency. • Progression of a fuel combustion study to understand combustion performance and inform future methane mitigation projects. <p>Fugitive emissions reduction</p> <ul style="list-style-type: none"> • Fugitive surveys using optical gas imaging and drones to identify leaks and support expedited repair. • Trialling of new technologies. 	<p>We will continue to review and prioritise methane reduction activities across our operated facilities. In 2023, activities we will focus on include:</p> <ul style="list-style-type: none"> • Progressing design-out methane opportunities for priority emissions sources (both on operating assets and future projects). • Completion of inventories for all existing operated assets and accompanying methane reduction activity plans. • Transitioning methane measurement activities into base business.





During 2022 activities completed on new projects include:

- A plan to install methane selective cameras for continuous fugitive monitoring to enable automated leak detection and repair.
- Refining the AGRU design in Carbon Capture and Storage projects to enable methane reduction through better operational control.



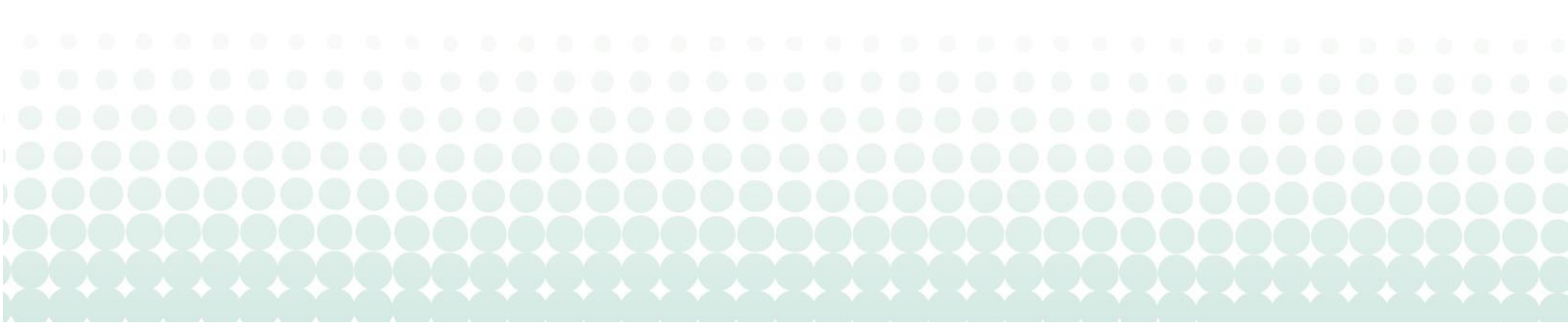
Principle Two:

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 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.

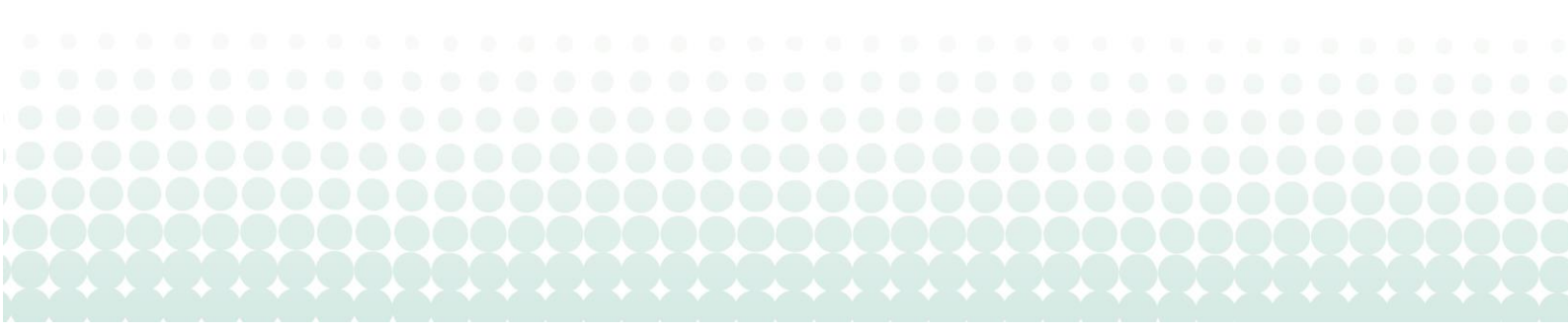
2022 completed activity	2023 intended activity
<p>During 2022 we continued our technical methane partnership across our natural gas value chain. This included discussions with 10 organisations including local operators, joint venture participants and gas distributors. The objective of the partnership is to support tangible action for methane emissions reduction within Western Australian operations.</p> <p>In addition, we have collaborated with non-operated joint venture participants to support identification of methane reduction opportunities across non-operated assets.</p>	<p>In 2023, we will continue collaborative engagements with local operators, with the aim to support methane emissions reduction within Western Australia. Additionally, through the MGP 2023 Midstream initiative workplan we aim to focus on methane emissions reduction across supply chains, including within Australia and globally.</p> <p>We will continue to work with non-operated JV partners to identify methane reduction opportunities.</p>



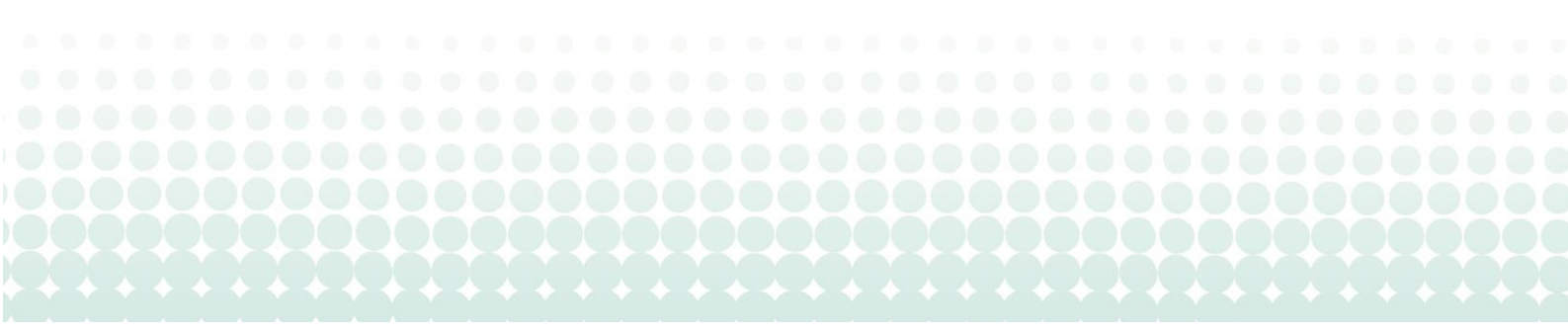
Principle Three:

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 have been adopted into your accounting process if at all.



2022 completed activity	2023 intended activity
<p>In 2022, we extended our capability of methane measurement and detection by conducting drone surveys at 8 of our assets including FPSOs (Floating Production, Storage and Off), offshore platforms and gas processing facilities. The intent of these surveys was to verify material methane sources and identify mitigation options. We received the 2022 Energy Industry Game Changer Award for making an outstanding contribution to innovative thinking, energy industry leadership and technology innovation, which significantly advanced the industry's knowledge and capability.</p> <p>A drone survey was also conducted at one of our LNG facilities. The purpose of the survey was to verify methane reduction activities (which were undertaken using a prior methane site survey) and to inform future mitigations. This was complemented by the first Australian trial of Video Imaging Spectral Radiometer (VISR) flare efficiency monitoring cameras. During the VISR trial, three flares were monitored to validate the technology for future deployment. The results were compared with direct measurements to inform real time combustion efficiency optimisation and inform future flare design upgrades.</p> <p>We have continued to evaluate technologies to minimise the spatial and temporal gaps in our methane measurements. This has led to the initiation of a partnership with the University of Western Australia and the Future Energy Exports Co-operative Research Centre to evaluate development of a novel sensor for the continuous detection and quantification of methane emissions.</p>	<p>In 2023, we will continue to report on operated methane emissions in accordance with Australian National Greenhouse Energy Reporting regulations.</p> <p>We will seek to further measure and understand methane sources to inform mitigation actions as we embark on our journey to near zero methane.</p> <p>We will continue to evaluate top-down measurements (such as drones) for use in reoccurring methane measurement campaigns. We will also use these top down measurements to inform and refine site based bottom up (such as operator hand held measurements) methane emissions datasets.</p>

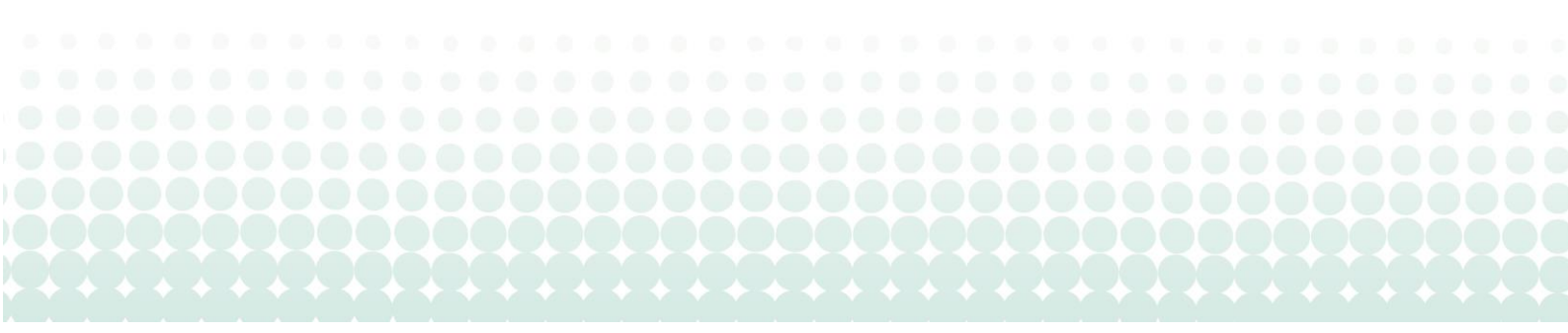


Principle Four:
Advocate sound policy and regulations on methane emissions

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>Through APPEA (Australian Petroleum Production and Exploration Association) we have supported revisions to the National Greenhouse and Energy Reporting (NGER) legislation for reporting methane emissions and continue to work with the regulator on these amendments.</p> <p>As a member of APPEA’s Methane Taskforce, Woodside has supported sound regulation and policy in relation to methane emissions and has contributed to APPEA’s recent disclosure <i>Australia’s Cleaner Energy Future: Industry’s Actions on Reducing Methane Emissions</i> (here) as well as supporting Australia becoming a signatory to the Global Methane Pledge.</p>	<p>We will continue to be engaged in updates to the NGER legislation on fugitive emissions and work with the regulator through our existing relationships and continued affiliation with APPEA and the Methane Taskforce.</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>Woodside discloses its reported methane emissions annually. The values reported are based on the regulations of the area where that facility operates, or Australian legislation where no regulations exist.</p> <p>We have shared, where appropriate, our findings to improve transparency and increase the ability to target minimising methane emissions in our natural gas supply chain.</p>	<p>Our methane emissions performance will continue to be reported in the Climate Report and via this MGP Report.</p> <p>In 2023, we will continue to focus on reducing methane emissions in our projects and operations. Our philosophy and approach is based upon allocating the majority of our time to methane reduction actions and activities. We take strategic methane measurements to understand and target the most material methane sources in support of this.</p> <p>We will complete the development of systematic methane action plans and inventories across operated assets and continue to prioritise actions to minimise methane emissions.</p>



Methane Emissions

<p>Do you report absolute methane emissions within your sustainability report? <i>If so, provide link.</i></p>	<p>Yes: 2021 Climate Report</p>
<p>Do you report a methane intensity within your sustainability report? <i>If so, provide link.</i></p>	<p>Yes: 2021 Climate Report</p>
<p>What are your organisation's total absolute methane emissions? Provide a figure in tonnes. Provide latest data publicly available.</p>	<p>11.6 kT CH₄ 2021 Climate Report</p>
<p>State your methodology.</p>	<p>National Greenhouse Energy Reporting</p>
<p>State your reporting boundary.</p>	<p>Includes Production and Processing within operational control</p>
<p>What are your organisation's methane intensity? Provide latest data publicly available.</p>	<p>0.064 % (Sm³ methane / Sm³ marketed gas)</p>
<p>State your methodology.</p>	<p>National Greenhouse Energy Reporting</p>
<p>State your reporting boundary.</p>	<p>Includes Production and Processing within operational control</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>Woodside methane target is aligned with the philosophy of the Oil and Gas Climate Initiative's 'aiming for zero' methane emissions initiative.</p>



Commentary

Our methane data has undergone reasonable assurance by GHD and is reported in compliance the National Greenhouse and Energy Reporting Act.

