Woodside Energy

THRIVING THROUGH THE ENERGY TRANSITION

Climate Transition Action Plan
and 2023 Progress Report



This document has been superseded by Woodside's Climate Transition Plan, published November 2026



Climate Transition Action Plan and 2023 Progress Report

ACKNOWLEDGING COUNTRY

Woodside recognises Aboriginal and Torres Strait Islander peoples as Australia's First Peoples. We acknowledge their connection to land, waters and the environment and pay our respects to ancestors and Elders, past and present. We extend this recognition and respect to First Nations peoples and communities around the world.

ABOUT THIS REPORT

This Climate Transition Action Plan and 2023 Progress Report summarises Woodside's climate-related plans, activities, progress and climate-related data for the period 1 January 2023 to 31 December 2023. It aims to provide a balance of disclosures that meet the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD), while avoiding overwhelming readers with information. Woodside considers that this report contains disclosures consistent with TCFD's four recommendations and 11 recommended disclosures, noting its Guidance for all Sectors and Guidance for Non-Financial Groups.[1,2] Woodside notes that following the completion of its 2023 status report, the TCFD has fulfilled its remit and disbanded. The Financial Security Board of the Bank of International Settlements has asked the International Financial Reporting Standards (IFRS) Foundation to take over the monitoring of the progress of companies' climate-related disclosures.

This report has also been prepared with reference to selected relevant metrics from the Sustainable Accounting Standards Board (SASB) Oil and Gas Exploration and Production Standard.[3] See page 80 for an index which cross-references content in this report to these recommendations.

Given the focus of this Climate Transition Action Plan, it is necessarily oriented towards future events and contains forward looking information regarding the plans, strategies, objectives, targets, aspirations and the like of Woodside in relation to climate change. Neither our plan to help us achieve our strategic aim, nor the content of this report more generally, is a statement, guarantee or prediction that future events will or are likely to occur.

Further detail regarding the scope of this report including a disclaimer, risks, emissions data and other important information is contained on pages 81-82. All dollar figures are expressed in US currency, Woodside share, unless otherwise stated. Emissions refers to greenhouse gas emissions unless otherwise stated.

Woodside Energy Group Ltd (ABN 55 004 898 962) is the ultimate holding company of the Woodside group of companies. In this report, unless otherwise stated, references to "Woodside", "our", "us" or "we" refer to Woodside Energy Group Ltd and its controlled entities.

ANNUAL REPORT 2023

Our Annual Report 2023 provides a summary of Woodside's operations and activities for the 12 month period ended 31 December 2023 and Woodside's financial position as at 31 December 2023. It also provides a summary of Woodside's sustainability approach, health and safety performance and other information for the 12 month period ended 31 December 2023. The Annual Report 2023 and this Climate Transition Action Plan and 2023 Progress Report together provide a complementary review of Woodside's business.

The reports are available on our website at woodside.com.

REPORT FEEDBACK

We welcome feedback on this Climate Transition Action Plan and 2023 Progress Report via companyinfo@woodside.com

EXTERNAL ASSURANCE

Limited assurance has been undertaken in respect of selected greenhouse gas emissions data by GHD Pty Ltd. Please refer to page 83 for more information on the scope of assurance.

ON THE COVER

The cover features Tokyo Tower Cityscape, Japan.
Image credit: Draycat Photo.
Japan is a key customer market for Woodside.

1 Financial Stability Board, 2017. "Recommendations of the Task Force on Climate-related Financial Disclosures. Final Report." Figure 4, p. 14. Some elements of the TCFD's four recommendations and 11 recommended disclosure have been presented in different order to enhance readability. A cross reference between the TCFD and this report is provided on p. 80.
2 Financial Stability Board, 2021. "Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures."
3 SASB, 2018. "Oil & Gas – Exploration and Production. Sustainability Accounting Standard. Version 2018-10." Table 1, p. 6.

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Listening and responding



Meg O'Neill

Woodside's response to climate change is integrated throughout our company strategy to thrive through the energy transition.

During 2023, I listened carefully to our investors, who told me they want more detailed information about our climate action plans. So this Climate Transition Action Plan is an evolution of our previous disclosures. Updates also reflect the progress and refinement of our plans to reduce our net equity Scope 1 and 2 emissions and invest in products and services for the energy transition.

DEMAND FOR OUR PRODUCTS

A key request from investors has been to explain more about future demand for our products through the transition, and why we believe that Woodside's projects will be competitive. This is key to successfully and profitably converting global demand for energy into realised sales of our products. As a result, we have included additional information in this report including:

- Analysis of how global energy markets might evolve, including in scenarios that could limit warming to 1.5°C,
- The potential role of natural gas in the energy transition,
- How we assess our investments for their resilience to key aspects of the energy transition,
- How we collaborate with customers to strengthen our trading relationships and understand policies in our key markets.

The sale of 10% of the Scarborough Joint Venture to LNG Japan and of 15.1% to JERA, is an example of mutual confidence in demand.[1] These strategic relationships also include potential LNG offtake and collaboration on opportunities in new energy.

SCOPE 1 AND 2 EMISSIONS

We have also provided important updates on our progress on Scope 1 and 2 emissions reductions, and our plans for the future.

- In 2023 we achieved a reduction in our net equity Scope 1 and 2 emissions of 12.5% below the starting base. This compares to 11% in 2022.[2]
- We used 13% fewer carbon credits as offsets than last year due to the underlying emissions performance at our facilities.
- We completed decarbonisation planning across our merged portfolio of operated assets, identifying multiple technical options to reduce gross Scope 1 and 2 emissions from our current portfolio. The technologies in these plans are also available to design out emissions from our growth opportunities.
- We have continued to develop our portfolio of carbon credits. We have included additional information about its size and composition, and the due diligence process we use to assess its integrity.

All footnotes related to this page are displayed on the next page.

SCOPE 3 EMISSIONS

Our Scope 3 approach includes the introduction of new products and services into our portfolio, like hydrogen and carbon capture utilisation and storage (CCUS). These products and services can help our customers avoid or reduce their Scope 1 or 2 emissions and therefore reduce the life cycle (Scopes 1, 2 and 3) emissions intensity of our portfolio.

In 2023, we continued to review our approach to Scope 3 targets in response to investor feedback and have decided to supplement our existing investment target with a new complementary emissions abatement target. This target is to take final investment decisions on new energy products and lower carbon services by 2030, with total abatement capacity of 5 Mtpa CO_2-e.[3]

- The investment target tracks our work to develop these projects and bring them to market. The emissions abatement target will track their impact on customer emissions.
- Spending on carbon capture and storage (CCS) and hydrogen opportunities was more than $235 million in 2023, up over 135% compared to 2022, building towards our target to invest $5 billion in new energy products and lower carbon services by 2030.[3,4] We have included additional information in this report about the progress of our CCS and hydrogen projects, the risks to achieving our targets – such as securing profitable customer offtake – and what we are doing to address these risks.

GOVERNANCE

The Board of Directors, led by our Chair Richard Goyder, oversees our climate work so that our governance of climate change reflects its strategic importance to our company.

- As part of our continuous review of Board skills and composition, changes were made to enhance our Board and Committees in 2023, with the intention that they are best placed to support our global operations, as well as our strategic growth opportunities through the energy transition.
- The Board has also decided to amend our executive remuneration framework, so that targets for gross Scope 1 and 2 emissions performance and new energy projects progress will impact the outcomes of performance based remuneration for the Executive Leadership Team.
- As well as disclosing our policy advocacy activities, we have reviewed our industry association memberships, including an assessment of whether industry association activities support the goals of the Paris Agreement. We have published the results of the review on our website.

This Climate Transition Action Plan will be put to an advisory shareholder vote at our Annual General Meeting (AGM) in April 2024. I believe it deserves the firm support of our shareholders – it is a thorough review of our plans, our progress and our challenges. But it is not intended to be the last word. Our strategy and our performance has and will continue to evolve in the years ahead. Feedback from our shareholders will continue to be actively sought. Progress reports will be published in future years, with a further vote on an updated plan intended in three years' time, or sooner if exceptional circumstances require.



Meg O'Neill

Chief Executive Officer and Managing Director
February 2024

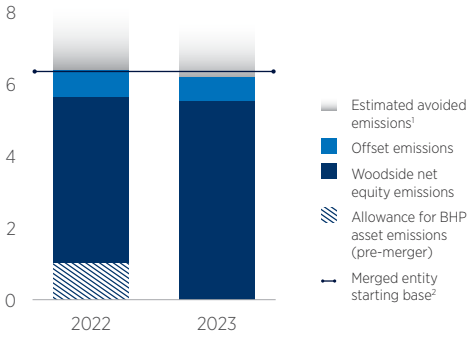
1 See announcements titled "Woodside to sell 10% Scarborough interest to LNG Japan" (8 August 2023) and "Woodside to sell 15.1% Scarborough interest to JERA" (23 February 2024) at woodside.com. Greenhouse gas emissions data including charts and estimates of future abatement plans in this Climate Transition Action Plan have not been updated to reflect changes in Woodside's equity share of the Scarborough Joint Venture as a consequence of the sale of 15.1% interest to JERA.
2 Targets and aspiration are for net equity Scope 1 and 2 greenhouse gas emissions relative to a starting base of 6.32 Mt CO_2-e which is representative of the gross annual average equity Scope 1 and 2 greenhouse gas emissions over 2016-2020 and which may be adjusted (up or down) for potential equity changes in producing or sanctioned assets with a final investment decision prior to 2021. Net equity emissions include the utilisation of carbon credits as offsets.
3 Scope 3 targets are subject to commercial arrangements, commercial feasibility, regulatory and Joint Venture approvals, and third party activities (which may or may not proceed). Individual investment decisions are subject to Woodside's investment targets. Not guidance. Potentially includes both organic and inorganic investment.
4 Includes pre-RFSU spend on new energy products and lower carbon services that can help our customers decarbonise by using these products and services. It is not used to fund reductions of Woodside's net equity Scope 1 and 2 emissions which are managed separately through asset decarbonisation plans.

Highlights

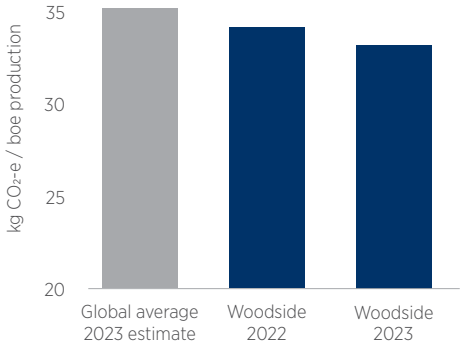
REDUCING NET EQUITY SCOPE 1 AND 2 GREENHOUSE GAS EMISSIONS

2023 PERFORMANCE

Scope 1 and 2 equity greenhouse gas emissions (Mt CO_2-e)

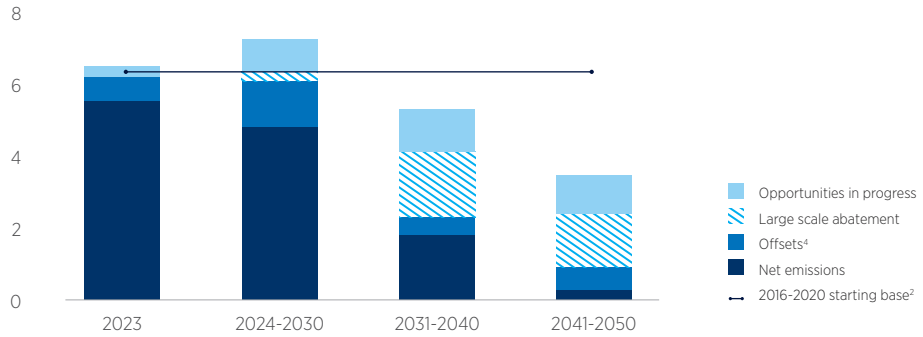


Scope 1 and 2 gross equity greenhouse gas emissions intensity[3]



2050 NET ZERO ASPIRATION

Potential pathway to net zero (equity Scope 1 and 2 emissions annual average Mtpa CO_2-e) at portfolio of producing assets and sanctioned projects[4]



Net emissions 12.5% below starting base, advancing from 11% in 2022[2]

- ✓ 13% fewer carbon credits utilised as offsets than last year due to the underlying emissions performance at our facilities.
- ✓ On course for net equity Scope 1 and 2 emissions reduction targets:
  - › 15% by 2025
  - › 30% by 2030.
- ✓ Gross emissions intensity lower (better) than benchmark of a comparable energy portfolio – and improved further in 2023.[3]

Asset decarbonisation planning completed across merged portfolio of operated assets[4]

- ✓ Multiple options identified to avoid or reduce emissions are in progress:
  - › ~16 Mt CO_2-e in savings (cumulative to 2050) has been incorporated in design of Scarborough, Pluto Train 2 and Trion projects
  - › ~12 Mt CO_2-e (cumulative to 2050) in further reduction initiatives at existing assets, targeted for implementation by 2030
  - › ~35 Mt CO_2-e (cumulative to 2050) further opportunities (large scale but expensive to retrofit) in plan to mature technology and reduce cost as future selection options.
- ✓ Portfolio of carbon credits: 20 Mt CO_2-e under management, acquired at an average cost <$20/t and subject to integrity due diligence.[5]

1 Quantification of avoided emissions is inherently uncertain. However, it is possible to provide an estimate by comparison to benchmarks of a comparable portfolio of LNG, conventional shelf and deepwater assets producing 187.2 MMboe (Woodside equity production 2023) with a similar product mix to Woodside. There are a number of potential benchmarks providing estimates of the 2023 global average emissions intensity of oil and gas operations. Based on Wood Mackenzie's Emissions Benchmarking Tool, an estimate of avoided emissions is around 391 kt CO_2-e, whereas based on the industry average emissions reported in Table 3.1 of IEA's "The Oil and Gas Industry in Net Zero Transitions" (November 2023), an estimate of avoided emissions is around 1,705 kt CO_2-e. The Estimated Avoided Emissions shown in this Graph represents the range between the two estimates. Woodside does not independently verify the data behind these estimates.

2 Targets and aspiration are for net equity Scope 1 and 2 greenhouse gas emissions relative to a starting base of 6.32 Mt CO_2-e which is representative of the gross annual average equity Scope 1 and 2 greenhouse gas emissions over 2016-2020 and which may be adjusted (up or down) for potential equity changes in producing or sanctioned assets with a final investment decision prior to 2021. Net equity emissions include the utilisation of carbon credits as offsets.

3 Woodside analysis, based on Woodside Scope 1 and 2 emissions data for 2022 and 2023 relative to a comparable portfolio of LNG, conventional shelf and deepwater assets, calculated from the 2023 emissions intensity of these primary resource themes reported in Wood Mackenzie's Emissions Benchmarking Tool.

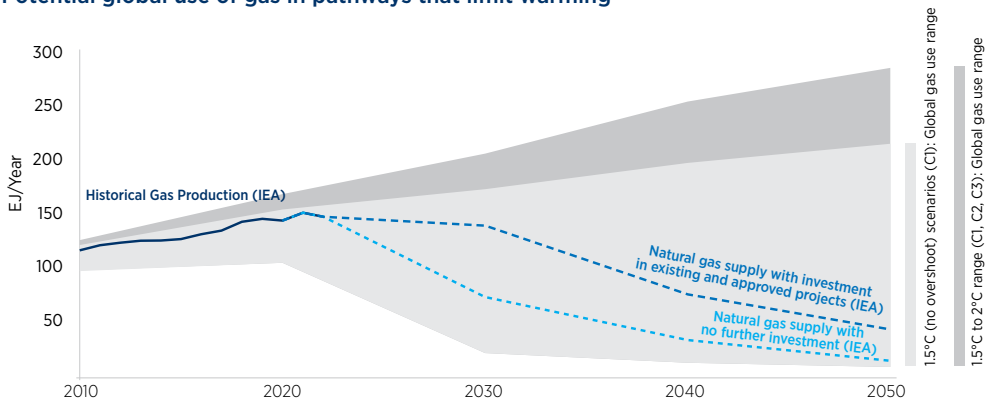
4 15.1% Scarborough interest to JERA" (23 February 2024) at woodside.com. Greenhouse gas emissions data including charts and estimates of future abatement plans in this Climate Transition Action Plan have not been updated to reflect changes in Woodside's equity share of the Scarborough Joint Venture as a consequence of the sale of 15.1% interest to JERA.

5 Woodside's approach to utilising carbon credits as offsets in the context of our pathway to net zero is discussed in Section 3.4.

INVESTING IN PRODUCTS AND SERVICES FOR THE ENERGY TRANSITION

RESILIENCE OF NATURAL GAS

Potential global use of gas in pathways that limit warming[1]



Natural gas expected to have a sustained role in energy transition

- ✓ Anticipated uses include:
  - › Supporting renewables in power grids,
  - › In hard to abate sectors such as for high process temperature heat,
  - › As a chemical feedstock.
- ✓ Chart shows range of global gas use in 1.5°C and also 1.5°C-2°C pathways from the Intergovernmental Panel on Climate Change Sixth Assessment Report, compared to gas supply estimates from the International Energy Agency in the absence of investment in new fields.
- ✓ Converting global demand into realised sales for Woodside requires:
  - › careful analysis of climate- and energy-related scenarios,
  - › disciplined capital allocation,
  - › assessment of project resilience to the energy transition, and
  - › strong customer relationships.

SCOPE 3 TARGETS

INVESTMENT TARGET[2]

Investment in new energy products and lower carbon services by 2030.

$5 billion[3]

EMISSIONS ABATEMENT TARGET[2]

Take FID on new energy products and lower carbon services by 2030, with total abatement capacity of

5 Mtpa CO_2-e[4]

2023 PROGRESS UPDATE

Cumulative total spend on new energy products and lower carbon services.[3]

$335 million ↑

New Scope 3 Emissions Abatement Target established to complement the existing Scope 3 Investment Target

- ✓ New energy products (e.g. hydrogen) and lower carbon services (e.g. CCS) can help our customers avoid or reduce their Scope 1 or 2 emissions – and therefore reduce the life cycle (Scope 1, 2 and 3) emissions intensity of our portfolio.
- ✓ The investment target tracks our work to develop these projects and bring them to market. The emissions abatement target will track their impact on customer emissions.

1 IPCC and IEA data sources along with other important notes included on page 45.
2 Scope 3 targets are subject to commercial arrangements, commercial feasibility, regulatory and Joint Venture approvals, and third party activities (which may or may not proceed). Individual investment decisions are subject to Woodside's investment targets. Not guidance. Potentially includes both organic and inorganic investment.
3 Includes pre-RFSU spend on new energy products and lower carbon services that can help our customers decarbonise by using these products and services. It is not used to fund reductions of Woodside's net equity Scope 1 and 2 emissions which are managed separately through asset decarbonisation plans.
4 Includes binding and non-binding opportunities in the portfolio, subject to commercial arrangements, commercial feasibility, regulatory and Joint Venture approvals, and third party activities (which may or may not proceed). Individual investment decisions are subject to Woodside's investment targets. Not guidance.

How to read this report

GOVERNANCE

This section explains how Woodside manages and oversees its response to the challenge of climate change. It includes information about:

- Board oversight
- Board skills and composition
- Executive remuneration
- Management structure.

DECARBONISATION STRATEGY

This section explains how Woodside manages emissions associated with its current portfolio. It includes information about:

- Net equity Scope 1 and 2 emissions performance
- Net equity Scope 1 and 2 emissions reduction plans
- Focus topics:
  - Asset decarbonisation in practice
  - Methane emissions management
  - Large scale abatement: vision for Pluto net zero
  - Decarbonisation technology development
- Our utilisation of carbon credits
- Our approach to Scope 3 emissions
- Our progress in developing new energy products and lower carbon services.

CAPITAL ALLOCATION

This section explains how Woodside integrates consideration of climate change into its investment decisions about new projects. It includes information about:

- Our capital alignment approach
- How global energy markets might evolve, including in scenarios that could limit warming to 1.5°C
- How we assess our investments for their resilience to key aspects of the energy transition
- Scenario analysis of Woodside's portfolio, including with a 1.5°C scenario
- How we collaborate with customers to strengthen our trading relationships.

RISK MANAGEMENT

This section explains how Woodside identifies and manages climate-related risks and opportunities. It includes information about:

- Our approach to risk management
- Our identified climate-related risks and opportunities
- Physical risks.

ENGAGEMENT

This section explains how Woodside engages with society on climate-related issues. It includes information about:

- Our advocacy and how we consider the Paris Agreement goals
- Our lobbying with governments
- Our memberships of industry associations
- Our approach to a just transition.

Future of reporting

This report contains disclosures consistent with TCFD's four recommendations and eleven recommended disclosures, noting its Guidance for all Sectors and Guidance for Non-Financial Groups. A table cross-referencing the content in this document to the TCFD recommendations is provided on page 80.

Woodside supports the harmonisation of climate and sustainability reporting standards intended by the International Sustainability Standards Board (ISSB), and encourages other standard-setting and benchmarking organisations to also align. The Australian Government has confirmed that it intends to mandate climate reporting standards from 1 July 2024. Woodside and industry associations such as the Business Council of Australia are engaging with the government and the Australian Accounting Standards Board about detailed design issues. We intend to undertake analysis of any changes required in our reporting during the course of 2024, and note the high level alignment of the proposed standards with the recommendations of the TCFD.



Gas can be used in residential and commercial cooking.

Response to investor feedback

Updated content in this Climate Transition Action Plan relative to the Woodside Climate Report 2022 includes:

	Page
Targets and Woodside's plans to achieve them	
Progress against targets	6-7, 16-17
Extension of asset decarbonisation plans across merged portfolio	15, 18
Emissions reduction between 2030 and 2050	19-21
Decarbonisation project pipeline	15, 18-21, 24-5
Scope 3 emissions abatement target	32-34
New energy and lower carbon services project pipeline	36-40
Utilisation of carbon credits as offsets	
Woodside's approach to utilising offsets	28-31
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Resilience of demand for Woodside products	
Scope 3 emissions sources	32-33, 72-73
Customer demand in the energy transition	44-47, 54-55
Approach to capital allocation	43, 48-53
Governance	
Board skills and composition	11
Management structure	12
Climate-related targets in executive remuneration	12
Policy engagement	
Woodside advocacy activities	65-69
Review of industry association activities	65, 67

2.0 GOVERNANCE



Gas is used in the generation of electricity to power our homes.

Board oversight

The Board of Woodside is responsible for the approval and oversight of our climate change strategy.

Climate change is a standing agenda item at each regular meeting of the Sustainability Committee, or the Board when the Sustainability Committee does not meet, with information presented by management, external advisers or third party specialists where appropriate.

The Board oversees our climate strategy and receives regular performance updates from management. During 2023, the Board and its Committees were informed about and considered climate-related issues on multiple occasions, including when reviewing and guiding strategy, risk management, annual budgets and business plans, and overseeing major capital expenditure, as well as when setting the Group's performance objectives and monitoring implementation and performance. The Board continuously reviews progress towards our climate-related targets and our 2050 aspiration by receiving regular updates from the Executive Leadership Team and reports from other management involved in implementing the Group's climate strategy.

The Chair undertakes an annual Governance Roadshow with key institutional investors and investor organisations, including members of Climate Action 100+, to discuss Woodside's approach to climate change and also listen to any concerns raised by investors. In 2023 the Chair held 43 such meetings. This engagement is supported by our Investor Relations function which had 70 meetings specifically on climate change.

BOARD SKILLS AND COMPOSITION

The non-executive directors contribute diverse operational and international experience, an understanding of the industry in which Woodside operates, knowledge of financial markets and an understanding of the health, safety, environmental, community and other sustainability matters that are important to Woodside. The Board supplements its climate change awareness by seeking the input of executives and external advisers and specialists to further inform its decisions.

The competencies and skills of the directors are set out in the skills matrix described in the Annual Report 2023, in section 4.1. In 2021, the Board skills matrix was updated to include energy transition and climate-related components to reflect the increasing importance of these issues to Woodside's operations. The Board uses this skills matrix to assess the skills and experience of each director and the combined capabilities of the Board, to identify potential areas of focus for director recruitment and to identify any professional development opportunities that may benefit directors.

In 2023 and early 2024, Woodside announced changes to the membership of its Board of Directors, as part of its continuous review of Board skills and composition. These changes were intended to enhance Woodside's Board and Committees so that they are best placed to support Woodside's global operations and strategic growth opportunities through the energy transition. Further information on Board skills and composition is included in the Corporate Governance Statement in section 4.1 of the Annual Report 2023.

BOARD COMMITTEES

The Board has four standing committees to assist in the discharge of its responsibilities, including on climate change risk.

The **Sustainability Committee's** responsibilities include reviewing, and making recommendations to the Board on, the Company's policy and performance in relation to sustainability-related matters, including climate change.

The **Audit & Risk Committee** assists the Board to meet its oversight responsibilities in relation to the company's financial reporting, compliance with legal and regulatory requirements, internal control structure, risk management and insurance procedures and the internal and external audit functions. Given the importance of climate change as a strategic risk to Woodside, and potential implications relating to financial reporting, it is one of the key risks considered by the Audit & Risk Committee during the review of the company's risk management framework. The Committee also considers the inclusion of climate-related risks within Woodside's internal audit program and the appropriateness of disclosures on climate-related risk within the consolidated financial statements.

The **Nominations & Governance Committee** assists the Board with reviewing Board composition, performance and succession planning. This includes identifying, evaluating and recommending candidates for the Board, taking into account the factors set out in the Board skills matrix in section 4.1 of the Annual Report 2023, including energy transition and climate change.

The **Human Resources & Compensation Committee** assists the Board with establishing human resources and compensation policies and practices. Performance based remuneration for the CEO, senior leadership team and all other permanent employees include metrics related to achieving our climate change strategy. Further details are provided in the 2023 Remuneration Report in section 4.3 of the Annual Report 2023.

CEO AND EXECUTIVE REMUNERATION

In 2023, the Board determined that climate metrics will be a distinct component of Executive Remuneration impacting Variable Annual Reward from 2024. Climate metrics will make up 15% of the total scorecard, with 70% based on gross Scope 1 and 2 emissions performance and 30% based on new energy project progress.[1,2]

Individual Key Performance Indicators (KPIs) may also be added to Executive Performance Agreements in accordance with their roles and responsibilities.

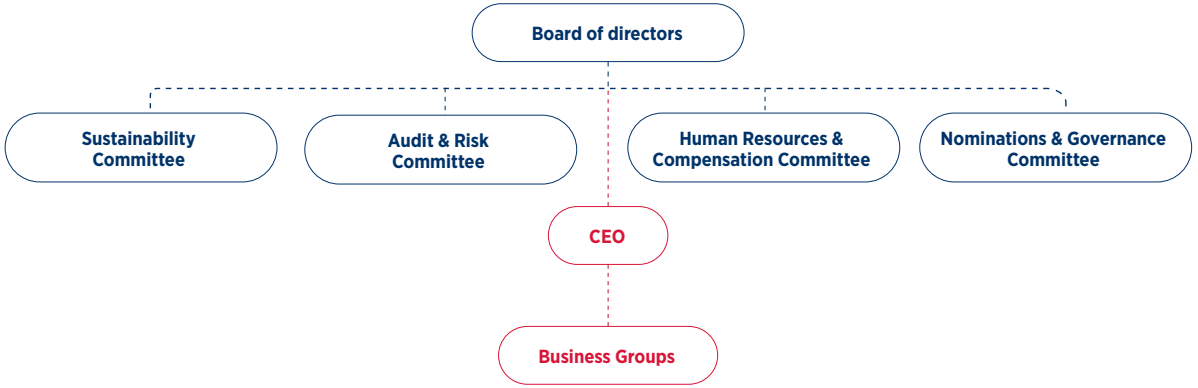
MANAGEMENT

The Chief Executive Officer and Managing Director (CEO), is responsible for the implementation of strategy, including climate change strategy, and reports directly to the Board. The CEO is supported by the Executive Leadership Team. The position of Executive Vice President Strategy and Climate reports directly to the CEO and is a member of the Executive Leadership Team.

The Executive Leadership Team is informed about and monitors progress on climate-related issues by senior leaders through channels such as presentations and papers to the Executive Leadership Team, and by distribution of board papers and other periodic updates on climate-related topics.

Responsibility for executing the strategy is embedded in the appropriate Business Group. Because of the strategic nature of climate change, many groups have accountability for delivering elements of the strategy, summarised in the table.

Board and Executive Relationship



Climate-related roles and responsibilities of Business Groups

Strategy & Climate	• Develop strategy for approval by the Board, including recommending targets. • Design company-wide processes to assist business delivery, providing subject matter expertise where required e.g. integrated emissions accounting and forecasting, company wide decarbonisation prioritisation. • Monitor and update the Board on progress against targets and other climate-related internal and external developments. • Prepare climate-related disclosures for approval by the Board. • Government engagement and policy advocacy.
Finance	• Set a capital allocation framework. • Liaise with debt and equity investors to communicate and receive feedback on climate-related matters.
Exploration, Development and Projects	• Identify 'design out' opportunities and implement selected plans in project design. • Prepare a transition case (see pages 50-51) for Executive and Board consideration in investment stage gate decisions.
Australian and International Operations	• Prepare Asset Decarbonisation Plans. • Implement technically viable opportunities to decarbonise costing <$80/t CO_2-e. • Implement selected opportunities costing >$80/t CO_2-e (subject to Executive oversight).
New Energy	• Progress CCS, Hydrogen and other new energy opportunities. • Build a portfolio of carbon credits subject to integrity due diligence.
Technical Services	• Progress technology opportunities through initial assessment in order for operations to consider them for selection.

1 Gross equity emissions are calculated prior to retirement of carbon credits as offsets, focusing the organisational priorities on avoiding and reducing emissions
2 New energy project progress (which includes new energy products and lower carbon services) is subject to commercial arrangements, commercial feasibility, regulatory and Joint Venture approvals, and third party activities (which may or may not proceed). Individual investment decisions are subject to Woodside's investment targets. Not guidance. Potentially includes both organic and inorganic investment.

3.0 DECARBONISATION STRATEGY



Gas is used in a variety of high temperature industrial processes, such as glass production.

Climate strategy

Woodside's climate strategy is integrated throughout our company strategy: our aspiration to thrive through the energy transition with a low cost, lower carbon, profitable, resilient and diversified portfolio.[1]

Our climate strategy contains two key elements:

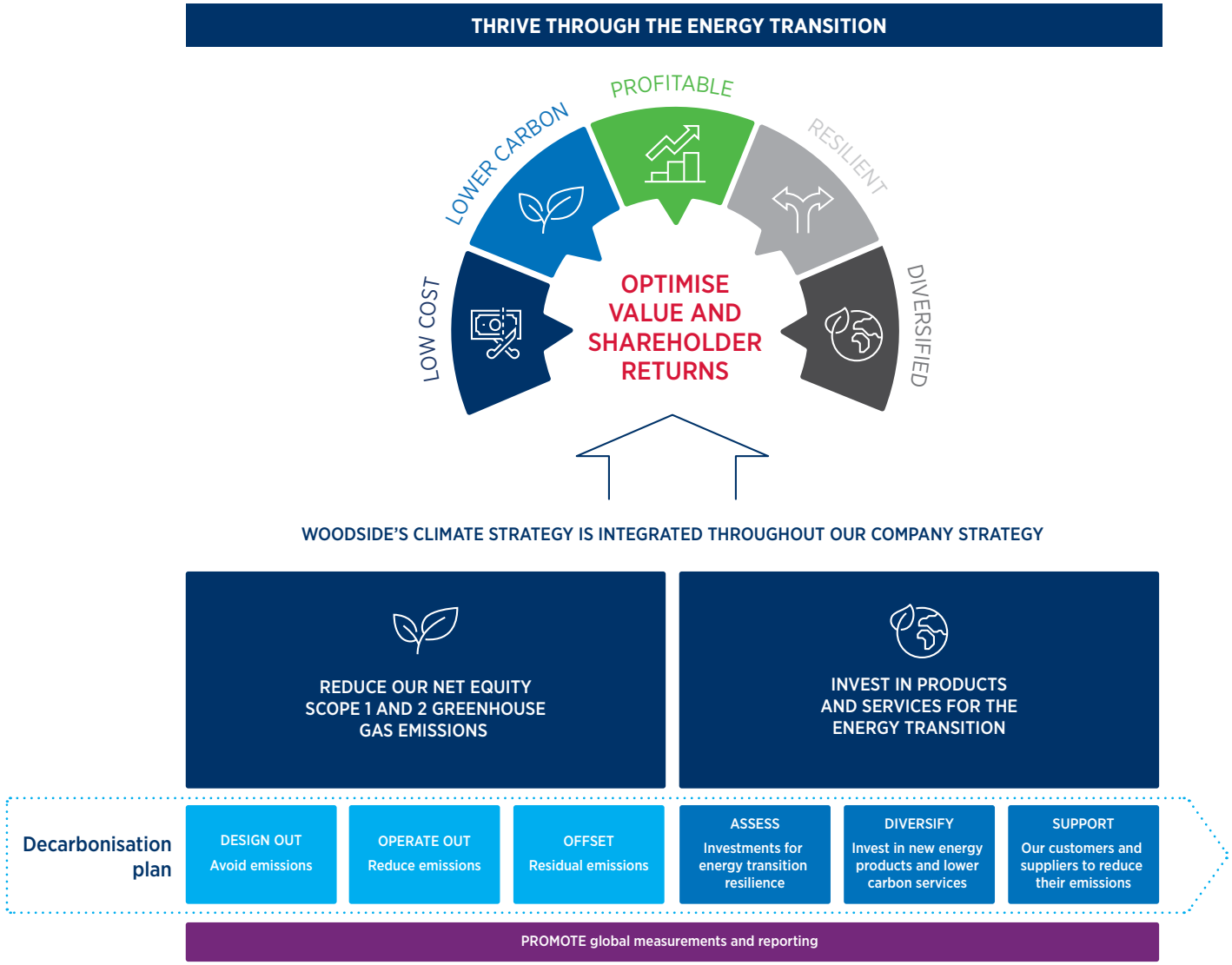
- reducing our net equity Scope 1 and 2 greenhouse gas emissions; and
- investing in products and services for the energy transition.

Reducing our net equity Scope 1 and 2 greenhouse gas emissions is supported by three levers: avoiding emissions in design, reducing emissions in operations, and offsetting the remainder with carbon credits.

Investing in products and services is also supported by three levers: assessing investments for their resilience to the energy transition; diversifying our products and services; and supporting our customers and suppliers to reduce their emissions.

These levers are supported by our work to promote global measurement and reporting – including our own publication of transparent disclosures.

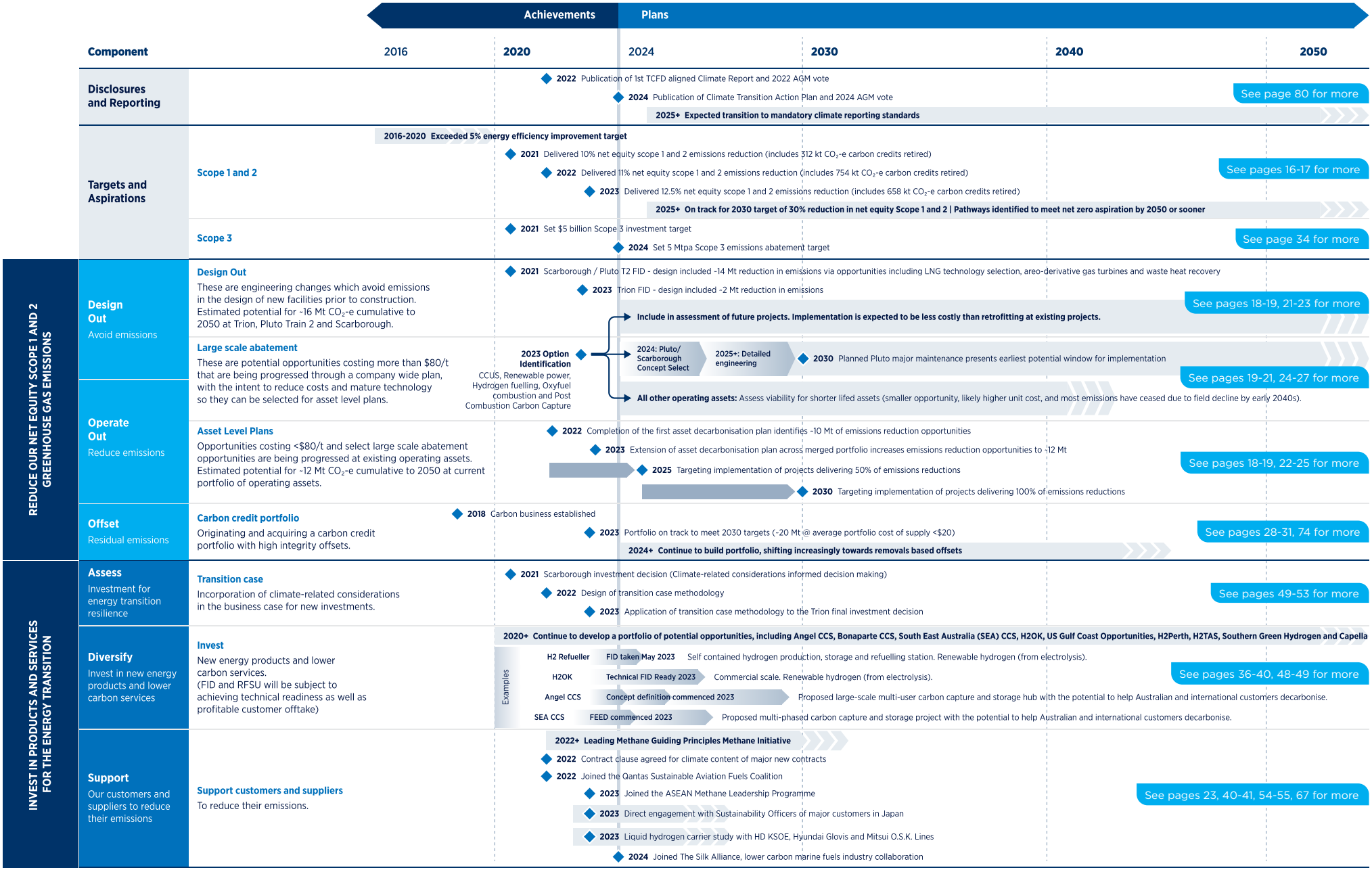
Each element of our strategy is supported by the detail in our Climate Transition Action Plan (CTAP) (this report). The detail of this plan is expected to continue to evolve over time, and will be updated in future disclosures.



1 For Woodside, a lower carbon portfolio is one from which the net equity Scope 1 and 2 greenhouse gas emissions, which includes the use of offsets, are being reduced towards targets, and into which new energy products and lower carbon services are planned to be introduced as a complement to existing and new investments in oil and gas. Our Climate Policy sets out the principles that we believe will assist us achieve this aim.

2 The graphic on page 15 represents selected key examples from our climate plans, progress and opportunities, representative at the point of publication on 27 February 2024. It is intended to summarise but not be a complete representation of Woodside's plans and opportunities and is indicative only and not guidance. Plans are dynamic and should be expected to evolve, including but not limited to the identification of additional opportunities, the progress or completion of existing opportunities, and/or delay in or removal of current opportunities which are not guaranteed to proceed. Plans and opportunities are subject to factors such as technical evaluation, commercial evaluation, customer offtake, development or changes to policy and regulatory frameworks, and approvals from regulators and joint venture partners. Further information is provided in this document.

3 See announcement titled "Woodside to sell 15.1% Scarborough interest to JERA" (23 February 2024) at woodside.com. Greenhouse gas emissions data including charts and estimates of future abatement plans in this Climate Transition Action Plan have not been updated to reflect changes in Woodside's equity share of the Scarborough Joint Venture as a consequence of the sale of 15.1% interest to JERA.



See footnotes 2 and 3 related to this chart on the previous page.

2023 net equity Scope 1 and 2 emissions performance

Woodside is targeting a reduction of net equity Scope 1 and 2 greenhouse gas emissions of 15% by 2025 and 30% by 2030, with an aspiration of net zero by 2050 or sooner.

The net equity Scope 1 and 2 emissions reduction targets are relative to a starting base of 6.32 million tonnes of CO_2-e, which is representative of the gross annual average equity Scope 1 and 2 greenhouse gas emissions over 2016-2020. This starting base may be adjusted (up or down) for potential equity changes in producing or sanctioned assets with a final investment decision prior to 2021.

The targets mean that net equity Scope 1 and 2 emissions for the 12-month period ending 31 December 2025 are targeted to be 15% lower than the starting base, and that net equity Scope 1 and 2 emissions for the 12-month period ending 31 December 2030 are targeted to be 30% lower than the starting base.

OUR PROGRESS TO DATE

Woodside has a long standing focus on energy efficiency. Our first formal climate-related target was a 5% energy efficiency target over the period 2016-20. We exceeded it, achieving 8%.

Quantification of avoided emissions is inherently uncertain. However, it is possible to provide an estimate by comparison to benchmarks of a comparable portfolio of LNG, conventional shelf and deepwater assets producing 187.2 MMboe (Woodside equity production 2023) with a similar product mix to Woodside. There are a number of potential benchmarks providing estimates of the 2023 global average emissions intensity of oil and gas operations. Two examples are Wood Mackenzie's Emissions Benchmarking Tool, and the industry average emissions reported in Table 3.1 of IEA's "The Oil and Gas Industry in Net Zero Transitions" (November 2023). Comparing Woodside's Scope 1 and 2 emissions to their average intensity data indicates avoided emissions of 391 kt CO_2-e and 1,705 kt CO_2-e respectively. Woodside does not independently verify the data behind these estimates.[1]

Contributions to this were made by the intrinsic characteristics of our oil and gas resources, the design of our facilities, the 2016-2020 energy efficiency target, and the implementation of asset decarbonisation plans from 2021 onwards.

OUR 2023 PERFORMANCE

2023 was a strong emissions performance year for our facilities. Despite higher production due to a full year of our merger with BHP's petroleum business, we advanced our net equity Scope 1 and 2 emissions reduction to 12.5% (compared to 11% in 2022), relative to an adjusted post merger base.[2]

We also utilised 13% fewer carbon credits than last year, offsetting 96 kt CO_2-e fewer emissions because of the emissions avoidance and reduction we have achieved.

A further indication of the underlying emissions performance at our facilities is that our Scope 1 and 2 gross emissions intensity (a measure of emissions, per unit of production) improved by 3% year on year, and is better than a comparable benchmark.[3]

We do not expect improvement of gross emissions like this every year: for example, from 2024 the start-up of the Sangomar facility in Senegal (including one-off commissioning emissions) is expected to increase gross emissions for a period. This is why our utilisation of carbon credits as offsets is an important stabiliser, so we are able to reduce our net emissions consistently, notwithstanding operational fluctuations and while our asset decarbonisation plans build momentum. For more information on the use of carbon credits please see section 3.4.

All footnotes related to this page are displayed on the next page.

Net equity Scope 1 and 2 emissions reduction targets

12.5%

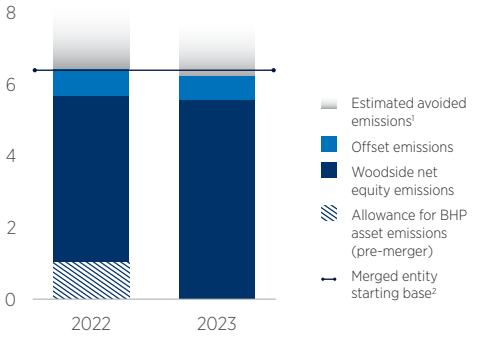
REDUCTION ACHIEVED IN 2023[2]

On track for:

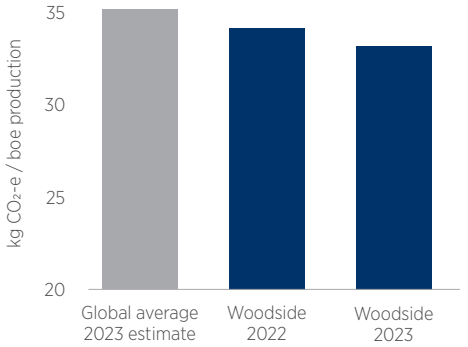
- 15% by 2025
- 30% by 2030

Aspiration of net zero by 2050 or sooner

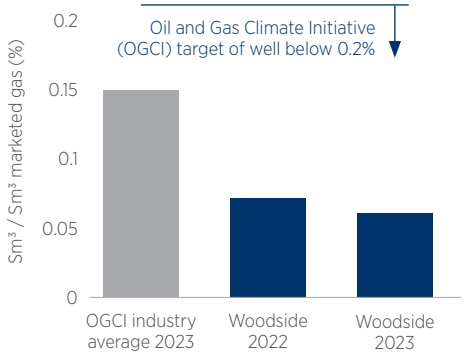
Net equity Scope 1 and 2 emissions (Mt CO_2-e)



Scope 1 and 2 gross emissions intensity[3]



Methane emissions intensity[4]



Woodside's net equity Scope 1 and 2 greenhouse gas emissions totalled 5,532 kt CO_2-e in 2023, which was 12.5% below the starting base.[2]

Gross equity Scope 1 and 2 emissions were 6,190 kt CO_2-e. To achieve the net result, 658 kt CO_2-e of carbon credits have been retired.

In 2023, 70% of Woodside's gross equity Scope 1 greenhouse gas emissions were from fuel combustion to power our assets, 22% came from venting of which the majority is associated with removal of reservoir CO_2 as part of the LNG process, and 8% from flaring.

In the chart above, an allowance for emissions from the BHP petroleum portfolio for the five months of 2022 prior to the merger has been added for full year comparability with 2023.

Our 2023 gross equity Scope 1 and 2 emissions were lower than comparable benchmarks. It is possible to provide an estimate of avoided emissions by comparison to benchmarks of a comparable portfolio and production volume to Woodside. See page 16 for information on estimates.[1]

Gross Scope 1 and 2 emissions intensity is a measure of the efficiency of our production, before the application of offsets. It is one way to demonstrate that Woodside is appropriately prioritising avoiding and reducing emissions at our facilities. Woodside has a lower (better) gross emissions intensity than the global average of a comparable portfolio of LNG, conventional shelf and deepwater assets demonstrating the impact of actions taken to avoid and reduce emissions from our operations as well as the intrinsic characteristics of our oil and gas resources.[1]

Our gross Scope 1 and 2 emissions intensity improved in 2023 due to factors including reduced flaring at Pluto due to strong reliability performance.

Woodside has a lower (better) methane emissions intensity than industry (OGCI) targets and has an action plan to further improve and strive for near-zero methane emissions.[5]

Woodside's methane emissions performance and reduction plan is described on page 23. Methane emissions contribute to Woodside's Scope 1 emissions, but receive specific focus because of their near-term importance to achieving global climate goals.

Our methane intensity improved in 2023 due to factors including reduced flaring at Pluto and lower floating production storage and offloading (FPSO) facility emissions.

1 Quantification of avoided emissions is inherently uncertain. However, it is possible to provide an estimate by comparison to benchmarks of a comparable portfolio of LNG, conventional shelf and deepwater assets producing 187.2 MMboe (Woodside equity production 2023) with a similar product mix to Woodside. There are a number of potential benchmarks providing estimates of the 2023 global average emissions intensity of oil and gas operations. Based on Wood Mackenzie's Emissions Benchmarking Tool, an estimate of avoided emissions is around 391 kt CO_2-e, whereas based on the industry average emissions reported in Table 3.1 of IEA's "The Oil and Gas Industry in Net Zero Transitions" (November 2023), an estimate of avoided emissions is around 1,705 kt CO_2-e. The Estimated Avoided Emissions shown in this Graph represents the range between the two estimates. Woodside does not independently verify the data behind these estimates.

2 Targets and aspiration are for net equity Scope 1 and 2 greenhouse gas emissions relative to a starting base of 6.32 Mt CO_2-e which is representative of the gross annual average equity Scope 1 and 2 greenhouse gas emissions over 2016-2020 and which may be adjusted (up or down) for potential equity changes in producing or sanctioned assets with a final investment decision prior to 2021. Net equity emissions include the utilisation of carbon credits as offsets.

3 Woodside analysis, based on Woodside Scope 1 and 2 emissions data for 2022 and 2023 relative to a comparable portfolio of LNG, conventional shelf and deepwater assets, calculated from the 2023 emissions intensity of these primary resource themes reported in Wood Mackenzie's Emissions Benchmarking Tool.

4 Woodside analysis, based on Woodside methane emissions data for 2022 and 2023, relative to OGCI average and targets. https://www.ogci.com/action-and-engagement/reducing-methane-emissions/#methane-target.

5 OGMP, 2023. "Implementation Plan Guidance", p. 2 https://ogmpartnership.com/wp-content/uploads/2023/02/OGMP-2.0-Implementation-Plan-Guidance_2.pdf. OGMP provides the OGCI collective average target for upstream operations as an example of 'near zero' emissions intensity.

Net equity Scope 1 and 2: net zero action plan

In 2023, we completed the development of decarbonisation plans across our merged portfolio of operated assets including identifying potential large scale opportunities to reduce emissions beyond 2030.

DECARBONISATION PLANNING

We have three ways to achieve our net equity Scope 1 and 2 emissions reduction targets:

- avoiding emissions in the way we design facilities;
- reducing emissions in the way we operate; and
- both buying and originating carbon credits to utilise as offsets for the remainder.

Our priority is to avoid and reduce emissions. All Woodside operated assets and projects must draw up decarbonisation plans to identify the technical opportunities to reduce emissions at the facility, so that the opportunities can be further assessed for engineering and commercial viability.

Opportunities that are estimated to cost less than our internal long-term cost of carbon of $80/t CO_2-e (real terms 2022) are incorporated into asset or project level business plans.[1] These opportunities are at varying levels of maturity. To date:

- Opportunities that we estimate could avoid approximately 16 million tonnes CO_2-e (cumulatively to 2050) have been incorporated into the design of the Scarborough, Pluto Train 2 and Trion projects;[2,3]
- Around a further 70 opportunities, which we estimate could avoid approximately 12 million tonnes CO_2-e (cumulatively to 2050) are targeted for completion at our existing facilities by 2030.[2,3]

We estimate that the opportunities still to be implemented at our existing operating facilities could have a combined capital cost of around $200 million.[2,3]

This does not include the cost of potential projects which we estimate to cost more than $80/t CO_2-e. Some of these may also be pursued following review by the Executive Leadership Team – such as the proposed Woodside Solar project. Other opportunities are pursued in an enterprise large scale abatement plan in order to reduce costs and/or improve maturity, so that they too can be considered for inclusion in asset level business plans. This large scale abatement plan is explained on the next pages.

Asset decarbonisation: our progress and plans

2023 — DELIVERED

- ✓ Completed the development of asset decarbonisation plans across full portfolio of operated assets.
- ✓ Opportunities costing <$80/t CO_2-e have been incorporated into asset level business plans for implementation. Examples of initiatives implemented in 2023 are given on page 22.
- ✓ Multiple large scale (but more expensive) abatement opportunities have been identified using existing technology, with the ability to drive emissions to residual levels, subject to engineering and commercial viability.

2024 — IN PROGRESS

Opportunities estimated to cost <$80/t CO_2-e:

- Targeting implementation of opportunities by end 2025 that could deliver 50% of the identified potential emissions reductions.

Large scale opportunities estimated to cost >$80/t CO_2-e:

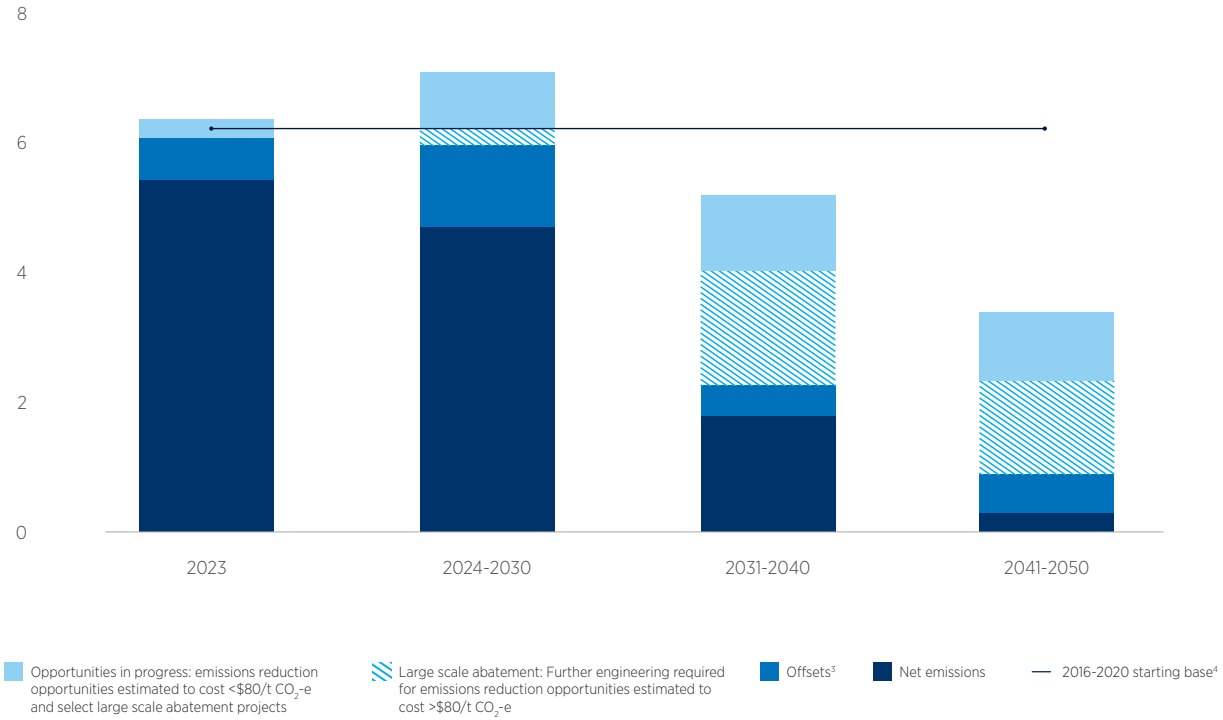
- Attention is focused on the assets with the longest remaining lifespan – primarily the Pluto and Scarborough facilities.
- The 2024 scope of work at these facilities is to conclude engineering assessment of the technology options in order to select the preferred technology for application.

2025+ — PLAN

- Following the selection of large scale abatement options we will undertake further design out engineering to reduce costs and emissions, seeking to advance towards 'FID-ready' status.
- Subject to FID, a scheduled maintenance shutdown at Pluto in 2030 presents the earliest potential window for implementation.
- Some projects will be accelerated ahead of this timeline – e.g. the proposed Woodside Solar project. Woodside continues to progress commercial agreements, including for power transmission, to support the proposed project.

1 Woodside's assumptions on carbon cost pricing include a long-term carbon price of US$80/tonne of emissions (real terms 2022). Woodside continues to monitor the uncertainty around climate change risks and will revise carbon pricing assumptions accordingly.
2 Indicative only, not guidance. Potential impact of opportunities identified in asset decarbonisation plans assuming all opportunities identified progress to execution, which is not certain and remains subject to further maturity of cost and engineering definition. Greenhouse gas quantities are estimated using engineering judgement by Woodside engineers. Please refer to section 7.6 "Disclaimer, risks, emissions data and other important information" for important cautionary information relating to forward looking statements.
3 See announcement titled "Woodside to sell 15.1% Scarborough interest to JERA" (23 February 2024) at woodside.com. Greenhouse gas emissions data including charts and estimates of future abatement plans in this Climate Transition Action Plan have not been updated to reflect changes in Woodside's equity share of the Scarborough Joint Venture as a consequence of the sale of 15.1% interest to JERA.

Potential pathway to net zero (equity Scope 1 and 2 emissions annual average Mtpa CO_2-e) at portfolio of producing assets and sanctioned projects[1,2]



NON OPERATED ASSETS

Woodside's Scope 1 and 2 targets are set on an equity basis. This means they apply to our share of the emissions from all projects that we participate in, irrespective of whether we operate the project, and in proportion to our economic interest.

We share examples of emissions reduction initiatives being implemented on our assets with the Operator of non-operated assets at governance forums and joint venture technical committee meetings. Examples have included sharing knowledge about methane measurement (such as drone observation surveys) and reduction opportunities such as thermal oxidisers at the Wheatstone asset. We also discuss our approach to workforce engagement on decarbonisation and identification of opportunities.

A list of our non-operated JVs is provided in the table (below) along with their Operator and a link to their website for further information about their approach.[5]

Non-operated Asset	Woodside Interest	Operator (for further information)
Gippsland Basin Joint Venture[6]	50%	**ExxonMobil** (ExxonMobil.com)
Kipper Unit Joint Venture[7]	32.5%	
Mad Dog[8]	23.9%	**BP** (BP.com)
Atlantis[9]	44%	
Wheatstone Project[10]	13%	**Chevron** (Chevron.com)

1 Indicative only, not guidance. Potential impact of opportunities identified in asset decarbonisation plans assuming all opportunities identified progress to execution, which is not certain and remains subject to further maturity of cost and engineering definition. Greenhouse gas quantities are estimated using engineering judgement by Woodside engineers. Please refer to section 7.6 "Disclaimer, risks, emissions data and other important information" for important cautionary information relating to forward looking statements. See page 20 for further information about potential project opportunities that have not yet been sanctioned.
2 See announcement titled "Woodside to sell 15.1% Scarborough interest to JERA" (23 February 2024) at woodside.com. Greenhouse gas emissions data including charts and estimates of future abatement plans in this Climate Transition Action Plan have not been updated to reflect changes in Woodside's equity share of the Scarborough Joint Venture as a consequence of the sale of 15.1% interest to JERA.
3 Woodside's approach to utilising carbon credits as offsets in the context of our pathway to net zero is discussed in Section 3.4.
4 The starting base has been calculated as 6.32 Mt CO_2-e which is representative of the gross average annual equity emissions over the period 2016-2020 for both heritage Woodside and heritage BHP's assets, and which may be adjusted (up or down) for potential equity changes in producing or sanctioned assets with a final investment decision prior to 2021.
5 During 2023, Woodside completed a transaction whereby Calgary-based Paramount Resources Ltd (Paramount) took a 50% equity interest in, and operatorship of, 28 leases of the Liard field in Canada. Woodside retains a 50% equity interest in the leases.
6 Gippsland Basin Joint Venture fields lie in permits Vic/ L1-L11 and Vic/L13-20.
7 The Kipper field lies in Australian offshore permits Vic/L9 and Vic/L25
8 The Mad Dog field lies in the US Gulf of Mexico, within lease blocks GC738, GC781, GC782, GC824, GC825, GC826, GC868, GC869, and GC870.
9 The Atlantis field lies in the US Gulf of Mexico, within lease blocks GC699, GC742, GC743, and GC744
10 Woodside's 13% non-operated interest in the Wheatstone Project, which is offshore north western Australia, includes the offshore platform, the pipeline to shore and the onshore plant, but excludes the Wheatstone and Iago fields and associated subsea infrastructure. Woodside is Operator of the Julimar & Brunello fields which is a subsea development tie-back to the Wheatstone offshore platform and has a 65% interest in these fields.

LARGE SCALE ABATEMENT

Emissions reduction opportunities that are estimated to cost more than $80/t CO_2-e are reviewed by our Executive Leadership Team.[1] They are subject to more engineering, cost reduction or technology maturation in a company-wide large scale abatement plan, as depicted in the chart below. If they can be matured to an appropriate level, they will be reassessed by the Executive Leadership Team and progressed where appropriate. The proposed Woodside Solar project is an example of a project likely costing more than $80/t CO_2-e that is progressing.

Multiple opportunities have been identified that could reduce the Scope 1 and 2 emissions from our current portfolio. LNG facilities are the source of the majority of our emissions. They arise from reservoir CO_2, power generation, mechanical turbines and our flaring system.

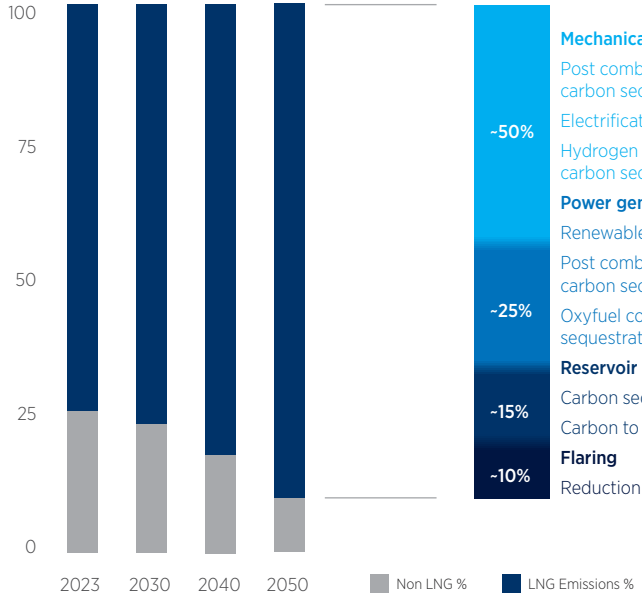
Electrification (using renewable or lower carbon power), CCS and hydrogen fuelling of turbines are all options that could reduce these emissions, creating choices in the optimal mix. We estimate these large scale opportunities could potentially deliver approximately 35 million tonnes of additional cumulative Scope 1 and 2 emissions reductions through to 2050.[2,3]

These large scale abatement opportunities utilise existing technology but require substantial engineering to retrofit onto existing facilities. Because of this, they are currently estimated to cost significantly more than our internal long-term cost of carbon of $80/t CO_2-e (real terms 2022).[1] This means that we target where they can have the highest impact, in particular at our Pluto and Scarborough facilities, which have the longest future life and therefore emissions profile in our current portfolio.

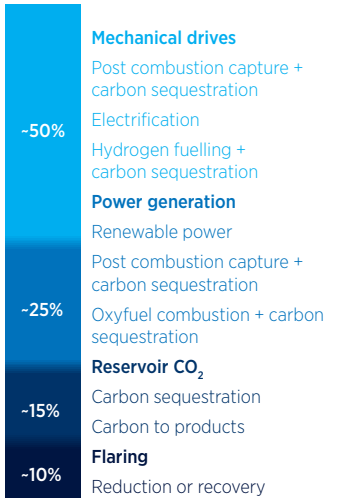
The next stage of our planning process is to determine which of the multiple abatement options should be selected. These technologies are not certain to mature to a level of cost at which they could be implemented on the full scale depicted in the chart on page 19. Because of this and in order to pursue a cost effective approach to decarbonisation, they will also be compared with alternatives, such as new emerging technologies, or the use of carbon credits as offsets.

If all current abatement efforts and future abatement pipeline opportunities are realised, residual emissions from our current portfolio could be approximately 0.3 Mtpa CO_2-e in 2050, an approximately 95% reduction from our 2016-2020 starting base.[2,3]

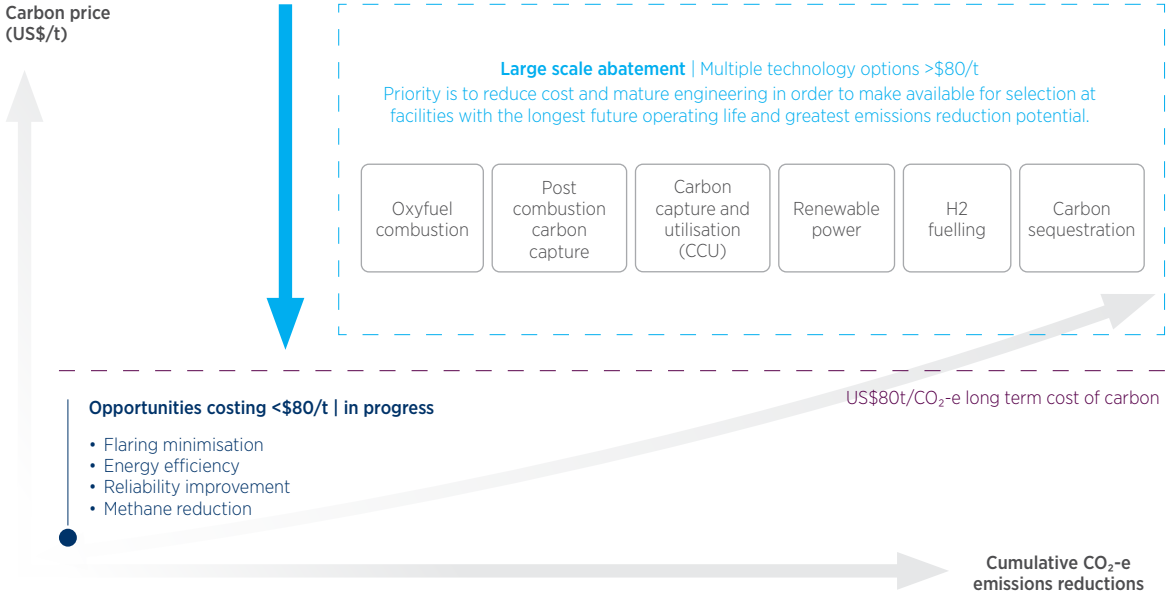
~90% of gross equity Scope 1 and 2 emission in 2050 are from LNG[3,4]



Abatement option for typical LNG emissions sources[2]



Marginal abatement cost curve[2]



All footnotes related to this page are displayed on the next page.

DECARBONISATION AT FUTURE PROJECTS

The same technologies and methods that are used in our asset decarbonisation plans and large scale abatement plan can also be incorporated into the planning for new projects. Because they do not need to be retrofitted onto existing facilities, these technologies are expected to be less expensive to deploy at new projects.

The approach to decarbonisation is incorporated through the development planning cycle. For example, the proposed Browse development has CCS included in its reference case, and measures to reduce flaring have been incorporated in the design of Trion. Emissions data is not incorporated into our reporting until the project is sufficiently mature for its financial information and production forecasting to be included in our business plan.

RISKS TO ACHIEVING THE TARGETS

Whilst we have identified a technical pathway to residual levels of emissions and have started implementation via our asset decarbonisation plans, there are risks to delivery. These include:

- Securing approvals, for example from regulators or joint venture partners.
- Ability to reduce costs.
- Proof of technology in the specific application at our facilities.
- Integration of new designs into existing brownfield facilities.

These risks are mitigated by the ability to meet our targets through the additional use of carbon credits. Our use of carbon credits, including the steps we take to manage associated risks, is further described in section 3.4.

FOCUS ON ACTION

The following pages provide case studies about aspects of how we avoid and reduce emissions at our facilities:

	Pages
Asset decarbonisation in practice	22
Methane emissions management	23
Large scale abatement: vision for Pluto	24-25
Decarbonisation technology development	6-27



Pluto LNG's long future life means the potential for emissions savings make it a priority for the development of large scale abatement.

1 Woodside's assumptions on carbon cost pricing include a long-term carbon price of US$80/tonne of emissions (real terms 2022). Woodside continues to monitor the uncertainty around climate change risks and will revise carbon pricing assumptions accordingly.
2 Indicative only, not guidance. Graphic outlines future decarbonisation options currently being considered. Opportunities may or may not eventuate. Please refer to section 7.6 "Disclaimer, risks, emissions data and other important information" for important cautionary information relating to forward looking statements.
3 Indicative only. Scope 1 and 2 estimates are based on equity share of current portfolio of operating and sanctioned projects.
4 See announcement titled "Woodside to sell 15.1% Scarborough interest to JERA" (23 February 2024) at woodside.com. Greenhouse gas emissions data including charts and estimates of future abatement plans in this Climate Transition Action Plan have not been updated to reflect changes in Woodside's equity share of the Scarborough Joint Venture as a consequence of the sale of 15.1% interest to JERA.

Asset decarbonisation in practice[1]

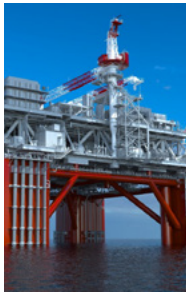
DESIGN OUT / AVOID



Lower Carbon Power: Pluto[2]

We modified the Pluto LNG plant to receive power from the proposed Woodside Solar project. The modifications are substantially complete, ready for grid connection from 2024. We expect to import 50 MW of solar power from 2026, subject to FID.

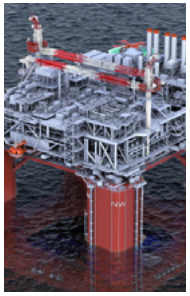
Estimated emissions reduction:
150 ktpa CO_2-e



Flaring minimisation: Trion

We installed gas recovery systems associated with tanks and flare to minimise flaring.

Estimated emissions reduction:[3]
52.4 ktpa CO_2-e



Energy efficiency: Trion

We modified the redundancy for power generation to keep back up generators on standby.

Estimated emissions reduction:[3]
31.6 ktpa CO_2-e

OPERATE OUT / REDUCE

Operating Practices



Reliability improvement: Pluto

We addressed extreme ambient temperature impacts on equipment reliability, for example installing shading and evaporative misting sprays. These and other actions contributed to us avoiding significant extreme heat related reliability events in 2023.

Estimated emissions reduction:[4]
129 ktpa CO_2-e



Flaring minimisation: Angostura

We updated and implemented 12 standing operational procedures to minimise gas flaring during facility startup.

Estimated emissions reduction:
26.5 ktpa CO_2-e

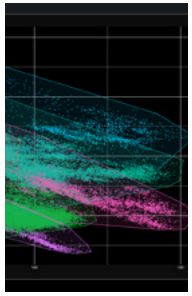


Methane: Pluto

We tested the regenerative thermal oxidizer (RTO) at various temperatures to investigate methane destruction efficiency. Work is now ongoing to amend the operating parameters to achieve the optimal temperature and deliver the emissions reduction potential.

Estimated emissions reduction:
6.0 ktpa CO_2-e

Plant Modifications



Energy Efficiency: Karratha Gas Plant

We increased the utilisation of the highest efficiency generators on site by modifying power cable operating envelopes.

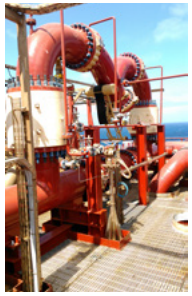
Estimated emissions reduction:
43 ktpa CO_2-e



Flaring minimisation: Shenzi

We installed a low emission flare tip to reduce low and high pressure flare purge rates.

Estimated emissions reduction:
2.4 ktpa CO_2-e



Flaring minimisation: Ngujima-Yin

We installed a parallel strainer and are now able to clean blockages online and eliminate the associated flaring. Suction strainer blockages previously required 10 hours of flaring while the strainers were cleaned.

Estimated emissions reduction:
49 ktpa CO_2-e

1 The Scope 1 and 2 emissions reductions are estimated using engineering judgment by appropriately skilled and experienced Woodside engineers. All examples are for gross emission reductions, not equity share.
2 Implementation is subject to commercial arrangements, regulatory & JV approvals and third party activities (which may or may not proceed).
3 Trion's emissions reduction has been estimated as an average over a 27-year design life. Carbon intensity of the field will not be uniform across each year of expected field life.
4 Emissions reduction reflects comparison to ambient temperature reliability events in 2022 before implementation of extreme heat readiness protocols and may not be realised every year.

Methane emissions management

In January 2024, Woodside joined the UN Environment Programme's (UNEP) flagship reporting and mitigation program, the Oil and Gas Methane Partnership (OGMP 2.0).

Methane management plan: 2023 progress

Methane emissions management is an important part of global efforts to limit climate change because it has a higher global warming potential than carbon dioxide, especially in the near term, and is estimated to have made the second largest contribution to human-induced climate change after carbon dioxide.

Woodside's reported methane emissions are around 0.1% of production by volume. This calculation is supported by our improving ability to directly monitor and measure methane at our facilities. It is lower than the Oil and Gas Climate Initiative (OGCI) 2025 target of below 0.2%.[1] It reflects our long standing focus on reducing methane leaks, which if they occur at sufficient volume would be a loss to our production and a potential safety hazard.

We continue to strive for further reductions through our methane plan (2023 progress against four pillars of the plan is shown on the right). When we assess emissions reduction opportunities, we multiply our internal long-term cost of carbon of $80/t CO_2-e (real terms 2022) by 84 (an effective price for methane of $6,720/t) to align with the higher global warming potential of methane in the near term.

MEASURE

We are improving our ability to measure methane emissions. In 2023 we:

- Built and maintained a database of methane emissions sources, confirmed with selected site measurements across all operated assets.
- Trialled a spectrometric aerial methane measurement technique at onshore facilities.
- Conducted methane point source detection and quantification trials from two satellite vendors to test capability.
- Completed strategic drone surveys trialling the use of CO_2/CH_4 ratios for combustion assessment.
- Piloted several fugitive detection tools including quantified optical gas imaging.
- Partnered with the University of Western Australia to prototype novel methane sensors.

REDUCE

We are taking action to reduce methane emissions to near-zero at our operated assets by prioritising the mitigation of our most material sources.[2] In 2023 we took action to reduce methane emissions by 2.0 ktpa including:[3]

- Performance optimisation of wet gas seals on two boil off gas (BOG) compressors, estimated saving of 1.5 ktpa of methane.
- Rectification of a trunkline fugitive leak at the Karratha Gas Plant onshore terminal, estimated saving of 0.3 ktpa of methane.
- Automation of a manual venting procedure on three acid gas removal units, estimated saving of 0.2 ktpa of methane.

REPORT

We aim to report our methane emissions data accurately and transparently. In 2023 we:

- Conducted surveys which support our calculation that our methane emissions are around 0.1% (of production by volume), consistent with historical aerial (top down) and point source (bottom up) site measurements.
- Engaged with Australia's Climate Change Authority to support improvement of methane reporting regulations

In 2024, we joined the Oil and Gas Methane Partnership (OGMP) 2.0 to support transparent methane emissions reporting.



LEAD

We support the adoption of methane best practice across industry through leadership, advocacy and collaboration. In 2023 we:

- Led the Methane Guiding Principles "Global Midstream Initiative".
- Joined the ASEAN Methane Leadership Program to share methane reduction learnings.
- Sponsored the first technical workshop of the Australian Energy Producers methane taskforce.
- Collaborated with researchers conducting science studies as part of UNEP's International Methane Emissions Observatory's efforts to fill knowledge gaps in methane emissions.
- Shared knowledge on methane management through a presentation and journal article publication at the 2023 Australian Energy Producers conference.
- Presented and participated in panels at the Global Methane Summit and International Gas Union conference.

1 OGCI, 2024. https://www.ogci.com/action-and-engagement/reducing-methane-emissions/#methane-target.
2 OGMP, 2023. "Implementation Plan Guidance", p. 2 https://ogmpartnership.com/wp-content/uploads/2023/02/OGMP-2.0-Implementation-Plan-Guidance_2.pdf. OGMP provides the OGCI collective average target for upstream operations as an example of 'near zero' emissions intensity.
3 The methane emissions reductions are estimated using engineering judgment by appropriately skilled and experienced Woodside engineers. All examples are for gross emission reductions, not equity share.

Large scale abatement: vision for Pluto net zero[1]

Pluto LNG's long future life means the potential for emissions savings make it a priority for the development of large scale abatement.

ABATEMENT OPPORTUNITIES: DELIVERED

Energy Efficiency:

- ✓ High efficiency air filters installed on gas turbines
- ✓ Optimised power generation operating strategy
- ✓ Increased operating pressure of Pluto Train 1
- ✓ Pluto water handling reduced minimum turndown rates
- ✓ Improved air cooler fin fan blades

Flaring:

- ✓ Focus on high reliability operations to reduce flaring
- ✓ Operation of dual boil off gas compressors to reduce flaring associated with ship loading

Methane:

- ✓ Compressor seal gas vents routed to flare system
- ✓ Multi-modal site surveys and remediation for fugitive methane

ABATEMENT OPPORTUNITIES: IN PROGRESS

Energy Efficiency:

- Aero-derivative turbine driven Optimised Cascade® process for Train 2[2]
- Turbine compressor drivers with inlet air chilling and low NOx technology for Train 2
- Electric drive selected for smaller compressors in Train 2
- Integrated Train 2 power supply with existing Train 1 system
- Waste heat recovery on gas turbines
- Flow coated trunkline to reduce roughness
- Battery energy storage system

Flaring:

- Flare tip replacement and combustion system upgrades
- Nitrogen flare purge

Methane:

- Thermal oxidizer installed to remove methane from waste streams

FUTURE POTENTIAL

In the longer term, firmed lower carbon power and CCUS could underpin large scale abatement.[3]

Mechanical drives (gas turbines) and power generation account for the majority of emissions at Pluto. Integration of technologies including hydrogen fuelling and / or post combustion carbon capture could materially reduce these emissions.

Installation of tie-ins during the 2023 turnaround has also made Pluto 'CCU-ready', creating the potential to add value by turning CO_2 into saleable products.

These options are not technically or economically certain to proceed. With a focus on cost-effectiveness, they will also be compared with alternatives, such as new emerging technologies, or the use of carbon credits as offsets.

1 Vision for Pluto net zero is a range of future potential decarbonisation abatement options currently being considered to potentially reduce net emissions from the onshore Pluto LNG facility. Options are conceptual only and subject to change. Images are not to scale, implementation is subject to technology maturity, technical and commercial feasibility, commercial arrangements, regulatory & JV approvals and third party activities (which may or may not proceed).
2 For more information about the Conoco Phillips Optimised Cascade® process see https://lnglicensing.conocophillips.com/what-we-do/lng-technology/optimized-cascade-process/.
3 Please see glossary for the definition of how Woodside uses the term lower carbon.

PLUTO FUTURE VISION: ABATEMENT OPPORTUNITIES

Delivered

Energy efficiency improvements and flaring and methane reduction across existing infrastructure. We continue to focus on further improvement in these areas.

In Progress

Preparation for excellence in commissioning and startup of Scarborough and Pluto Train 2 facilities, including delivering of design out abatement opportunities.

Future Potential[1]

Renewable power import

Grid connection enabling import of renewable power or export of lower carbon power when generating above site needs.

Lower carbon power generation

Oxyfuel thermal power generation, connected to CCS gathering system.

Energy storage system

Renewable power firming.

Electric motor assist

LNG compressor helper motors maximising use of lower carbon power.

Hydrogen blending into turbine fuel

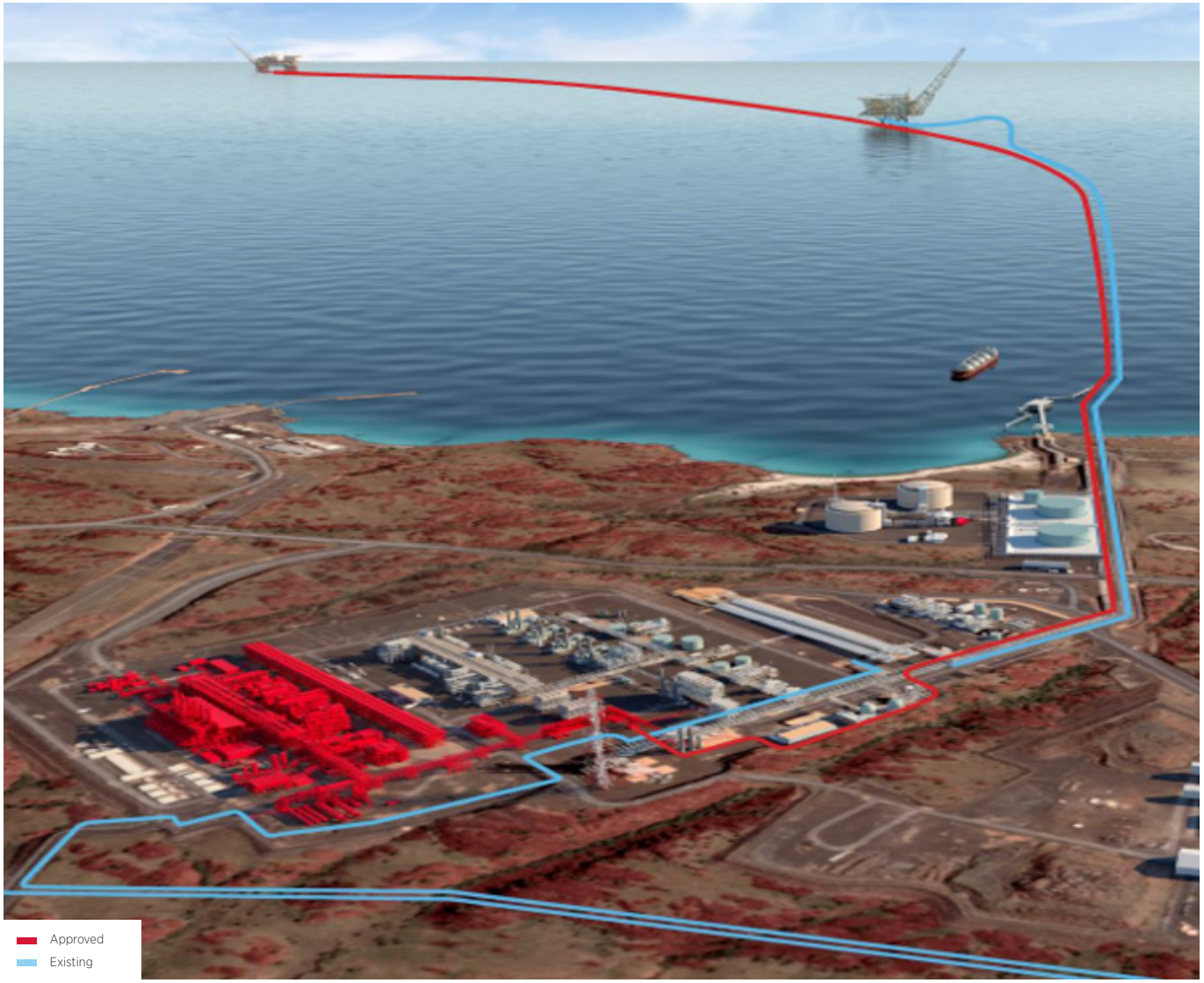
Gas reforming with CCS.

Carbon Capture and Utilisation (CCU)

Turning CO_2 into saleable products e.g. ethanol or protein.

Post combustion carbon capture

Capture and treatment of CO_2 from gas turbine exhaust for export to CCS gathering system.



1 Vision for Pluto net zero is a range of future potential decarbonisation abatement options currently being considered to potentially reduce net emissions from the onshore Pluto LNG facility. Options are conceptual only and subject to change. Images are not to scale, implementation is subject to technology maturity, technical and commercial feasibility, commercial arrangements, regulatory & JV approvals and third party activities (which may or may not proceed).

Decarbonisation technology development

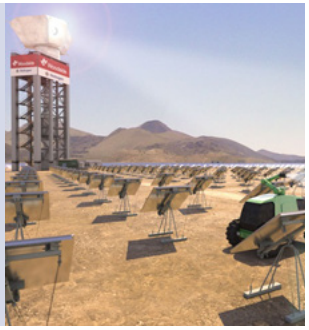
Woodside sees a potential pathway to achieving our net zero aspiration by 2050 or sooner by leveraging existing mature technologies that have been successfully deployed elsewhere. They are however expensive to retrofit on existing facilities, and our engineering focus is to reduce cost.

New technologies are also emerging, and they have the potential to supersede opportunities in our current plans over varying timeframes. Woodside is working to mature technologies and drive a step change in their costs to make them viable options that can be targeted for deployment at different time horizons.

Alternative Power

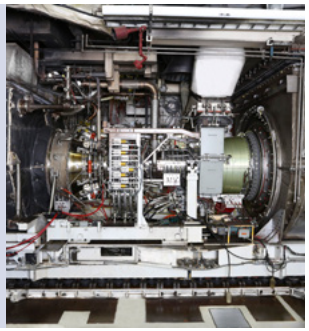
Concentrated Solar Energy

Technology development collaboration with Heliogen to advance longer duration renewable power. This includes Project Capella, a commercial scale demonstration plant in California.



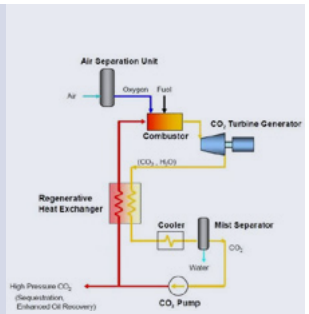
Mixed Fuel H2 Combustion

We are working with Baker Hughes aiming to qualify a technology and pathway for using hydrogen in a gas turbine without expensive infrastructure replacement.



Oxy-Combustion Technology

We are working with several companies to review and develop power generation technology that enables over 90% capture efficiency of CO_2 by combusting natural gas with nearly pure oxygen to achieve high-concentration CO_2 capture.



Monitoring

Methane Monitoring

We are working with suppliers to test a range of technologies to accurately measure methane emissions from various sources such as flaring, venting, and fugitive emissions. Our goal is to detect and reduce these emissions using top-down and bottom-up methodologies, including drones, robots, fixed installations, handhelds, and satellite imagery.



Carbon Capture, Utilisation and storage (CCUS)

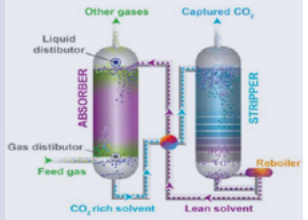
Carbon Capture

We are evaluating options to retrofit carbon capture technologies to LNG plants, so we can select high-efficiency, low-operational cost, and small-footprint options.



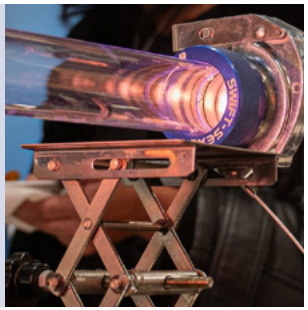
Post Combustion Capture

We are investigating technologies from companies that use novel solvent chemistries and other process intensification methods to enable the point source capture of CO_2 from the combustion of natural gas and other fuels. These novel solvents aim to improve the efficiency of CO_2 capture from flue gases with low CO_2 concentrations, and reduce both the equipment size and energy input, making it potentially feasible to retrofit existing plants with carbon capture.



Decarbonisation Accelerator

We are creating a new Decarbonisation Accelerator in partnership with Rice University to increase the utilisation pathways of CO_2 using plasma chemistry.

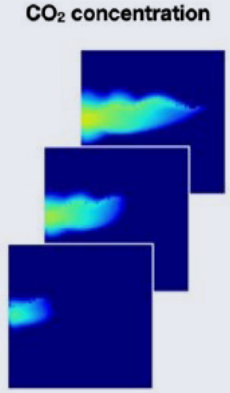


Carbon Capture and Utilisation

Our collaboration with companies, such as Lanzatech, NovoNutrients, and StringBio, aims to accelerate the development or carbon capture and utilisation technologies, ahead of potential deployment on a larger scale.

Carbon Sequestration Monitoring and Modelling

We are working with the SEG Advanced Modeling Corporation's CO_2 Sequestration Project to model injection risk, plume migration, and induced seismicity of CO_2 injection into a reservoir. By comparing this modelling to real-time monitoring using fibre optic and in wellbore seismic measurement, we hope to ultimately reduce the long-term operational cost and improve safety aspects of CCS projects.



Direct Air Capture

We are the largest industrial partner in the Australian Research Council (ARC) Research Hub for carbon utilisation and recycling.



Systems integration and commercialisation

Trailblazer

We are developing a research commercialisation hub with Curtin University, the University of Queensland and James Cook University, and 30 company partners. The Trailblazer program is focused on turning academic research into breakthrough services, products and businesses, particularly in critical minerals and hydrogen.



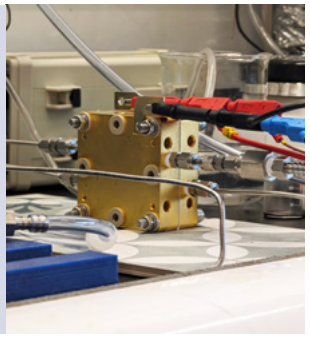
Climatetech Incubator

We are a Founding Partner for the Houston expansion of Greentown Labs, the largest climatech startup incubator in North America. We are participating with the intent of adopting emerging startup technologies into our operations.

Greentown Labs

Energy Partnership

We have renewed our strategic partnership with Monash University. It has three pillars: affordable bulk clean energy; carbon abatement; and thought leadership.



Carbon credits

Investing in carbon credits contributes to preserving the world's carbon budget, by accelerating emissions reduction, avoidance and removal activities that would not otherwise have taken place.



—
Tree planting as part of the Woodside Native Reforestation Project.

ROLE OF CARBON CREDITS IN OUR DECARBONISATION PLANS

Woodside utilises certified carbon credits to offset equity Scope 1 and 2 emissions that are above our targets in a given year after design out and operate out measures have been taken. The availability of carbon credits to offset emissions is important because:

- gross emissions can fluctuate, for example, due to portfolio change or for operational reasons,
- asset decarbonisation plans can take time to implement, especially where they are large scale or complex engineering projects, and
- some decarbonisation technologies may prove too expensive to implement efficiently.

The ability to utilise carbon credits means that we can maintain our target trajectory and continue to reduce our net equity Scope 1 and 2 greenhouse gas emissions, despite these variable factors.

Like our asset decarbonisation plans, our portfolio of carbon credits enables our base business to manage the price risk associated with regulations and our corporate net equity Scope 1 and 2 emissions targets. Carbon credits are available now and can be used in the short and medium term for emissions that are otherwise not technically or economically viable to avoid or reduce.[1]

OUR PORTFOLIO APPROACH

We established a Carbon Business in 2018 in order to develop a portfolio of carbon credits and our skills and expertise in managing carbon credit integrity. Since then we have invested more than $150 million, with approximately one third of that spend focused on the origination of our own projects, and the remainder on purchase of credits.[2,3,4,5] Today, Woodside manages a portfolio of more than 20 million carbon credits, which it has acquired with an average cost of supply of less than $20/t.[3,5]

Over time we are increasing our focus on project origination as this enables us to better manage the cost and integrity of our carbon credits. In 2023, Woodside planted approximately 2.7 million mixed biodiverse seedlings in Western Australia as part of our Native Reforestation Project across approximately 4,700 ha of land at Woodside owned properties.[6] In Senegal, Woodside is funding the restoration of up to 7,000 hectares of mangroves in the Sine Saloum and Casamance regions. Woodside is expected to receive up to 1.4 million carbon credits from this project over 30 years.

A wide range of activities can generate carbon credits. These activities can be categorised into avoidance/reduction (e.g. landfill gas capture or renewable energy) or removal (e.g. reforestation) activities.

*All footnotes related to this page are displayed on the next page.

While avoidance and reduction credits will remain a large share of the portfolio in the near to medium term, we plan to increase the proportion of removal credits over time in support of our net zero aspiration. We currently have and will target to maintain a portfolio made up of 50% nature based removal credits (e.g. biosequestration). We also recognise that long term storage will become increasingly important.

We recognise that the use of carbon credits as offsets has been criticised by some groups, and that if unanswered these criticisms may constitute a risk to their ongoing acceptability. We believe these risks can be mitigated by the way we plan to assess integrity and manage a diverse portfolio of credits.

Woodside subscribes to emerging independent carbon credit rating platforms that assess carbon credit integrity. We also monitor the evolution of integrity assessment frameworks and standards developed by independent organisations when formulating our approach. Our approach is informed by current and emerging external frameworks such as the Integrity Council for the Voluntary Carbon Market (ICVCM)'s Core Carbon Principles, the Investor Group on Climate Change's (IGCC)'s guidance, and the Oxford Principles for Net Zero Aligned Offsetting.[7,8,9]

PRIORITISING EMISSION AVOIDANCE AND REDUCTIONS AT OUR FACILITIES

Our priority is avoiding and reducing emissions. For example we pursue opportunities to reduce emissions in the design and operation of our assets that are economically viable when assessed using an internal long-term cost of carbon, currently US$80/t CO_2-e (real terms 2022). This exceeds the current market price of carbon credits. The generic spot price for Australian Carbon Credit Units (ACCUs) was around A$31.25 (approximately US$21) in the Quarterly Market Report published in December 2023 by the Clean Energy Regulator.[10]

A second way that we prioritise avoidance and reduction is to set executive remuneration targets on gross Scope 1 and 2 emissions performance, which does not include the use of offsets.

Whilst we prioritise avoidance and reduction of emissions at our facilities, carbon credits remain an important option to meet our corporate targets and regulatory needs through to 2030 if required. To date we have secured greater than 90% of expected ACCU requirements to 2030 and have a plan for the remainder.[5,11,12]

1 By 'otherwise not technically or economically viable to avoid or reduce', we are referring to the utilisation of carbon credits for emissions that remain above our targets after 'designout' and 'operate out' activities in a given year and our internal carbon price of $80/t CO_2-e (real terms 2022).
2 Invested amount is pre-tax expenditure incurred prior to 31 December 2023 on market purchased carbon credits and Woodside developed carbon origination projects. Investment in carbon credits allocated to Scope 1 and 2 emissions do not contribute to our Scope 3 investment target. The $150 million quoted investment in carbon credits in this report has not been attributed to the $335 million Scope 3 investment target update in this report.
3 Portfolio volume excludes carbon credits (held and expected to be received) from Woodside Pluto Carbon Offset Project Stages 1-4 held by Woodside Burrup Pty Ltd.
4 Origination refers to carbon offset projects developed by Woodside or third-party project developers, characterised by (i) the provision by Woodside of up-front investment or funding; (ii) Woodside either being a majority participant in the project or a recipient of carbon credits from the project (or both); and (iii) the acceptance of risk by Woodside in relation to carbon credit delivery.
5 The carbon portfolio is dynamic. Volumes, methods and geography are subject to change. Portfolio volume includes Australian Carbon Credit Units and voluntary carbon market credits held, and expected to be delivered or generated up to ~2050 under or in relation to: (i) third party contracts entered into prior to 31 December 2023; or (ii) Woodside originated projects for which land has been purchased prior to 31 December 2023. Volumes reported on an unrisked basis. Unrisked volumes do not include an adjustment to such volumes to reflect any risk of non-delivery. Portfolio volume excludes retired units. Woodside does not make any claims in relation to the mitigation impact of carbon credits within the portfolio unless, and until, a credit is retired or surrendered (taken out of circulation and can no longer be sold). Cost of supply is calculated pre-tax and is based on portfolio volumes and a calculation of 2023 present value unit costs.
6 The project has a potential to sequester approximately 2,000 kt CO_2-e over 25 years.
7 ICVCM, 2023. "The Core Carbon Principles", https://icvcm.org/the-core-carbon-principles/.
8 IGCC, 2022. "Corporate Climate Transition Plans: A guide to investor expectations", https://igcc.org.au/wp-content/uploads/2022/03/IGCC-corporate-transition-plan-investor-expectations.pdf.
9 University of Oxford, 2020. "The Oxford Principles for Net Zero Aligned Carbon Offsetting", https://www.smithschool.ox.ac.uk/sites/default/files/2022-01/Oxford-Offsetting-Principles-2020.pdf.
10 CER, 2023. "December – Quarterly Carbon Market Report – September Quarter 2023", https://www.cleanenergyregulator.gov.au/Infohub/Markets/quarterly-carbon-market-reports.
11 Volume includes Woodside equity interest in carbon credits (held and expected to be received) from Woodside Pluto Carbon Offset Project Stages 1-4 held by Woodside Burrup Pty Ltd.
12 See announcement titled "Woodside to sell 15.1% Scarborough interest to JERA" (23 February 2024) at woodside.com. Greenhouse gas emissions data including charts and estimates of future abatement plans in this Climate Transition Action Plan have not been updated to reflect changes in Woodside's equity share of the Scarborough Joint Venture as a consequence of the sale of 15.1% interest to JERA.

One carbon credit is intended to represent a tonne of emissions avoided, reduced or removed outside of our facilities.[1] Because of the importance of carbon credit integrity, Woodside applies our own additional assessment to our carbon credits portfolio. This is summarised in the table below.

Tree planting as part of Woodside's Native Reforestation Project 2020 - 2023





Integrity assessment for carbon credits[2]	
Abatement is demonstrably additional	We examine whether the credit represents emissions reductions or removals that would not have occurred in the absence of a carbon market, for example, by scrutinising the 'additionality approach' applied by the project.
High likelihood of permanence	We assess the permanence of abatement that a credit represents including consideration of permanence periods, risk of reversal and adequacy of buffer pools.
Accurate quantification of abatement	We form an independent view of the risk of over-crediting by evaluating factors such as baseline conservatism, monitoring requirements and calculation values.
Recognised standards body[1]	We source credits issued by established standards bodies that independently verify and issue credits. Our current portfolio is sourced from the Australian Carbon Credit Scheme, Verra and Gold Standard.
Mitigation against leakage	We evaluate whether the carbon project could result in increased emissions outside of the project boundary, for example, by analysing common land usage within the broader geographic region.
Vintage	We aim to retire credits with a vintage with a maximum of five years between the abatement activity and emissions.
Environmental and social performance	Woodside assesses the overall environmental and social performance of a carbon project and prioritises projects that have benefits such as land restoration and employment opportunities for local communities.
Location and methodology	We take a portfolio approach to managing regulatory risk and carbon credit acceptability, aiming for carbon credit methodology and geographical diversification.

1 The measurement, verification and reporting of the abatement is prescribed and administered by independently managed Standards (such as Verra or Gold Standard), or by Regulators through legislation (such as the Australian Clean Energy Regulator through the Carbon Farming Initiative Act).
2 Informed by standards such as the Integrity Council for the Voluntary Carbon Market (ICVCM) Core Carbon Principles. https://icvcm.org/the-core-carbon-principles/.

WOODSIDE'S PORTFOLIO OF CARBON CREDITS[1,2]

Portfolio of unretired carbon credits

~20MT
CO_2-E IN TOTAL

<$20
/TONNE AVERAGE COST OF SUPPLY[3]

Woodside portfolio



- **~25%** Origination[4]
- **~75%** Market

Woodside's portfolio by registry



- **~58%** ACCU
- **~40%** Verra - Verified Carbon Units (VCUs)
- **~2%** Gold Standard - Verified Emissions Reductions (VER)

Origination progress[4]



- **52%** Planted
- **48%** Unplanted

Total current Australian land portfolio forecast to generate approximately 4,800 kt CO_2-e.

Woodside's portfolio by method



- **~30%** Renewables, energy efficiency and waste management
- **~50%** Biosequestration[5]
- **~20%** Fire management and forest protection[6]

Woodside's portfolio by geography



- **~58%** Australia
- **~18%** SE Asia and Pacific
- **~13%** Africa
- **~6%** South America
- **~5%** India, China, and Middle East

1 The carbon portfolio is dynamic. Volumes, methods and geography are subject to change.
2 Portfolio volume includes Australian Carbon Credit Units and voluntary carbon market credits held, and expected to be delivered or generated up to approximately 2050 under or in relation to: (i) third party contracts entered into prior to 31 December 2023; or (ii) Woodside originated projects for which land has been purchased prior to 31 December 2023. Volumes reported on an unrisked basis. Unrisked volumes do not include an adjustment to such volumes to reflect any risk of non-delivery. Portfolio volume excludes carbon credits (held and expected to be received) from Woodside Pluto Carbon Offset Project Stages 1-4 held by Woodside Burrup Pty Ltd. Portfolio volume excludes retired units. Woodside does not make any claims in relation to the mitigation impact of carbon credits within the portfolio unless, and until, a credit is retired or surrendered (taken out of circulation and can no longer be sold).
3 Cost of supply is calculated pre-tax and is based on portfolio volumes and a calculation of 2023 present value unit costs.
4 Origination refers to carbon offset projects developed by Woodside or third-party project developers, characterised by (i) the provision by Woodside of up-front investment or funding; (ii) Woodside either being a majority participant in the project or a recipient of carbon credits from the project (or both); and (iii) the acceptance of risk by Woodside in relation to carbon credit delivery.
5 Biosequestration includes human induced regeneration (HIR), afforestation, reforestation and revegetation (ARR) and environmental planting methods.
6 Fire management and forest protection includes savannah burning and reducing emissions from deforestation and forest degradation (REDD+) methods.

Scope 3 emissions

Scope 3 emissions matter to Woodside because they are the Scope 1 and 2 emissions of our customers and suppliers.



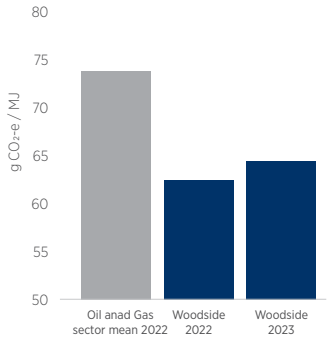
Gas is used in a variety of high temperature industrial processes, such as iron and aluminium production.

Scope 3 emissions occur inside our value chain but outside our operations. For example, the emissions from a supplier's activities when providing us with goods and services, or from a customer's activities when they are using our products.

As our customers decarbonise there is a risk that they may no longer be able to use our products (and suppliers may not be able to deliver to us) in the same way or at the same cost. As a result, Scope 3 emissions are a guide to how our customer's and supplier's decarbonisation may impact our business.

A measure of our exposure to Scope 3 emissions is the life cycle intensity of our portfolio (Scope 1, 2 and 3 emissions, per unit (megajoule) of energy that we produce and sell). Woodside's intensity is lower than the oil and gas sector average due to the weighting of our portfolio to natural gas.

Scope 1, 2, 3 life cycle intensity[1]



Woodside's intensity increased in 2023 due to the effect of a full year of the merger with BHP's petroleum business, which has relatively more oil, but remains lower (better) than the sector average.

Woodside plans to manage its exposure to Scope 3 emissions by:

- **Assessing** our investments for their resilience to the energy transition. Our approach is described more fully in the capital allocation section starting on page 42.
- **Diversifying** our portfolio by investing in new energy products and lower carbon services that can avoid or reduce customer emissions.
- **Supporting** our customers and suppliers to reduce their emissions and reach their Scope 1 or 2 targets.
- **Promoting** consistent global measurement and reporting of emissions.

INVEST IN PRODUCTS AND SERVICES FOR THE ENERGY TRANSITION

Assess	Diversify	Support
Investments for energy transition resilience	Invest in new energy products and lower carbon services	Our customers and suppliers to reduce their emissions

Promote global measurements and reporting

1 Woodside analysis, based on Woodside Scope 1, 2 and 3 emissions data for 2023 relative to the Transition Pathway Initiative oil and gas sector mean assessment date 30June 2023. https://www.transitionpathwayinitiative.org.

SCOPE 3 EMISSIONS IN WOODSIDE'S VALUE CHAIN

UPSTREAM SCOPE 3 EMISSIONS

Emissions created when suppliers provide us goods and services

Employee commuting

Business travel

Waste generated from operations

Purchased goods and services (Other than traded hydrocarbons)

Selected other upstream

219 $ktCO_2$-e

Purchased goods and services (Traded hydrocarbons)

1,225 $ktCO_2$-e

WOODSIDE OPERATIONS

This graphic displays Woodside's 2023 Scope 3 emissions, itemised by category. Over 95% of Woodside's Scope 3 emissions are categorised as "use of sold product".

These emissions do not include emissions from Woodside's direct operations which are classified Scope 1 emissions, or emissions associated with the use of imported power which are classified Scope 2 emissions.

In 2023:
- Gross equity Scope 1 emissions were 6,172 $ktCO_2$-e.
- Gross equity Scope 2 emissions were 18 $ktCO_2$-e.

All data given on equity share basis.

DOWNSTREAM SCOPE 3 EMISSIONS

Emissions created from shipping our products to customers and when they use them.

Shipping (Transport and distribution)

1,728 $ktCO_2$-e

Use of sold products (Woodside production)

64,612 $ktCO_2$-e

Use of sold products (Third party production)

5,041 $ktCO_2$-e

The graphic above illustrates Woodside Scope 1, 2 and 3 emissions. See data table on pages 72-73 for more information.

Scope 3 targets

In 2023, we continued to review our approach to Scope 3 targets in response to investor feedback and have decided to supplement our existing investment target with a new complementary emissions abatement target.

Our Scope 3 approach includes the introduction of new products and services into our portfolio, like hydrogen and CCUS. These products and services can help our customers avoid or reduce their Scope 1 or 2 emissions and therefore reduce the life cycle (Scopes 1, 2 and 3) emissions intensity of our portfolio.

For example, products like hydrogen have the potential to increase our sales of energy, without materially adding to the Scope 3 emissions from their use. Customers of CCUS have the potential to reduce their Scope 1 emissions, adding negative emissions to our value chain.

The investment target tracks our work to develop these projects and bring them to market. The emissions abatement target will track the potential impact of these projects on customer emissions.

SCOPE 3 INVESTMENT TARGET[1]

In 2021, Woodside set a Scope 3 investment target – aiming to invest $5 billion in new energy products and lower carbon services by 2030.[2]

At the end of 2023, we have cumulatively spent more than $335 million towards this target. 2023 expenditure increased over 135% compared to 2022. We expect expenditure to continue to ramp up towards the back end of the target period, subject to markets developing, because most project expenditure occurs in the construction phase.

SCOPE 3 EMISSIONS ABATEMENT TARGET[1]

Woodside has now also set a related Scope 3 emissions abatement target, to indicate the potential abatement impact of these products and services upon customer Scope 1 or 2 emissions.

This target is to take final investment decisions on new energy products and lower carbon services by 2030, with total abatement capacity of 5 Mtpa CO_2-e.

The customers for these products and services may be the same as the customers of our oil and gas business, directly substituting their energy for new products or directly abating the associated emissions. They may also be customers of the new products and services, without also being customers of oil and gas. Our methodology for reporting emissions in these different circumstances is described on page 75-76.

SCOPE 3 EMISSIONS

Investment target[1]

Investment in new energy products and lower carbon services by 2030

$5 BILLION[2]

Emissions abatement target[1]

Take FID on new energy products and lower carbon services by 2030, with total abatement capacity of

5 MTPA CO_2-e[3]

1 Scope 3 targets are subject to commercial arrangements, commercial feasibility, regulatory and Joint Venture approvals, and third party activities (which may or may not proceed). Individual investment decisions are subject to Woodside's investment targets. Not guidance. Potentially includes both organic and inorganic investment.
2 Includes pre-RFSU spend on new energy products and lower carbon services that can help our customers decarbonise by using these products and services. It is not used to fund reductions of Woodside's net equity Scope 1 and 2 emissions which are managed separately through asset decarbonisation plans.
3 Includes binding and non-binding opportunities in the portfolio, subject to commercial arrangements, commercial feasibility, regulatory and Joint Venture approvals, and third party activities (which may or may not proceed). Individual investment decisions are subject to Woodside's investment targets. Not guidance.



Gas is a feedstock for ammonia which is used for fertilizers in agriculture.

New energy products

Woodside is developing new energy products that can supply energy to customers with lower carbon emissions at the point of use than oil and gas products.

HYDROGEN

New energy products such as hydrogen (and hydrogen derivatives such as ammonia) can help customers to avoid emissions at the point of use by switching from unabated fossil-fuels.

The expected uses of hydrogen include:

- **Heavy duty road transportation:** diesel substitution where hydrogen can offer operational benefits compared to battery electric trucks;
- **Power:** decarbonising coal-fired power (e.g. ammonia blends) and firming renewables in the grid;
- **Shipping and aviation fuels:** substitution for marine diesel and aviation fuel;
- **Industrials and chemicals:** producing heat for high temperature processes and as a chemical feedstock.

We estimate that a tonne of hydrogen when used instead of diesel in trucking would avoid 11.2 tCO_2-e. Ammonia is heavier than liquid hydrogen and is less energy dense on a mass basis. A tonne of ammonia used instead of marine fuel oil would avoid 1.5 tCO_2-e, and a tonne of ammonia displacing coal in power generation would avoid 2.0 tCO_2-e.[1]

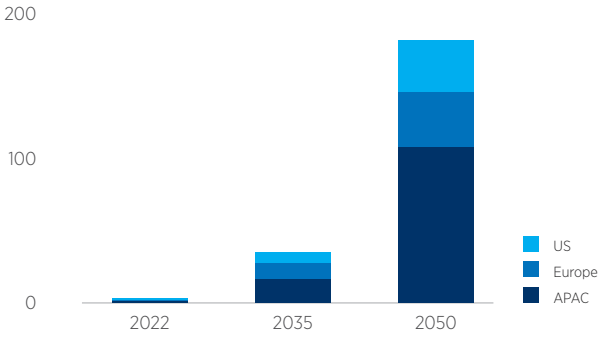
Progress in securing hydrogen offtake has been slower than originally anticipated. However, our confidence in the growth of its role in the energy transition remains. Woodside is evaluating the recent hydrogen Production Tax Credit guidance provided by the United States Internal Revenue Service (IRS).[2] As currently drafted, the proposed rules will make it more challenging for companies to develop electrolysis-based hydrogen projects. Woodside intends to propose revisions to the proposed rules.

Engineering progress is being made on a number of proposed opportunities as shown in the table on the next page. Woodside will not proceed beyond 'FID-ready' until we have sufficient confidence (e.g. in offtake) that an opportunity is compatible with our capital allocation framework.[3] Woodside's capital allocation framework is described on page 49.

RENEWABLES

Woodside is working to mature a range of renewable opportunities. These include the proposed Woodside Solar project which in Phase 1 is targeting the reduction of Woodside Scope 1 emissions from the Pluto LNG facility, and could expand to include third party sales. Woodside has a technology development collaboration with Heliogen to advance longer duration renewable power. The collaboration includes delivery of a commercial scale demonstration plant in California known as Project Capella. Woodside is also evaluating early-stage onshore wind opportunities in Western Australia and Queensland to support our new energy plans.

Projected low carbon hydrogen demand growth (Mtpa)[4]



1 Hydrogen can be produced from fossil fuels (e.g. natural gas reforming) with emissions potentially abated (e.g. through CCUS) or by electrolysis including but not necessarily with renewable electricity. Emissions from the production of hydrogen that are not abated would be Scope 1 or 2 emissions for the hydrogen producer. In Woodside's case they would therefore be subject to Woodside's net equity Scope 1 and 2 emissions targets. Scope 3 emissions displacement reductions are estimated using engineering judgment by appropriately skilled and experienced Woodside engineers.
2 IRS, 2023. "Section 45V Credit for Production of Clean Hydrogen; Section 48(a)(15) Election To Treat Clean Hydrogen Production Facilities as Energy Property", https://www.federalregister.gov/documents/2023/12/26/2023-28359/section-45v-credit-for-production-of-clean-hydrogen-section-48a15-election-to-treat-clean-hydrogen.
3 A project is considered FID-ready if it has completed all the necessary studies, permits and designs so that a final investment decision can be made. This decision is made based on a range of financial, technical and strategic factors, and is a requirement for construction and implementation of a project to commence.
4 Source: Wood Mackenzie Lens Hydrogen, October 2023.

Opportunity updates: new energy

	Hydrogen and Ammonia						Renewables
Proposed opportunity[1]	**H2OK**	**US Gulf Coast Opportunity**	**H2Perth**	**Hydrogen Refueller @ H2Perth**	**H2TAS**	**Southern Green Hydrogen**	**Capella**
Description	Commercial scale. Renewable hydrogen (from electrolysis).[2]	Commercial scale. Ammonia production from gas reforming (with CCS) and/or electrolysis.	Commercial scale. Hydrogen and ammonia production from gas reforming (with CCS) and/or electrolysis.[3]	Self contained hydrogen production, storage and refuelling station. Renewable hydrogen (from electrolysis).[2]	Commercial scale. Renewable hydrogen and ammonia (from electrolysis).[2]	Commercial scale. Renewable hydrogen and ammonia (from electrolysis).[2]	Commercial scale demonstration project with Heliogen. AI-enabled concentrated solar energy project.
Target Market	Domestic heavy duty transport	Export	Domestic market and export	Domestic heavy duty transport	Domestic market and export	Domestic market and export	Demonstration project
Location	Ardmore, Oklahoma, USA	Gulf Coast, USA	Perth, Western Australia	Perth, Western Australia	Bell Bay area of Tasmania	Southland, New Zealand	California, USA
Land	✓ (Purchased)	In progress	✓ (Option to lease)	In progress	✓ (Option to lease)	In progress	✓ (Option to purchase)
Power and water	✓[4]	In progress	In progress	In progress	In progress	In progress	✓
Pre-front end engineering design (Pre-FEED)	✓	In progress	Concept definition commenced June 2022	✓	Concept definition commenced Dec 2021	Concept definition commenced Nov 2022	✓
Front end engineering design (FEED)	✓			✓[7]			✓
Regulatory approvals[5]	In progress		In progress	In progress			In progress
Technical readiness to support FID[6]	✓			✓[7]			In progress
Commercial readiness to support FID[6]	In progress			FID taken May 2023			N/A - demonstration project
Potential scale[8]	Up to 60 tpd of hydrogen. 230 ktpa CO_2-e Scope 3 emissions avoidance.	Up to 4,000 tpd of ammonia. 2,020 ktpa CO_2-e Scope 3 emissions avoidance.	Up to 2,700 tpd of ammonia (Phase 1). 1,360 ktpa CO_2-e Scope 3 emissions avoidance.	Initial production of 0.2 tpd of hydrogen, with the potential to scale up to 1 tpd. 1 ktpa CO_2-e Scope 3 emissions avoidance.	Up to 550 tpd of ammonia. 270 ktpa CO_2-e Scope 3 emissions avoidance.	Up to 1,400 tpd of ammonia (100% share).[9] 700 ktpa CO_2-e Scope 3 emissions avoidance (100% share).[9]	5 MW of concentrated solar thermal power.

This table provides information about proposed new energy opportunities currently in our portfolio. They are at different stages of maturity and may not all proceed to final investment decisions. We are also working to develop additional opportunities not shown here. The purpose of this table is to demonstrate that we are pursuing multiple opportunities as part of our approach to managing the risks to achieving our Scope 3 targets.

1 Proposed opportunities are subject to commercial arrangements, commercial feasibility, regulatory and Joint Venture approvals, and third party activities (which may or may not proceed). Individual investment decisions are subject to Woodside's investment targets. Not guidance.
2 Opportunity proposes to use electricity sourced from the grid from renewable sources and to procure renewable energy certificates to abate remaining emissions.
3 For the electrolysis component of H2Perth, H2Perth proposes to use a target of 80% renewable electricity from start-up for Phase 1, stepping up to 100% renewable electricity for the entire facility by 2040.
4 Woodside agreed initial terms for power but subject to further review given a recent draft IRA guidance.
5 Regulatory approvals are 'in progress' if the application documentation is being developed or has been submitted to the regulator for approval, but a final decision has not yet been made.
6 A project is considered FID-ready if it has completed and/or obtained the necessary studies, permits and designs so that a final investment decision can be made. This decision is made based on a range of financial, technical and strategic factors, and is a requirement for construction and implementation of a project to commence.
7 Item was sufficiently progressed to support the FID taken in May 2023, however, technical work is progressing with ongoing design optimisation.
8 Project capacity subject to further engineering. Potential scale of Scope 3 emissions avoidance is estimated using engineering judgement by appropriately skilled and experienced engineers. Woodside has made the assumption to estimate the avoided emissions of each project through the displacement of diesel for domestic heavy-duty transport market and through the displacement of marine fuel oil (Low Sulphur Fuel Oil) for all other markets. Actual displaced emissions may differ based on actual use case.
9 Woodside's equity in Southern Green Hydrogen is subject to finalising commercial agreements.

Lower carbon services

Woodside is developing lower carbon services that can reduce customer emissions.

CARBON CAPTURE AND STORAGE

CCS is a mature technology which represents a proven solution to abate large-scale industrial emissions. Services like CCS can help customers reduce the emissions that they would otherwise generate when using Woodside products (or similar products sourced from others). Because CCS is also a solution for reducing Woodside's Scope 1 emissions at our assets, we have the potential to underpin the development of CCS projects for our own use whilst customer demand develops.

We believe CCS will play an increasing role in the energy transition, and also that Woodside has competitive advantages including its knowledge of geoscience, subsurface engineering and bulk-gas handling.

CARBON CREDIT PORTFOLIO

Our carbon credit portfolio, which is being developed primarily to address Woodside's Scope 1 and 2 emissions (see pages 28-31) could also be offered for sale to offset customer emissions. We are currently exploring opportunities to offer carbon credits to customers bundled with our hydrocarbon products, such as LNG cargoes from Scarborough. In the past we have offered carbon credits with cargoes for the associated Scope 1 and 2 emissions.

CARBON CAPTURE AND UTILISATION

In the longer term, Carbon Capture and Utilisation (CCU, also referred to as Carbon-to-Products) has the potential to utilise third party sources of CO_2 at scale.

In 2023, Woodside completed a number of engineering studies with CCU technology developers LanzaTech, NovoNutrients, StringBio and several engineering firms. These studies have helped inform how their technologies may be integrated and optimised to convert greenhouse gases into a variety of useful products.

Woodside is a founding partner in the RECARB ARC Hub based at Monash University which is exploring Direct Air Capture of CO_2 for use in products.

ROLE OF CCS IN SCIENTIFIC PATHWAYS

"CO_2 capture and subsurface injection is a mature technology for gas processing and enhanced oil recovery. In contrast to the oil and gas sector, CCS is less mature in the power sector, as well as in cement and chemicals production, where it is a critical mitigation option. The technical geological CO_2 storage capacity is estimated to be in the order of 1,000 gigatonnes of CO_2, which is more than the CO_2 storage requirements through 2100 to limit global warming to 1.5°C, although the regional availability of geological storage could be a limiting factor. If the geological storage site is appropriately selected and managed, it is estimated that the CO_2 can be permanently isolated from the atmosphere. Implementation of CCS currently faces technological, economic, institutional ecological-environmental and socio-cultural barriers. Currently, global rates of CCS deployment are far below those in modelled pathways limiting global warming to 1.5°C or 2°C. Enabling conditions such as policy instruments, greater public support and technological innovation could reduce these barriers."

IPCC Sixth Assessment Report[1]

1 IPCC 2022. "Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change" Summary for Policymakers paragraph C.4.6.

Opportunity updates: CCS

Proposed opportunity[1]	Angel CCS OPERATED	Bonaparte CCS NON-OPERATED	South East Australia (SEA) CCS NON-OPERATED
Description	Proposed large-scale multi-user CCS hub with the potential to help Australian and international customers decarbonise.	Proposed multi-user CCS hub with the potential to help Australian and international customers decarbonise.	Proposed multi-phased CCS project with the potential to help Australian and international customers decarbonise.
Location	Offshore, North West Australia	Offshore, Northern Australia	Offshore, South East Australia
Greenhouse Gas permits secured[2]	✓	✓	In progress (submitted Nov 2023, outcome pending)
Facilities land access[3]	In progress	In progress	In progress (Phase 1)
Pre-front end engineering design (Pre-FEED)	Concept definition commenced Nov 2023	Concept select commenced Aug 2023	✓ (Phase 1)
Front end engineering design (FEED)			Phase 1 FEED commenced April 2023
Regulatory approvals[4]	In progress	In progress	In progress
Technical readiness to support FID[5]			
Commercial readiness to support FID[5]			
Potential scale[6]	Foundation project: up to 5 Mtpa CO_2-e emissions reduction. Potential to address Scope 1 and 3 emissions. Woodside equity 20%. Woodside equity Scope 3 estimate is 0.6 Mtpa CO_2-e emissions reduction.	Foundation project: up to 5 Mtpa CO_2-e emissions reduction. Potential to address Scope 3 emissions. Woodside equity 21%. Woodside equity Scope 3 estimate is 1.05 Mtpa CO_2-e emissions reduction.	Foundation project: Phase 1 ~0.5 Mtpa CO_2-e emissions reduction (Scope 1 only). Phase 2 expansion, up to 1.5 Mtpa CO_2-e emissions (potential Scope 3). Woodside equity 50%. Woodside equity Scope 3 estimate is 0.75 Mtpa CO_2-e emissions reduction (Phase 2 only).

This table provides information about proposed CCS opportunities currently in our portfolio. They are at different stages of maturity and may not all proceed to final investment decisions. We are also working to develop additional opportunities not shown here. The purpose of this table is to demonstrate that we are pursuing multiple opportunities as part of our approach to managing the risks to achieving our Scope 3 targets.

1 Proposed opportunities are subject to commercial arrangements, commercial feasibility, regulatory and Joint Venture approvals, and third party activities (which may or may not proceed). Individual investment decisions are subject to Woodside's investment targets. Not guidance.
2 Angel CCS GHG permit: G-10-AP. Bonaparte CCS permit: G-7-AP. SEA CCS permit application: GHG23-10.
3 Land access is the right to install surface infrastructure including transportation infrastructure.
4 Regulatory approvals are 'in progress' if the application documentation is being developed or has been submitted to the regulator for approval, but a final decision has not yet been made.
5 A project is considered FID-ready if it has completed and/or obtained the necessary studies, permits and designs so that a final investment decision can be made. This decision is made based on a range of financial, technical and strategic factors, and is a requirement for construction and implementation of a project to commence.
6 Project capacity subject to further engineering. Potential scale of Scope 1 and Scope 3 emissions is based on best technical estimate using engineering judgement by appropriately skilled and experienced engineers including potential allocation of capacity to meet Woodside Scope 1 emissions requirements.

RISKS TO ACHIEVING THE SCOPE 3 INVESTMENT AND EMISSIONS ABATEMENT TARGETS

Whilst demand for new energy products and lower carbon services is expected to grow significantly during the energy transition, the timing and pace of such growth is not certain.

Risks to achieving the targets include that technology and markets for these products and services are developing rapidly. Because of this, Woodside actively reviews its strategy and its portfolio of opportunities and they should be expected to evolve as a matter of normal practice.

Woodside has targets for the economic viability of its product streams contained in its capital allocation framework. See page 49. Achieving these returns may depend on the development of government policy, such as grants and subsidies. Whilst indicated by the intent of high level government policy, these measures are not currently implemented to the extent required.

Because markets for these products and services are relatively immature (compared to oil and gas markets), confidence in offtake may not be secured at the same pace as engineering maturity. This means that some projects might achieve technical 'FID-ready' status and then effectively be paused until such time as acceptable offtake is achieved.[1]

Woodside is actively seeking to address these risks including by pursuing multiple opportunities to achieve our targets.

ADDRESSING THE RISK TO SECURING OFFTAKE

Markets for lower carbon services and new energy products are still developing. We recognise that for a customer to switch to buying hydrogen or hydrogen derivatives such as ammonia, they need to make a significant decision to convert their equipment (for example, a trucking fleet), and for this they need to have confidence in the price and reliability of supply. The same is true of the investment needed for a customer to commit to a CCS project at their business.

To build this confidence, Woodside has established a dedicated team targeting potential customers in the domestic heavy-duty transport, industrials and chemicals sectors, and the international export and marine fuels sectors.

We are also communicating with potential customers with the objective of developing orderbooks in priority international markets of the United States, Europe (Germany and Netherlands) and Asia-Pacific (Singapore, Korea and Japan). Business development teams in the United States, Europe and APAC coordinate and work alongside country offices and central marketing teams to further develop these relationships.

Customer collaborations include:[2]

- studies relating to the capture of CO_2 by industry in the Chubu region of Japan and its transportation and storage in Australia, with Sumitomo Corporation, Toho Gas Co Ltd and Kawasaki Kisen Kaisha Ltd;
- studies relating to the capture of CO_2 by industry in the Setouchi and Shikoku regions of Japan and its transportation and storage in Australia, with Sumitomo Corporation, JFE Steel Corporation, Sumitomo Osaka Cement Co Ltd and Kawasaki Kisen Kaisha Ltd;
- studies relating to the capture of CO_2 by from power generation in the Kansai region of Japan and its transportation and storage in Australia, with Kansai Electric Power Co.;
- evaluating the potential of the supply of liquid hydrogen to Keppel Data Centres' data centre facilities, including its planned Datapark+, which is envisioned to be an energy-efficient data centre park development in Singapore;
- opportunities relating to long term hydrogen and ammonia offtake arrangements and participation in production projects, with South Korea's SK E&S Co Ltd.

Woodside has also entered into non-binding agreements to collaborate individually with Sumitomo Corporation and Sojitz Corporation on global opportunities in new energy which could include ammonia, hydrogen, carbon capture and storage (CCS) and carbon management technology. These are part of a strategic relationship with LNG Japan, a 50:50 joint venture between Sumitomo Corporation and Sojtiz Corporation. The strategic relationship also includes equity in the Scarborough Joint Venture and potential LNG offtake.

Woodside and JERA have also entered into a non-binding agreement for new energy collaboration including potential opportunities in ammonia, hydrogen, carbon management technology and carbon capture and storage to support common decarbonisation ambitions.[3]

1 A project is considered FID-ready if it has completed and/or obtained the necessary studies, permits and designs so that a final investment decision can be made. This decision is made based on a range of financial, technical and strategic factors, and is a requirement for construction and implementation of a project to commence.
2 Customer collaborations are non-binding.
3 See announcement titled "Woodside to sell 15.1% Scarborough interest to JERA" (23 February 2024) at woodside.com.

Supporting our value chain

In addition to our plans to invest in new energy products and lower carbon services, Woodside plans to support our customers and suppliers to help them reduce emissions; and promote global measurement and reporting.

SUPPORTING CUSTOMERS AND SUPPLIERS

- Woodside has been implementing climate-related requirements into new tenders and contracts throughout 2023, which includes evaluating tenders based on climate criteria and reporting carbon emissions during contract execution. To support our suppliers, we have been engaging them via existing forums and also encouraging them to bring forward emissions reduction opportunities.
- We joined the **ASEAN Methane Leadership Programme** in 2023 and initiated an Australian methane programme through the **Australian Climate Leaders Coalition**. These programmes allow Woodside to share expertise with other companies in the natural gas value chain to help them reduce emissions of methane to near-zero.[1] Any such reductions at facilities using natural gas purchased from Woodside could be a reduction in our Scope 3 emissions.
- We extended our membership of the **Qantas Sustainable Aviation Fuels Coalition (SAF Coalition)** which we joined in 2022. The SAF Coalition supports the purchase by Qantas of SAF, reducing Qantas Scope 1 emissions and also business air travel Scope 3 emissions by around 0.9 kt CO_2-e for each member.
- We joined **The Silk Alliance** in 2024. Silk Alliance is a concept of a Green Corridor Cluster where the technological, economic, and regulatory feasibility of zero emissions shipping is observed on a 'cluster' of ships operating within a specific catchment region, extending to the Indian and Pacific Ocean region.
- In 2023, Woodside, **HD Korea Shipbuilding & Offshore Engineering (HD KSOE),** and **Hyundai Glovis** achieved a key milestone with the completion of a detailed study into the design of a large-scale, purpose-built liquid hydrogen carrier. The study focused on refining the flexible ship design to achieve improvements in safety, constructability, and cost-effectiveness. In 2024, **Mitsui O.S.K. Lines**, one of the world's largest global shipping companies is welcomed to the collaboration to work on delivering an integrated marine transportation system for liquid hydrogen.

PROMOTING GLOBAL MEASUREMENT AND REPORTING

The ability to address Scope 3 emissions would be enhanced by consistent global reporting systems that enable common calculation methodologies and the tracking of emissions between companies and across national boundaries.

- We participated in the **Ipieca Scope 3 Emissions Taskforce** which provides members the opportunity to convene and disseminate knowledge and good practice in the area of Scope 3 emissions, including categorisation, value chain emission analysis, Scope 3 measurement (incl. technology requirements) and reporting and engagement along the value chain.
- We reviewed and supported the creation of the **International Association of Oil and Gas Producers (IOGP)**, Oil and Gas Climate Initiative (OGCI) and Ipieca joint report on "Recommended practices for methane emissions detection and quantification technologies" as a committee member of the Ipieca methane taskforce.

1 OGMP, 2023. "Implementation Plan Guidance", p. 2 https://ogmpartnership.com/wp-content/uploads/2023/02/OGMP-2.0-Implementation-Plan-Guidance_2.pdf. OGMP provides the OGCI collective average target for upstream operations as an example of 'near zero' emissions intensity.

4.0 CAPITAL ALLOCATION



When used to generate electricity gas typically produces half the emissions of coal.

Capital alignment

Our capital alignment approach explains how we consider the climate-related risks and opportunities of new material investments including analysis of their alignment with 1.5°C pathways.

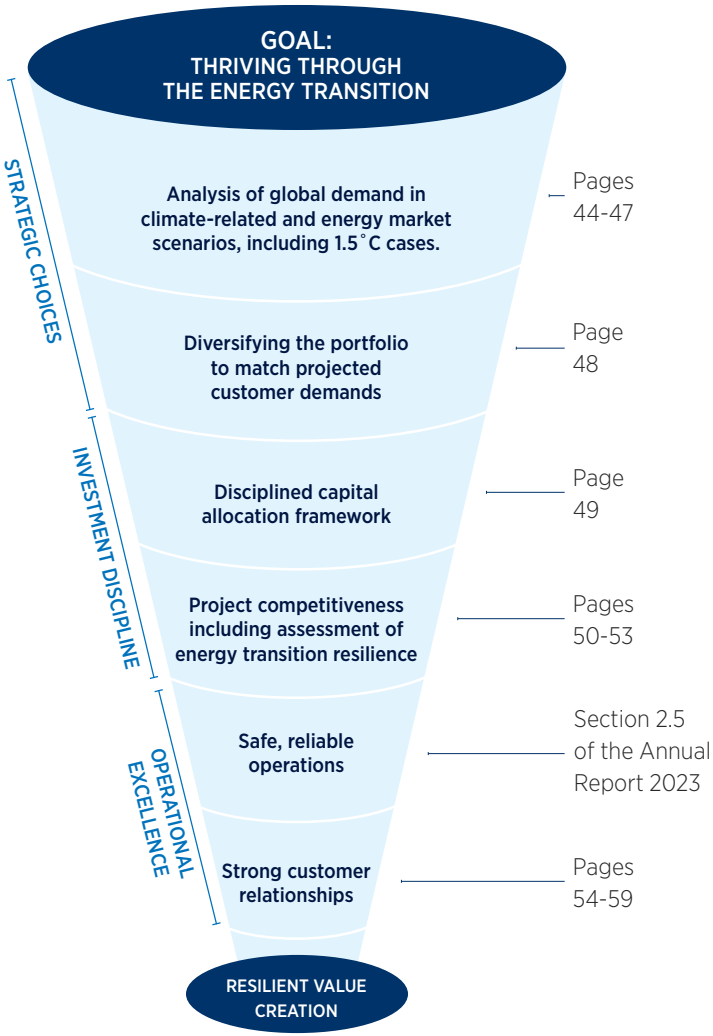
The use of fossil fuels for energy accounts for around three quarters of total anthropogenic greenhouse gas emissions.[1] This means that efforts to meet climate change goals must include changes to the way that the world produces and consumes energy. These changes are referred to as the 'energy transition'.

The precise shape and pace of the energy transition is uncertain. It is expected to vary across countries because they have different starting points, development requirements, resources and capabilities. However, the scale of the transition is clearer, as it will take many trillions of dollars, invested over decades. The International Renewable Energy Agency (IRENA) estimates it will require $150 trillion of cumulative investment by 2050.[2]

Whilst the scale of the investment required for the energy transition creates opportunity for Woodside, its inherent uncertainty and potential volatility creates risks. We believe that acknowledging the uncertainty and building resilience to it is a better response than picking a single future scenario and acting as if it were certain.

This approach requires us:

- to carefully analyse a wide range of energy market and climate-related scenarios,
- diversify our portfolio to meet changing customer demand,
- have a disciplined capital allocation framework to focus our investments where we believe we will be most competitive,
- work diligently with our customers to understand and meet their needs so that ultimately we secure their purchase of our products and services.



1 IEA, 2021. "Net Zero by 2050: A Roadmap for the Global Energy Sector", pp. 13. All rights reserved.
2 IRENA, 2023. "World Energy Transitions Outlook 2023: 1.5°C pathway", International Renewable Energy Agency, Abu Dhabi. p. 25.

Global demand for oil and gas

Woodside's strategy to thrive through the energy transition starts with acknowledging the uncertainty in its precise future course, and building resilience in our portfolio. We believe this is a better response than picking a single future scenario and acting as if it were certain.

GLOBAL OIL AND GAS USE

According to the United Nation's Intergovernmental Panel on Climate Change (IPCC), there are multiple feasible and effective options available to reduce greenhouse gas emissions and adapt to human-caused climate change.[1]

In 2023, the IPCC concluded its Sixth Assessment Report.[2] It found that there are many pathways that can limit warming to within the goals of the Paris Agreement. These include 97 pathways that can limit warming to 1.5°C with no or limited overshoot (modelled global emissions pathways Category C1, the most ambitious subset assessed by the IPCC).[3]

The report also includes pathways with a 50% or greater probability of returning warming to 1.5°C after a high overshoot (C2), a 67% or greater probability of limiting warming to 2°C (C3) and other higher temperature outcomes up to those exceeding 4°C (C8).

Demand for oil and gas remains through the remainder of this century in all of these pathways, but to varying degrees. Different variables contribute to the temperature outcomes in these pathways. For example, C1 pathways with higher gas use typically also have higher uses of CCUS.[4]

The range of oil and gas use in each of the particular temperature outcome pathways arises because choices in one sector can be compensated for by choices in another while being consistent with the same assessed level of global warming.[4] The level of global oil and gas use is an important but not sole determinant of temperature outcomes. Other influential factors include coal use, total primary energy use, emissions from outside the energy sector and levels of abatement and carbon dioxide removals.

Moreover, it is expected that different options will be pursued by different countries consistent with what the Paris Agreement calls "the principle of equity and common but differentiated responsibilities and respective capabilities, in the light of different national circumstances".[5]

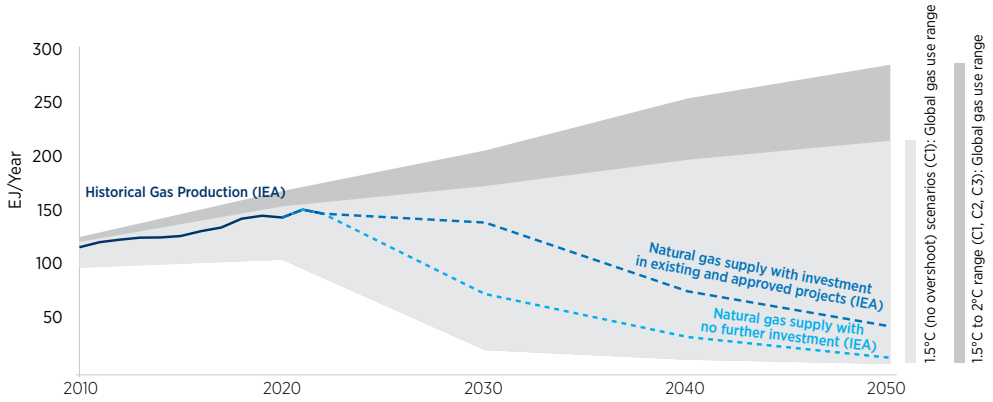
IN KEEPING WITH THE SCIENCE

At the COP28 global climate summit, world governments agreed to "transitioning away from fossil fuels in energy systems, in a just, orderly and equitable manner, accelerating action in this critical decade, so as to achieve net zero by 2050 in keeping with the science".[6] In this section we explore the implications for oil and gas demand of transitioning "in keeping with the science". Further information about the proceedings of COP28 is provided on page 65.

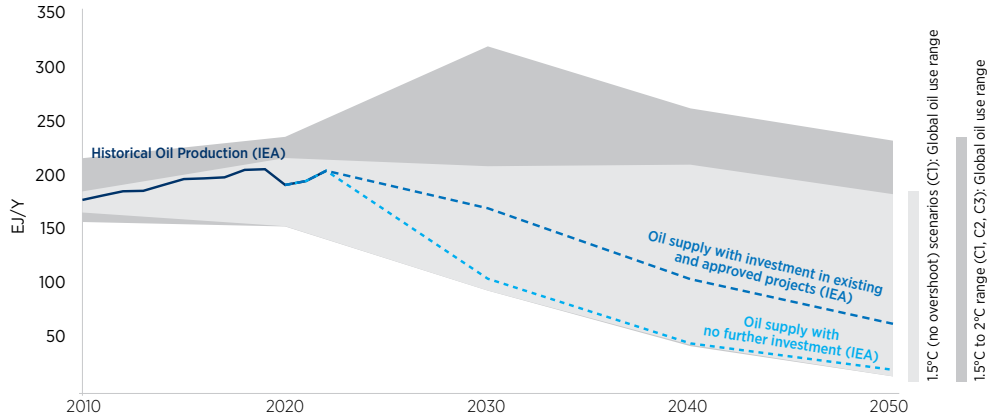
The charts (next page) plot the ranges for gas and oil use respectively in the IPCC's C1 and C1 - C3 categories.[7] They also show the IEA's cases for gas and oil supply respectively, both in the absence of any further investment, and in the case where investment is limited to existing and approved projects.[8] In these cases, supply falls due to the depletion of existing fields. The charts show that whilst there are some pathways in the IPCC C1 category which have levels of oil and gas use consistent with those that do not require additional investment, there are other pathways with higher levels of oil and gas use that have the same probability of this temperature outcome.

1 IPCC, 2023. "Urgent climate action can secure a liveable future for all", https://www.ipcc.ch/report/ar6/syr/downloads/press/IPCC_AR6_SYR_PressRelease_en.pdf.
2 IPCC, 2023. "Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change", [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, doi: 10.59327/IPCC/AR6-9789291691647, https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_FullVolume.pdf - referred to in subsequent footnotes on this page as IPCC, 2023. "AR6-SYR".
3 Overshoot means the temporary exceedance of a specified level of global warming, such as 1.5°C. Overshoot implies a peak followed by a decline in global warming, achieved through anthropogenic removal of CO_2 exceeding remaining CO_2 emissions globally.
4 IPCC 2022. "Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change". Summary for Policymakers paragraph C.3.2.
5 UNFCCC, 2015. "Paris Agreement", Preamble. https://unfccc.int/sites/default/files/english_paris_agreement.pdf.
6 UNFCCC, 2023. "Outcome of the first global stocktake" (Advance unedited version). https://unfccc.int/documents/636584, Section II, Subsection A, Clause 28.(d)
7 IPCC, 2022. "AR6-WG3" pp. 78. doi: 10.1017/9781009157926.002. See Glossary for full reference.
8 IEA, 2023. "The Oil and Gas Industry in Net Zero Transitions", https://www.iea.org/reports/the-oil-and-gas-industry-in-net-zero-transitions, License: CC BY 4.0.

Potential global use of gas in pathways that limit warming[1,2,3]



Potential global use of oil in pathways that limit warming[1,2,3]



1 Charts utilise IPCC ranges for oil and gas usage in scenarios that have a 50% or greater probability of limiting warming to 1.5°C with no or limited overshoot (C1), a 50% or greater probability of returning warming to 1.5°C after a high overshoot (C2), a 67% or greater probability of limiting warming to 2°C (C3) from AR6-WG3. IPCC data representing outlooks for Primary Energy Oil and Primary Energy Gas was sourced from AR6 Scenarios Database, see full citation in Glossary.

2 IEA, 2023. "The Oil and Gas Industry in Net Zero Transitions", https://www.iea.org/reports/the-oil-and-gas-industry-in-net-zero-transitions, License: CC BY 4.0.

3 Data points sourced from the IPCC includes 2010, 2020, 2030, 2040 and 2050. Historical data from the IEA is provided on an annualised basis. Forward looking data from the IEA includes 2030, 2040, 2050. Woodside has used interpolation of the IEA and IPCC data points in intervening years. This is a work derived by Woodside Energy Ltd from IEA material and Woodside Energy Ltd is solely liable and responsible for this derived work. The derived work is not endorsed by the IEA in any manner. IEA data was converted to exajoules using conversion factors obtained from the IEA report; The Oil and Gas Industry in Net Zero Transitions, IEA 2023. IEA and IPCC scenarios are not predictions or forecasts and are representative of views of the future. Woodside's approach to analysing and assessing future energy market conditions is based on qualitative and quantitative factors and may vary from any one scenario presented by the IEA or IPCC.

4 IPCC, 2023. "Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change" [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, doi: 10.59327/IPCC/AR6-9789291691647, https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_FullVolume.pdf - referred to in subsequent footnotes on this page as IPCC, 2023. "AR6-SYR"

USE OF SCENARIOS

There are many different scenarios and methodologies for producing them. Typically they are not forecasts, but they can provide a view of different potential futures – if used in the right application with an awareness of their underlying approach, assumptions, limitations and inputs.

IPCC Sixth Assessment Report

In its Sixth Assessment Report, the IPCC assessed a wide range of modelled global emission pathways and scenarios from the literature.[4] The IPCC's approach enables consideration of the potential range for global use of oil and gas in pathways that could limit warming to a number of given temperature outcomes, including 1.5°C. The IPCC's reports are also used to inform the development of global and national policies, for example at the recent COP28 climate summit in the UAE.

IEA scenarios

Woodside also utilises IEA scenarios, for example in the financial analysis on pages 52-53 of this report. This is because (unlike the IPCC's reports) they assess the supply of energy as well as the demand for it, and therefore are able to publish price assumptions which are required for financial analysis. The three IEA scenarios from the World Energy Outlook are not forecasts and they are one pathway to each of three distinct temperature assessments. However, they cover a wide range of potential global temperature outcomes, which makes them appropriate for scenario analysis that is intended to test resilience.

In addition to the three scenarios in its World Energy Outlook, the IEA also provides cases which show the potential future supply of oil and gas, both with investment in existing and approved projects and without. These cases attempt to show the impact of companies investing in their current sources of supply and the potential need to invest in supplies in order to replenish those that are depleted. These cases have been used alongside IPCC temperature pathways in the charts (left).

Woodside considers the IPCC and IEA approaches to be suitable for these purposes because they are independent global sources which publish information about their scenarios so that users can independently assess their assumptions and application. Woodside does not assign likelihood or probability to the eventuation of these scenarios, ranges or part thereof.

Woodside planning assumptions

By contrast, the assumptions used for Woodside's internal business planning, such as for investment decisions and asset valuation, require a broader range of inputs. These inputs include consideration of climate-related factors, including both Paris-aligned and non Paris-aligned outcomes. They must also include other factors such as economic growth, inflation, exchange rates, interest rates and geopolitics. They consider the specific role of LNG (as opposed to aggregate gas use) and regional differentiations (as opposed to globalised data). Together these factors can inform a broad based consideration of risks, opportunities, competitiveness and resilience. They contribute to understanding the potential impact of climate-related risks alongside other risks on our strategy, business and financial planning.

The evolving role of natural gas

Natural gas is a versatile energy source that plays a significant role in various industries.

Current uses of gas include power generation, heating, and chemical feedstock. According to a global gas demand analysis in 2022, the power sector accounted for 34% of global demand, while the industrial sector accounted for 27%. Residential use accounted for 15%.[1]

Electricity generation fuelled with natural gas typically releases about half the lifecycle amount of greenhouse gases compared to electricity generation fuelled with coal.[3] Additionally, natural gas-fired electricity generation offers a flexible means of providing support to batteries and help stabilise the power grid during periods of decreased renewable energy production (e.g. at night, and when the wind is calm).

Industrial uses of gas centre around its role as:

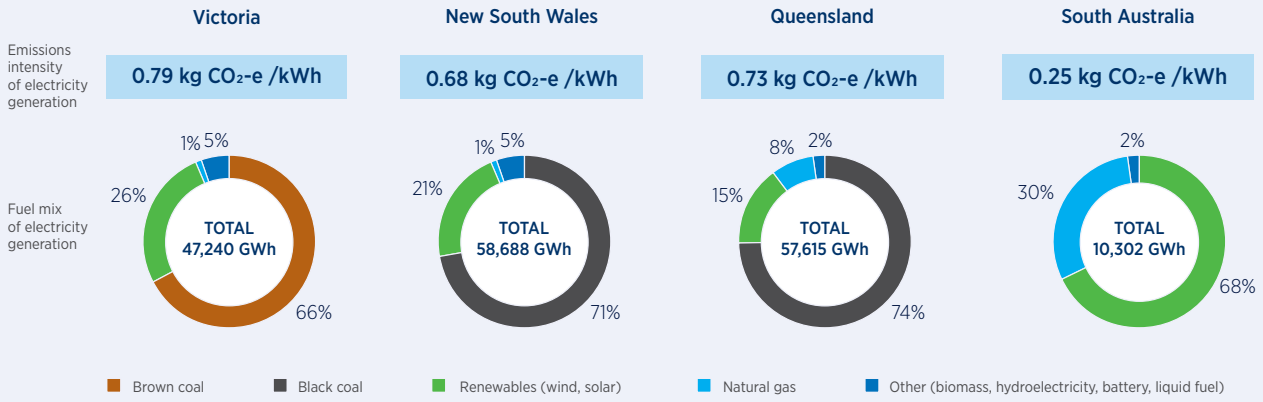
- A feedstock for ammonia and methanol production, which are used for fertilizer and consumer goods manufacturing, among other processes that fuel economic growth and an increasing population.
- A source of hydrogen production for the refining and chemical industries.
- A source of heat for high-temperature industrial processes, such as producing aluminium, ceramics, cement, glass, and steel. Due to its high energy density and controllable combustion characteristics, gas is particularly suitable for generating high temperature heat which may not be achievable through direct electrification.[2]

Woodside expects that natural gas will continue to have such a transitional role, sustaining demand for the period which is relevant to our current portfolio of producing assets and sanctioned projects as well as for further growth opportunities.

The use of gas in power grids that are decarbonising

Australia's National Electricity Market serves as an example of how a gas-renewables mix can generate power at lower emissions intensity than a coal-dominated mix. Power generation in South Australia is mainly from renewables with nearly one third from gas, and has only a third of the emissions intensity of power generation in Victoria, which relies mainly on brown coal.

Emissions intensities and fuel mixes in the national electricity market[4,5]



Note: Percentages may not total 100% due to rounding.

1 International Gas Union, 2023. "Global Gas Report 2023", p. 22. https://www.igu.org/resources/global-gas-report-2023-edition/
2 International Gas Union, 2023. "Global Gas Report 2023", pp. 76-77. https://www.igu.org/resources/global-gas-report-2023-edition/
3 IEA, 2019. "The Role of Gas in Today's Energy Transition", p. 4. All rights reserved.
4 Australian Department of Climate Change, Energy, the Environment and Water, 2023. "Australian National Greenhouse Accounts Factors." Electricity generation emissions intensities have been sourced from the emission factors in Table 1, pp. 7-8. These factors represent the emissions from the consumption of electricity purchased from a grid. https://www.dcceew.gov.au/sites/default/files/documents/national-greenhouse-account-factors-2023.pdf
5 Fuel mix percentages accessed online https://www.aemo.com.au/energy-systems/electricity/national-electricity-market-nem/data-nem/data-dashboard-nem using 12 months to 22 Jan 2023.

Regional focus — LNG in Asia

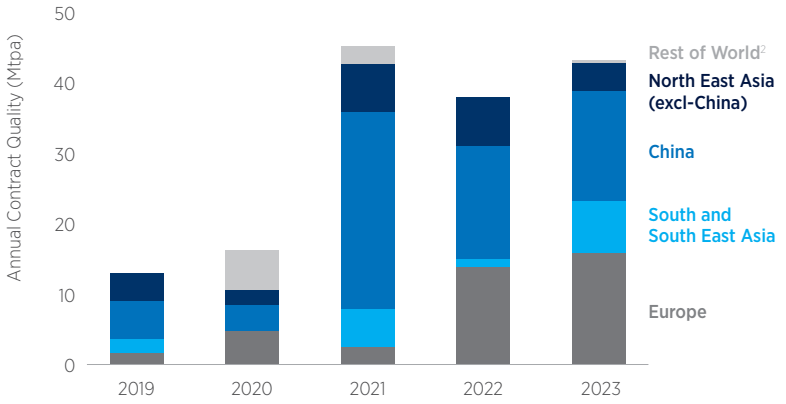
One of Woodside's competitive advantages lies in the proximity of our LNG operations to Asia. Asia is a prominent manufacturing and trade region that utilises LNG already but also relies heavily on coal for power generation, creating the opportunity for a further shift towards gas to support decarbonisation.

The chart (top right) shows that the Asia region (including China, North East Asia and South East Asia) is already the predominant global buyer of LNG. This has remained the case even after the increase of LNG use in Europe driven by the disruption to gas supplies following the Russian invasion of Ukraine.

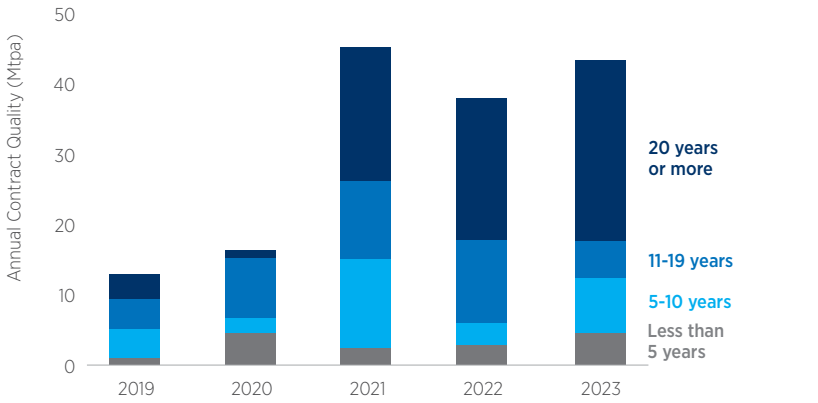
The chart (bottom right) highlights that LNG contracts continue to be signed with long durations – around half of the contracts signed in the past three years have a duration of 20 years or more. This signifies the confidence of both buyers and sellers in long term LNG demand – as does the 2023 purchase by LNG Japan of 10% equity and the 2024 purchase by JERA of 15.1% equity in the Scarborough Joint Venture.[1]

Woodside does not take this demand for granted and recognises that to convert aggregate demand into realised sales of our production, we need to carefully assess the competitiveness of our investment opportunities and work closely with customers to understand and support their needs. Our approach to this work is described in the next pages.

Global LNG contracts by destination[2]



Global LNG contracts by duration[2]



1 See announcements titled "Woodside to sell 10% Scarborough interest to LNG Japan" (8 August 2023) and "Woodside to sell 15.1% Scarborough interest to JERA" (23 February 2024) at woodside.com. Greenhouse gas emissions data including charts and estimates of future abatement plans in this Climate Transition Action Plan have not been updated to reflect changes in Woodside's equity share of the Scarborough Joint Venture as a consequence of the sale of 15.1% interest to JERA.

2 Wood Mackenzie, 2023. "LNG contract trends". Dataset includes global contracts by many producers, including Woodside. Only includes sale and purchase agreements. End-user contracts only. Rest of World refers to South America, Middle East & Africa and North America.

Managing uncertainty through diversification

Woodside's strategy is to diversify and adapt, rather than choosing a single course in advance and acting as if the energy transition were more certain than it is.

Woodside is working to diversify its portfolio by adding new products and services alongside our existing products, where we believe we have a competitive advantage to supply them successfully through the energy transition. They each bring different qualities to the portfolio.

Natural gas

Asia has more than half of the world's people and is growing.[1] Across Asia many countries are still heavily reliant on coal which accounts for approximately 50% of total energy supply in the Asia Pacific.[2] Woodside's LNG is located close to demand centres which enables lower shipping emissions.[3] LNG typically offers longer-term cash flows and lower Scope 3 intensity (but higher Scope 1 intensity) than the oil projects in Woodside's portfolio.

Oil

Oil demand is expected to decline as its use in light passenger transport is substituted by vehicle electrification.[4] Demand in petrochemicals and heavy transport is likely to be resilient for longer. The range of oil use in 2050 in the IPCC's C1 to C3 (1.5°C to 2°C) range is 15 to more than 230 EJ per year.[5] In 2022 oil consumption was 168 EJ.[4]

Oil projects tend to provide higher cash and higher returns, lower Scope 1 and 2 emissions (though higher Scope 3) and shorter term paybacks than the LNG projects in Woodside's portfolio. The global oil market is commoditised and as a result changes in demand are likely to be reflected in oil prices. This, in turn, affects investment in supply, which should moderate accordingly.

The case for continued exploration

Further greenfield exploration for oil and gas resources has the potential to highgrade our portfolio and improve our ability to thrive through the energy transition.

New resources that are more competitive – for example, lower cost, lower carbon, or closer to infrastructure – than other existing global discovered resources are more likely to attract investment to meet the available demand for oil and gas.

This is not new in the oil and gas industry. Within the Woodside portfolio, the Pluto gas field was not discovered until 2006 but has been developed ahead of resources that had already been discovered at that time, in some cases for decades.

CCS

CCS is a mature technology which represents a proven solution to abate large-scale industrial emissions. Globally, CCS has been successfully used for decades, in particular in support of enhanced oil recovery (EOR) but is now being utilised for permanent emissions storage.[6] The skills and capabilities required to store carbon dioxide in geological formations are similar to those needed to find and produce oil and gas.

New energy

New fuel types such as hydrogen and ammonia have the potential to decarbonise hard to abate sectors which are difficult to electrify (such as in heavy transport, chemical feedstocks, or in steel and alumina). They also have the potential to firm renewables as a substitute to natural gas where batteries lack scale and longevity. Transporting and containing these fuels in bulk requires similar expertise to that which Woodside already applies in the LNG industry.

1 United Nations, 2022. "World Population Prospects 2022: Summary of Results", Table 1.1, https://www.un.org/development/desa/pd/sites/www.un.org.development.desa.pd/files/wpp2022_summary_of_results.pdf.
2 IEA, 2020. "Asia Pacific: Region profile, Total energy supply 2020", https://www.iea.org/regions/asia-pacific.
3 Shorter journeys are associated with lower shipping related emissions.
4 IEA 2023. "World Energy Outlook 2023." All rights reserved.
5 AR6 Scenarios Database hosted by IIASA, International Institute for Applied Systems Analysis, 2022. doi: 10.5281/zenodo.5886911, https://www.data.ece.iiasa.ac.at/ar6/.
6 IPCC, 2022. "Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change" Summary for Policymakers paragraph C.4.6.

Capital Allocation Framework

We expect all of these products and services to be in strong demand in the decades ahead. However, we can only supply them profitably where we have customers who want to buy them and find them affordable. Whilst oil and gas markets are strong today, demand for new energy and CCS is still emerging. Therefore, we need to invest with discipline, testing our opportunities against our capital allocation framework.

Woodside's disciplined capital allocation approach includes robust assessment of opportunities, portfolio outcomes and shareholder returns while maintaining focus on safe, reliable and efficient operations.

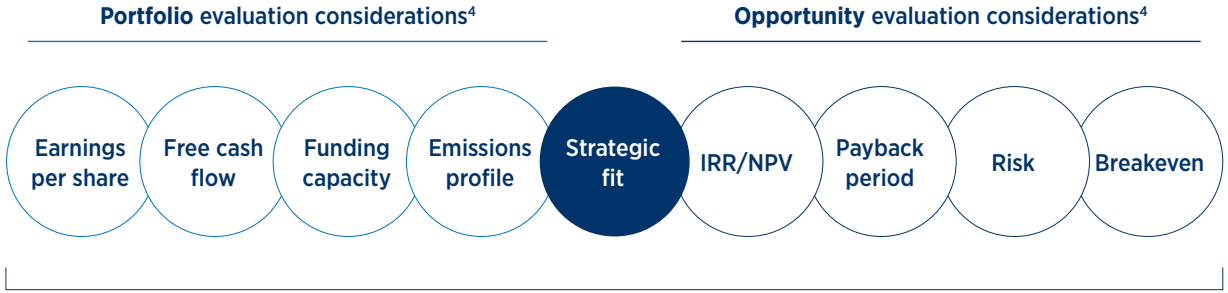
Our capital allocation framework sets target investment criteria for oil, gas and new energy opportunities. We use this capital allocation framework to create a diversified and flexible portfolio, which allows us to respond to changes in demand and supply for our products.

For example, they are informed by energy market analysis including supply, demand and price outlooks. We test the robustness of potential investments against a range of scenarios to support our investment decisions with the goal of remaining profitable and resilient through various commodity cycles and climate outcomes. The assessment of an investment's resilience to the energy transition is described on the following two pages.

Capital Allocation Framework

	OIL	GAS		NEW ENERGY
	OFFSHORE	PIPELINE	LNG	DIVERSIFIED
Focus	Generate high returns to fund diversified growth, focusing on high quality resources	Leveraging infrastructure to monetise undeveloped gas, including optionality for hydrogen		New energy products and lower carbon services to reduce customers' emissions; hydrogen, ammonia, CCUS[1]
Characteristics	High cash generation Shorter payback period Quick to market	Stable long-term cash flow profile Resilient to commodity pricing	Long-term cash flow Strong forecast demand Upside potential	Developing market Lower capital requirement Lower risk profile
Opportunity targets	IRR > 15% Payback within 5 years[2]	IRR > 12% Payback within 7 years[2]		IRR > 10% Payback within 10 years[2]
Emissions reduction	Net equity Scope 1 and 2 greenhouse gas emissions: target 30% reduction by 2030; aspiration for net zero by 2050 or sooner[3]			

When assessing opportunities, we consider a broad range of portfolio evaluation and opportunity evaluation factors relevant to the opportunity. These assessments can apply to acquisitions or divestments, and for evaluating the impact of a new project on the portfolio.



1 CCUS refers to carbon capture utilisation and storage.
2 Payback refers to RFSU + X years.
3 Targets and aspiration are for net equity Scope 1 and 2 greenhouse gas emissions relative to a starting base of 6.32 Mt CO_2-e which is representative of the gross annual average equity Scope 1 and 2 greenhouse gas emissions over 2016-2020 and which may be adjusted (up or down) for potential equity changes in producing or sanctioned assets with a final investment decision prior to 2021. Net equity emissions include the utilisation of carbon credits as offsets.
4 Illustrative of the considerations. Not an exhaustive list.

Assessing investment decisions for transition resilience

As demand changes through the energy transition, Woodside will carefully assess the competitiveness of new projects prior to investment decision.



We have developed a 'transition case' methodology which, like a business case and a safety case, helps us to manage risk by assessing investment opportunities across a range of climate-related factors. There are currently six elements to our transition case methodology, which was first applied to the final investment decision for the Trion development in the Mexican segment of the Gulf of Mexico in 2023.

It is not expected that an individual project can be judged against a single 'pass or fail' test on any of these attributes. In fact, some of them may be in opposition: an oil project may have lower Scope 1 emissions but higher Scope 3 emissions than a gas project, and vice versa. What matters is whether the overall resilience of the Woodside portfolio remains within our risk appetite, after the investment decision is taken.

This transition case methodology continues to be developed, and was retrospectively applied to the Scarborough development, for information purposes in the table on page 51.

Transition case for oil and gas investments.

We consider:

1. **Investment attractiveness** utilising a range of economic assumptions informed by climate scenarios as well as other factors such as geopolitics and macroeconomics.
2. **Cash flow scenario analysis impact** by comparing the impact 'with and without opportunity' on future cash flows using scenarios, including a 1.5°C case.
3. **Potential demand resilience analysis** considering the competitiveness of the project's cost of supply relative to the range of demand in IPCC scenarios, including 1.5°C cases.
4. **Climate-related risks and opportunities** by comparing the impact 'with and without opportunity' on our portfolio aggregate climate risk exposure.
5. **Scope 1 and 2 portfolio emissions** assessing the impact of 'design out' work on project emissions, and of residual emissions upon portfolio emissions abatement demand, and portfolio emissions intensity.
6. **Scope 1, 2 and 3 portfolio emissions intensity** by comparing the impact 'with and without opportunity' on our portfolio.

Trion oil development and Scarborough gas development

To illustrate the application of the transition case methodology in assessing the resilience of an investment decision to the energy transition, this table summarises the outcome of the Trion transition case considered during its final investment decision. We have also retrospectively applied the methodology to the Scarborough project.

Transition case	Trion (at FID)	Scarborough Project (retrospective)
1. Investment attractiveness	• Expected >16% IRR and <four-year payback period, exceeding capital allocation framework targets[1] • Expected all-in breakeven of <US$50/bbl (<US$43/bbl excluding capital carry) • Woodside's economic assumptions include our view of credible future scenarios[2]	• Expected >13.5% IRR and approximately six-year payback period, exceeding capital allocation framework targets[7] • Expected all-in cost of supply of approximately US$5.80/MMBtu[7] • Woodside's economic assumptions include our view of credible future scenarios[2]
2. Cash flow scenario analysis	• Forecast portfolio cash flow resilience is tested against IEA NZE pricing[3]	• Forecast portfolio cash flow resilience is tested against IEA NZE pricing[3]
3. Demand resilience	• Continued demand for oil expected across a range of pathways through the energy transition[4] • Two-thirds of resource is expected to be produced within the first 10 years after start-up	• Approximately 60% of Woodside interest in Scarborough volumes (P50) contracted at FID[8] • Subsequent to FID 10% equity was sold to LNG Japan and 15.1% to JERA demontrating mutual confidence in demand.[9]
4. Climate-related risks and opportunities	• No material changes to Woodside's exposure under TCFD framework due to a Trion investment	• Risk assessment undertaken covering climate-related issues such as regulatory and legal factors and informed by published scenarios
5. Emissions profile – Scope 1 and 2[1]	• Expected carbon intensity of 11.8 kg CO_2-e/boe average over life of field • Benchmarks below the industry average (15 kg CO_2-e/boe) for deepwater oil developments[5]	• Scarborough gas field contains less than 0.1% reservoir CO_2, low compared to other Australian projects[10] • Train 2 design will have lower GHG intensity (approximately 0.26 tCO_2-e/tLNG) compared to international average and Australian average[11] • Will be one of the lowest carbon intensity projects for LNG delivered to customers in north Asia[12]
6. Emissions profile – Scope 1, 2 and 3[1]	• Woodside portfolio remains less carbon intense than current industry average[6]	• Woodside portfolio remains less carbon intense than current industry average[6]

1 The forecast Trion IRR and payback period take into account the capital carry of approximately US$460m of capital expenditure for PEMEX (at Woodside's final investment decision). IRR and the payback period are a look forward from June 2023 and assume US$70/bbl (real terms 2022) Brent oil price. Payback period is calculated from undiscounted cash flows, RFSU + approximately 4 years.
2 For information about Woodside's planning assumptions please see page 45.
3 For information about Woodside's scenario analysis testing of portfolio cash flow resilience please see pages 52-53.
4 Woodside, 2023. "Woodside Approves investment in Trion Development". Please refer to slide 10 titled "Global oil demand through the energy transition".
5 Wood Mackenzie Emissions Benchmarking Tool. Expected lower carbon intensity of 11.8 kgCO_2-e/boe is relative to the global deepwater oil average of 15 kgCO_2-e/boe and global oil average of 27 kgCO_2-e/boe averaged over the period 2022 to 2032. Refer to slide 11 of the Trion investment approval briefing pack at www.woodside.com for further information.
6 Woodside analysis, based on Woodside Scope 1, 2 and 3 emissions data for 2023 relative to the Transition Pathway Initiative oil and gas sector mean assessment date 30June 2023. https://www.transitionpathwayinitiative.org.
7 The Scarborough IRR, cost of supply and payback period assume Woodside equity of 73.5% in Scarborough, 51% in Pluto Train 2 and 90% in Pluto LNG; includes GIP's additional funding of -$835m of capital expenditure from the sell-down of Pluto Train 2 and payments due on FID to ExxonMobil and BHP. IRR and payback period are a look forward from January 2021 and assume US$65/bbl (real terms 2022) Brent oil price. The integrated Woodside cost of supply (real terms 2021) is based on a 10% rate of return (both upstream and downstream), includes shipping to north Asia and is a look forward from January 2020. Payback period is calculated from undiscounted cash flows, RFSU + approximately 6 years.
8 Woodside upstream equity interest at FID of 73.5%.
9 See announcements titled "Woodside to sell 10% Scarborough interest to LNG Japan" (8 August 2023) and "Woodside to sell 15.1% Scarborough interest to JERA" (23 February 2024) at woodside.com. Greenhouse gas emissions data including charts and estimates of future abatement plans in this Climate Transition Action Plan have not been updated to reflect changes in Woodside's equity share of the Scarborough Joint Venture as a consequence of the sale of 15.1% interest to JERA.
10 Scarborough Offshore Project Proposal. Dataset includes Barossa, Browse, Gorgon, Ichthys and Prelude. Where a range for reservoir CO_2 was disclosed for other reserves, midpoint value taken.
11 Scarborough gas processed through Pluto Train 2 (Scarborough Development Approved: Investor presentation 22 November 2021).
12 Wood Mackenzie. Emissions Benchmarking Tool.

Scenario analysis of Woodside's portfolio

Woodside's current portfolio is financially robust to a range of climate-related scenarios.[1]

Summary of insights

Woodside uses a range of climate scenarios to test the financial resilience of our portfolio of producing assets and sanctioned projects.

The analysis described here concludes that:

- The Woodside portfolio is free cash flow (FCF) positive for all relevant periods showing the resilience of the business including in the NZE scenario and the IEA Announced Pledges Scenario (APS) that are aligned with the Paris Agreement temperature goals.
- FCF from 2024-2027 is lower than 2028-2032 (under all three scenarios) due to high capital expenditure during this period for Scarborough, Pluto Train 2 and the Trion development.
- FCF peaks under all three scenarios in 2028-2032 as Scarborough and Trion are operating, and then declines consistent with the natural field decline of older assets within our portfolio and because the analysis assumes no new greenfield oil and gas investments by Woodside.
- Oil and gas prices are the key value drivers and have a greater impact on FCF through to 2040 than carbon pricing.

Scenario analysis methodology

In the analysis in this section, we use three scenarios from the IEA's 2023 World Energy Outlook (WEO) because they are publicly available and widely understood.[1] They cover a broad range of temperature outcomes, including a 1.5°C outcome as well as above 2°C outcomes. More information about different types of scenarios and how we use them is provided on page 45.

We use annual average FCF generation as the assessed metric because it is a measure of our ability to fund future capital investment and shareholder returns and is unaffected by accounting treatment.

Our analysis uses the most recent pricing assumptions from the IEA (in their World Energy Outlook 2023), and has included the Trion oil development in Mexico for the first time, following its final investment decision during the year.[2,3]

The analysis applies a price on carbon for all emissions that exceed the profile created by our regulatory obligations, our net equity Scope 1 and 2 greenhouse gas emissions reduction targets of 15% by 2025 and 30% by 2030, and our aspiration for net zero equity Scope 1 and 2 greenhouse gas emissions by 2050 or sooner.[4] The analysis is relatively insensitive to the carbon price impact upon Woodside's Scope 1 and 2 emissions.

The impact of carbon pricing upon Scope 3 emissions is accounted for in the demand (and therefore commodity price calculated) in each scenario by the IEA World Energy Model.[5] This commodity price impact is the cause of 95% of the variation between the scenarios.

We will continue to review the best form of scenario analysis to meet the requirements of climate-related disclosure standards.

1 See announcement titled "Woodside to sell 15.1% Scarborough interest to JERA" (23 February 2024) at woodside.com. Greenhouse gas emissions data including charts and estimates of future abatement plans in this Climate Action Transition Plan have not been updated to reflect changes in Woodside's equity share of the Scarborough Joint Venture as a consequence of the sale of 15.1% interest to JERA.
2 IEA, 2023. "World Energy Outlook 2023." All rights reserved. https://iea.blob.core.windows.net/assets/42b23c45-78bc-4482-b0f9-eb826ae2da3d/WorldEnergyOutlook2023.pdf
3 Modelled based on current equity assumptions within portfolio: Scarborough 90%, Pluto Train 2 51%, Trion 60%.
4 Targets and aspiration are for net equity Scope 1 and 2 greenhouse gas emissions relative to a starting base of 6.32 Mt CO_2-e which is representative of the gross annual average equity Scope 1 and 2 greenhouse gas emissions over 2016-2020 and which may be adjusted (up or down) for potential equity changes in producing or sanctioned assets with a final investment decision prior to 2021. Net equity emissions include the utilisation of carbon credits as offsets.
5 IEA, 2023. "World Energy Model Documentation". All rights reserved. https://iea.blob.core.windows.net/assets/ff3a195d-762d-4284-8bb5-bd062d260cc5/GlobalEnergyandClimateModelDocumentation2023.pdf

PORTFOLIO RESILIENCE: TESTED AGAINST CLIMATE SCENARIOS[1]



Oil price (US$/bbl, Brent)[2], North Asian LNG price (US$/MMBtu)[2] and Carbon price (US$/$tCO_2$-e)[3] average real 2022

IEA NZE	52	8	101	41	5	139	34	5	169	31	5	195
IEA APS	76	10	100	74	8	133	72	7	153	69	7	169
IEA STEPS	84	11	80	85	9	80	84	9	80	84	8	80

* 2019-2023 average real terms 2022 Brent price was US$74/bbl.

The IEA's WEO explores three main scenarios.[4] These scenarios are not predictions. The IEA does not have a single view on the future of the energy system. Woodside does not assign a likelihood or probability to any of these scenarios eventuating.

A summary of the scenarios is as follows:

- The Net Zero Emissions by 2050 (NZE) Scenario depicts a narrow but achievable pathway for the global energy sector to achieve net zero energy-related CO_2 emissions by 2050, by deploying a wide portfolio of clean energy technologies and without offsets from land-use measures. It is consistent with limiting the global temperature rise to 1.5°C (with at least a 50% probability) with limited overshoot.
- The Announced Pledges Scenario (APS) assumes that governments will meet, in full and on time the climate commitments they have made, including their Nationally Determined Contributions and longer-term net zero emissions targets. In this scenario, the temperature rise in 2100 is 1.7°C (with a 50% probability).
- The Stated Policies Scenario (STEPS) is designed to provide a sense of the prevailing direction of energy system progression, based on a detailed review of the current policy landscape. This scenario is associated with a temperature rise of 2.4°C in 2100 (with a 50% probability).

Further information on Woodside's use of scenarios for different purposes is available in section 4.2.

1 Modelled impact of climate scenarios on potential average annual free cash flow from current producing and sanctioned assets (not guidance). See announcement titled "Woodside to sell 15.1% Scarborough interest to JERA" (23 February 2024) at woodside.com. Greenhouse gas emissions data including charts and estimates of future abatement plans in this Climate Action Transition Plan have not been updated to reflect changes in Woodside's equity share of the Scarborough Joint Venture as a consequence of the sale of 15.1% interest to JERA.
2 Based on data from IEA, 2023. "World Energy Outlook 2023" as modified by Woodside analysis. Woodside used interpolation techniques to estimate Brent annual price points in between the years that the IEA disclose prices for. For gas pricing assumptions all non-contracted LNG volumes were assessed at IEA's Japan import price, as a proxy for North Asian LNG spot price. Woodside used interpolation techniques to estimate annual gas price points in between the years that the IEA disclose prices for. For oil linked LNG contracts, prices are derived from the Brent forecasts and the terms of the contracts.
3 Based on data from IEA, 2023. "World Energy Outlook 2023" as modified by Woodside analysis. The IEA only provide carbon prices from 2030 onwards. As a result, Woodside used a starting point of US$80/t CO_2-e consistent with internal carbon pricing. Woodside used the 2022 starting price point and the IEA's published 2030 and 2040 carbon prices for each scenario to interpolate annual price points through to 2040.
4 IEA, 2023. "World Energy Outlook 2023." All rights reserved. https://iea.blob.core.windows.net/assets/42b23c45-78bc-4482-b0f9-eb826ae2da3d/WorldEnergyOutlook2023.pdf

Customer relationships

The existence of strong demand for our products and the disciplined approach we take to capital allocation and climate-screening are pre-requisites to converting demand into sales. We also foster strong customer relationships based on reliable competitive supply.

PROJECT COMPETITIVENESS

Woodside's existing portfolio of assets has key strengths in the competition to supply our traditional markets. These include:

Location

The proximity of Woodside's Australian LNG operations to Asia is a competitive advantage for our business. We have four large LNG customer markets on our doorstep. Japan and South Korea are approximately 25% reliant on coal for their energy needs today.[1] China and India's reliance on coal is significantly higher at 61% and 43% respectively.[1] Closer to home, in Australia the National Electricity Market fuel mix in 2023 was 63% coal, and just 5% gas.[2] This indicates growth potential for gas as the National Electricity Market (NEM) transitions from coal towards an 82% renewables target (from today's 23%) and expands in size to meet emerging demand from vehicle electrification.[2]

Scale and flexibility

Woodside has a diverse and flexible marketing portfolio of supply and delivery points across both the Asia Pacific and Atlantic basins. We are actively looking for opportunities to grow our global supply portfolio and to build scale through cost competitive equity and third-party LNG.

Shipping

Our sales strategy is underpinned by ex-ship sales and strong, logistical capability. Woodside is advantaged through our long shipping position, which enables Woodside to create upside value through short-term trading and portfolio optimisation activities.

Lower carbon

Woodside continues to monitor the market on its appetite to pay a premium for lower carbon production. For example, regulatory frameworks such as the European Union's Carbon Border Adjustment Mechanism maybe an indication that policy will increasingly reward lower carbon production in the future. The CLEAN (Coalition for LNG Emission Abatement toward Net Zero) initiative announced by the United States of America, the Republic of Korea, Australia, the European Commission, and Japan at the LNG Producer-Consumer Conference 2023 is another example.[3]

CONTRACTING STRATEGY

We have taken the approach of layering contracts throughout market cycles to enable a balanced approach to revenue certainty with the opportunity for upside pricing, making strategic choices about the proportion of contracts to enter into relative to spot sales, and which benchmarks to link pricing to. Woodside's revenue is predominantly exposed to the oil price, with the remainder being fixed price or other low-volatility constructs, all linked to gas hub prices such as JKM or TTF. The strategic capability that has been established through decades of experience as a LNG marketer is the same capability that can navigate demand fluctuation in the energy transition.

The sale of 10% of the Scarborough Joint Venture to LNG Japan and of 15.1% to JERA was a clear expression of confidence in the importance of that project to Japan's energy security and decarbonisation goals.[4]

MARKETING

In addition to the intrinsic competitiveness of our products and our approach to contracting, Woodside maintains active representation in key markets in order to maintain relationships with buyers that are rooted in decades of trust, and a deep understanding of their needs.

In 2023, Woodside's climate and sustainability executives conducted a specific climate-related engagement roadshow to discuss the energy transition with sustainability executives in Tokyo and Osaka.

1 IEA, 2020. "IEA World Energy Balances", https://www.iea.org/regions/asia-pacific.
2 Fuel mix percentages accessed online https://www.aemo.com.au/energy-systems/electricity/national-electricity-market-nem/data-nem/data-dashboard-nem on using 12 months to 22 Jan 2023.
3 https://www.jogmec.go.jp/english/news/release/news_10_00041.html
4 See announcements titled "Woodside to sell 10% Scarborough interest to LNG Japan" (8 August 2023) and "Woodside to sell 15.1% Scarborough interest to JERA" (23 February 2024) at woodside.com. Greenhouse gas emissions data including charts and estimates of future abatement plans in this Climate Transition Action Plan have not been updated to reflect changes in Woodside's equity share of the Scarborough Joint Venture as a consequence of the sale of 15.1% interest to JERA.

Evidence from the market

Woodside monitors policy, regulatory and market developments for signposts to future demand for its products.

Australia-Japan Ministerial Economic Dialogue Joint Ministerial Statement, 8 October 2023[1]

"Ministers recognised that Australia and Japan's Special Strategic Partnership was stronger and more important than ever, underpinned by common values, deep economic complementarity, and enduring people-to-people links."

"**Australia has committed to remaining a reliable supplier** of resources and energy to Japan and the region now and into the future. This applies to traditional energy commodities such as coal and **liquefied natural gas (LNG), as well as new energy supply, hydrogen and ammonia, as countries decarbonise** their economies to meet their net-zero and Paris Agreement commitments. Ministers agreed to ensure the stable energy supply and to provide investment certainty in the transition period based on mutual trust."

"Ministers acknowledged the importance of following various pathways for energy transition while achieving economic growth, ensuring energy security, and addressing decarbonisation. **They noted the importance of LNG along with renewables and energy storage technologies in the energy transition.** Ministers recognised the importance of Australia's and Japan's energy relationship to both countries' economic, security and decarbonisation agendas."

LNG Japan's acquisition of 10% participating interest in the Scarborough Joint Venture in Australia[2]

Woodside has established a strategic relationship with LNG Japan which involves three elements: equity in the Scarborough Joint Venture, potential LNG offtake and collaboration on opportunities in new energy.

Woodside has entered into a sale and purchase agreement with LJ Scarborough Pty Ltd (LNG Japan) for the sale of a 10% non-operating participating interest in the Scarborough Joint Venture.

LNG Japan CEO Mr Kyo Onojima said he was excited to form the strategic relationship between LNG Japan and Woodside. "We are very pleased to join the Scarborough Joint Venture and are looking forward to finalising the LNG offtake agreement and exploring business opportunities in the new energy sector," he said.



National Policies

Japan – Sixth Strategic Energy Plan

"We will **pursue the shift to natural gas** on demand side and decarbonisation of gas through methanation and other means, which play a significant role in decarbonising heat demand. We will also work to further strengthen the resilience of gas."[3]

Korea – First NDC

"The Republic of Korea is seeking to dramatically phase down coal-fired power generation while ramping up renewable power. Aged coal power plants will be shut down or **shift their fuels from coal to Liquefied Natural Gas (LNG)**. The uptake of solar and wind power will be scaled up as well."[4]

"The Republic of Korea has markedly raised its 2030 target on the deployment of zero-emission vehicles such as the ones powered by electricity and hydrogen."[5]

China – Updated First NDC

"China will stringently curb coal-powered projects, set strict limitation on the increase in coal consumption over the 14 period and to phase it down in the 15th FYP period. The large scale development of wind and solar power will be accelerated, hydro power in accordance with local condition will be developed, nuclear power will be advanced in an ordered manner with the premise of ensured safety, and peaking power including energy storage and **gas-powered electricity will be stepped up rapidly**."

"China will push forward technological breakthroughs in various fields to support the green and low-carbon transition, such as renewable energy, hydrogen energy, smart grid and energy storage, CCUS, circular economy, low-carbon transportation and smart cities, climate change impact and risk assessment."[6]

1 Australian Government, 2023. "Australia-Japan Ministerial Economic Dialogue Joint Ministerial Statement", https://www.trademinister.gov.au/minister/don-farrell/statements/australia-japan-ministerial-economic-dialogue-joint-ministerial-statement.
2 Woodside, 2023. "Announcement Woodside to sell 10% Scarborough interest to LNG Japan", https://www.woodside.com/docs/default-source/asx-announcements/2023-asx/woodside-to-sell-10-scarborough-interest-to-lng-japan.pdf?sfvrsn=caa9b47f_3. Please note the sale of 15.1% of the Scarborough Joint Venture to JERA is also an example of mutual confidence in demand. See announcement titled "Woodside to sell 15.1% Scarborough interest to JERA" (23 February 2024) at woodside.com.
3 Ministry of Economy, Trade and Industry of Japan, 2021. "Outline of Strategic Energy Plan", p. 11, https://www.enecho.meti.go.jp/en/category/others/basic_plan/pdf/6th_outline.pdf.
4 The Republic of Korea, 2021. "Submission under the Paris Agreement: The Republic of Korea's Enhanced Update of its First Nationally Determined Contribution", p. 2, https://unfccc.int/sites/default/files/NDC/2022-06/211223_The%20Republic%20of%20Korea%27s%20Enhanced%20Update%20of%20its%20First%20Nationally%20Determined%20Contribution_211227_editorial%20change.pdf.
5 The Republic of Korea, 2021. "Submission under the Paris Agreement: The Republic of Korea's Enhanced Update of its First Nationally Determined Contribution", p. 3, https://unfccc.int/sites/default/files/NDC/2022-06/211223_The%20Republic%20of%20Korea%27s%20Enhanced%20Update%20of%20its%20First%20Nationally%20Determined%20Contribution_211227_editorial%20change.pdf.
6 China, 2022. "China's Achievements, New Goals and New Measures for Nationally Determined Contributions", p. 34, https://unfccc.int/sites/default/files/NDC/2022-06/China%E2%80%99s%20Achievements%2C%20New%20Goals%20and%20New%20Measures%20for%20Nationally%20Determined%20Contributions.pdf,

5.0 RISK MANAGEMENT



Gas can be used in the production of construction materials such as steel and concrete.

Risk management framework

Woodside is committed to managing all risks including climate-related risks in a proactive and effective manner. We apply a structured and comprehensive approach to the identification, assessment and treatment of current risks and in response to emerging risks.

Woodside recognises that risk is inherent in our business and the effective management of risk is vital to deliver our strategic objectives, continued growth and success. Our approach to risk management aims to enable us to take risk in return for reward, protect us against negative impacts and improve our resilience to emerging risks.

Our framework is aligned with the overarching principles of the International Standard ISO31000 for risk management, providing line of sight of risk at appropriate levels of the organisation, including the Executive Leadership Team and the Board, based on defined materiality thresholds.

Woodside's risk management process is presented as an iterative sequence that we undertake in a coordinated manner.

The process helps us implement risk management to effectively identify, assess, and control risks, thereby enhancing the likelihood of achieving our objectives. The process involves:

- communication and consultation with key stakeholders
- define risk scope, context and criteria
- risk assessment
- risk treatment
- monitor and review risk management process; and
- record and report risks.

Woodside's climate risks are managed in accordance with our risk appetite statement. As part of the iterative risk management process described above, materiality is determined using a range of factors, including the potential impact of the risk (in both financial and non-financial terms) and the likelihood of the risk occurring over various time horizons.

For more information on consideration of materiality for risk, please refer to section 3.10 of the Annual Report 2023.

A key objective of our approach is to provide a single consolidated enterprise-wide view of risk to quantify our exposure, and prioritise management and governance practices. Our assessment of risk considers both financial and non-financial exposures, including health and safety; environment; finance; reputation and brand; legal and compliance; social and culture.

Climate change is one of the seven strategic risks within Woodside's strategic risk profile, which is described in our Annual Report 2023.

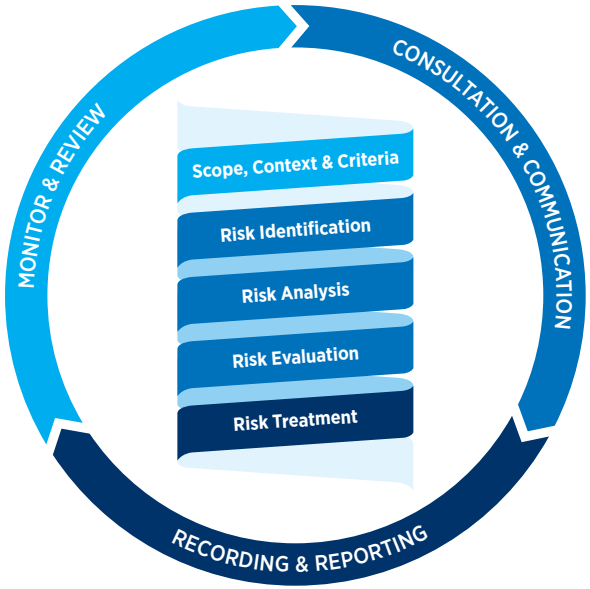
The Board and Executive Leadership Team review the strategic risk profile twice a year, including management of current risk and resilience to emerging risks. This means that the risk management framework described in this section is specifically applied to consideration of climate-related risks and opportunities. This includes the evaluation of climate-related risk, and communication of this evaluation to senior management, Executive Leadership Team and the Board.

Refer to Annual Report 2023 section 3.9 for information.

The risk management framework helps to provide an integrated and coordinated approach to the management of climate change across the business and that the risks posed by the transition to a lower carbon economy are recognised, including changes in policy, regulation or social expectations in current or future markets. This enables the prioritisation of risk, ensuring that the relative significance of climate-related risks alongside other risks is clear and addressed objectively.

The identified potential key climate-related risks and opportunities are described on pages 59-61 and a focus on physical risks is on pages 62-63.

Risk management process





Gas is used in a variety of high temperature industrial processes, such as the production of bricks and ceramics.

RISK APPETITE

Woodside's Risk Appetite Statement is a set of principles-based, qualitative statements that present a collective and aligned view of the Board's appetite to take risk in pursuit of our strategic objectives. It provides guidance to the executive and senior management team on the type and amount of risk that is acceptable and is intended to encourage conscious engagement and informed decision making, consistent with other company policies, including our Climate Policy.

OUR RISK AND COMPLIANCE BEHAVIOURS

Woodside recognises that when faced with challenge and uncertainty, it is the actions, behaviours and responses of our leaders at all levels that shapes our culture. In 2023, Woodside updated 'Our Risk and Compliance Behaviours' framework to provide guidance on the positive behaviours that promote a strong risk and compliance culture.

These behaviours recognise that the world we live and work in is constantly changing and we need to adapt in order to thrive as a business. They recognise the need to confront and embrace risk, challenge our conventional ways of working and make courageous decisions, while keeping each other safe, complying with the law and maintaining our social licence to operate.

RISK REGISTER

Woodside prioritises risk management actions and governance through use of risk register tools. The functionality within the register provides transparency and enhances the ability of senior leaders to effectively manage and govern climate-related risks, including checking that identified actions to address or manage risk have been closed out.

RISKS AND OPPORTUNITIES

The table (next 3 pages) describes the potential for climate-related risks and opportunities to impact Woodside's business, strategy, and financial planning, including potential impacts on both financial position and performance and potential mitigations. This does not necessarily mean that the risks have materialised in practice or that the mitigations are currently being pursued. The table is presented using the TCFD framework.

Key climate-related risks and opportunities

***Timeframe:**[1]
S: now to 2025 (short)
M: 2026-2035 (medium)
L: 2036 and beyond (long)

	Timeframe*			Type of potential impact	Potential financial impacts	Potential mitigations
	S	M	L			
Transition risks The global transition to a lower carbon economy may entail extensive policy, legal, technology and market changes in order for the world to address mitigation and adaptation requirements relating to climate change.				**Policy and legal risks**		
	✓	✓	✓	Exposure to litigation	• Increased operating costs • Deferred revenue from project startups due to delays to, or failure to obtain, regulatory approvals • Asset valuation changes • Legal costs and fines • Increased decommissioning costs • Shareholder divestment • Access to capital	• Adopt and deliver targets for net equity emissions reduction • Report in alignment with climate-related financial disclosure requirements in Australia and equivalent requirements in other jurisdictions we are active in and have a significant presence • Build a diverse carbon credits portfolio • Engage regulators and stakeholders • Monitor global policy and legal developments • Diversity of geographical footprint • Selldown in equity share
	✓	✓	✓	Delays to, or failure to obtain, regulatory approvals		
	✓	✓	✓	Increased pricing or other regulatory control of emissions		
		✓	✓	Mandates or controls on hydrocarbon product use or access to growth acreage		
	✓	✓	✓	Increased emissions reporting requirements		
				Technology		
	✓	✓	✓	Unsuccessful investment in new technologies	• Loss of research and development expenditure • Increased operating costs • Impact on revenue	• Technology collaboration and partnerships • Opportunity management process • Maintain internal capability with proven track record • Jurisdictional diversity for leveraging legislative incentives
		✓	✓	Higher than expected costs of transition to new technologies		
	✓	✓	✓	Overreliance on policy support to support commerciality		
		✓	✓	Technology disruption		
		✓	✓	Inability to develop at scale due to competition for resources, people or technology		
				Market		
		✓	✓	Faster than expected substitution of hydrocarbon products	• Lower demand for hydrocarbon, new energy or lower carbon services relative to investment case • Natural gas crowded out of carbon budget by coal and/or unable to achieve attractive pricing • Under or over investment in product portfolio components • Modified and unstable tax and fiscal settings • Stranded assets and associated impact on asset valuations	• Implement strategy to be a low cost, lower carbon company • Scope 3 emissions plan • Capital allocation framework • Customer and market engagement • Scenario analysis • Portfolio and market diversity • Carbon border adjustment mechanisms or related policy • Selldown in equity share
	✓	✓	✓	Slower than expected adoption of new energy and lower carbon services		
	✓	✓	✓	Slower than expected phase-out of coal		
		✓	✓	Uncertainty/regional variation in transition pathways		
		✓	✓	Demand destruction due to disorderly transition or being an unpreferred provider		
				Reputation		
	✓	✓		Increased stakeholder concern	• Increased operating costs • Increased capital costs • Exacerbated policy and legal risks • Impact on revenue • Inhibited growth • Shareholder divestment	• Adopt and deliver targets for net equity Scope 1 and 2 emissions reduction • Scope 3 emissions plan • Report in alignment with climate-related financial disclosure requirements in Australia and equivalent requirements in other jurisdictions we are active in and have a significant presence • Engage regulators and stakeholders • Sustainability planning and engagement
	✓	✓		Targets fail to meet stakeholder expectations		
	✓	✓		Stigmatisation of hydrocarbon energy sector		
	✓	✓		Constrained access to talent		
	✓	✓		Constrained access to capital		
	✓	✓		Inability to pursue range of climate-related pathways		
	✓	✓		Targeted extreme activism		

1 Woodside has selected these short, medium and long term timeframes reflecting the nature of its business. The short term period can impact its current producing assets and sanctioned projects; the medium term timeframe could impact on these current assets and sanctioned projects as well as opportunities under active evaluation but not yet subject to a final investment decision; and the long term timeframe could impact on both these categories of asset and project as well as opportunities beyond current consideration

	Timeframe*			Type of potential impact	Potential financial impacts	Potential mitigations
	S	M	L			
Physical risks Physical risks from climate change may have financial implications for organisations such as direct damage to assets and indirect impacts from supply chain disruption.				**Acute**		
	✓	✓	✓	Increased frequency, severity and/or duration of extreme weather events, such as tropical cyclones, hurricanes, rainfall, flooding, storm surge, lightning, squalls, bushfires and/or heat waves	• Damage to assets/reduced asset life • Decreases in production • Increases in emergency response-related costs • Supply chain and logistics disruptions and/or cost increases • Decreased workforce productivity • Underperformance of tree planting	• Design of facilities to withstand harsh operating environments • Equipment redundancy/sparing • Maintenance of safety critical equipment and control systems • Business and performance planning • HSE culture and procedures • Emergency response plans and procedures • Supplier relationship frameworks and diversification • Annual preventative bushfire maintenance and geographic diversity in carbon offset origination portfolio • Selldown in equity share
				Chronic		
		✓	✓	Longer-term shifts in climate patterns, such as warmer ambient temperatures, rising sea levels, coastal erosion, reduced water availability, and lower rainfall in tree planting areas	• Decreased production • Decreased workforce productivity • Increased operating and capital cost required to maintain current performance • Underperformance of tree planting	• Design of facilities to withstand harsh operating environments • Equipment redundancy/sparing • Maintenance of safety critical equipment and control systems • HSE culture and procedures • Geographic diversity in carbon offset origination portfolio • Desalination as technology option for access to water

More information on how Woodside manages physical risks, including in especially vulnerable locations (such as facilities located in harsh environments) can be found on pages 62-63.

	Timeframe*			Type of potential impact	Potential financial impacts	Potential enablers
	S	M	L			
Opportunities Efforts to mitigate and adapt to climate change also produce opportunities for organisations.	**Resource efficiency**					
	✓	✓	✓	Fuel gas savings diverted to sales gas	• Increased sales revenue • New revenue streams • Reduced operating costs	• Asset decarbonisation plans • Optimisation reference plans • Scope 3 emissions plan influencing suppliers
	✓	✓	✓	More efficient shipping fleet		
	✓	✓	✓	More efficient building stock		
	✓	✓	✓	Recycling of decommissioned materials		
	Energy source					
	✓	✓	✓	Use of renewable energy generation	• Increased production • Reduced operating costs • Reduced exposure to carbon costs	• Develop a new energy business • Design out emissions • Asset decarbonisation plans
	✓	✓	✓	Use of efficient technologies		
	✓	✓	✓	Use of energy storage		
	Products and services					
	✓	✓	✓	Diverse portfolio of products and services including natural gas in decarbonisation pathways	• Reduced demand side risk • Ability to achieve attractive pricing • Lower operating costs	• Capital allocation framework • Technology collaboration and partnerships • Portfolio diversity • Customer and market engagement
	✓	✓	✓	Development of new business lines		
	✓	✓	✓	New technologies for forecasting physical risk		
	Markets					
	✓	✓	✓	Use of public sector incentives	• Reduced development costs	• Engage regulators and stakeholders • Climate-related advocacy • Customer and market engagement • Partnerships to drive market development • Provisions in production agreements and MOUs
	✓	✓	✓	Collaborative partnership with customers, research institutions and broader industry organisations		
	✓	✓	✓	Access to new markets		
	Resilience					
	✓	✓	✓	Broader portfolio inclusive of oil, gas and new energy opportunities	• Diverse revenue streams • Better competitive position to reflect shifting consumer preferences	• Capital allocation framework • Adopt and deliver targets for net equity emissions reduction • Scope 3 emissions plan
	✓	✓	✓	Access to sustainable finance		
	✓	✓	✓	Decrease climate risk in the supply chain		
	✓	✓	✓	Capital allocations strategy to flex between product streams		

Managing physical risk

Woodside's assets are designed to withstand extreme weather events, we have specialised teams that support the safe and reliable design and operation of our facilities.

Physical risks can arise from both event driven (acute) and longer-term shifts (chronic) in climate patterns. These physical risks may have financial implications for organisations.

For example, in the oil and gas industry, this might include harsh weather or ocean conditions that can damage or disrupt the ability to safely operate offshore facilities, shipping and onshore processing plants. Woodside has decades of experience designing and operating facilities located in harsh environments.

Woodside's facilities are subject to oceanic conditions and are located in regions that experience tropical cyclones, hurricanes and high ambient temperatures.

Physical risks could also impact emerging new businesses in new energy products and lower carbon services. For example, this could include bushfire or drought risk for nature-based carbon origination projects, or access to water for use in electrolysis for hydrogen.

DESIGN OF WOODSIDE'S FACILITIES

Each Woodside facility is built in accordance with a basis of design (BOD). This details, amongst other things, the climatic conditions that facilities need to withstand. Each BOD is reviewed against updates to climatic conditions and, where required, actions are taken to update procedures or replace/refurbish equipment to withstand the revised conditions.

For new facilities and refurbishments, the requirements for maximum air temperature and sea level in the BODs are aligned to IPCC Shared Socioeconomic Pathway 2-4.5 (the SSP 2-4.5) in which global temperatures rise by 2.7°C by the end of the century. Design sensitivities are also performed against SSP 5-8.5 pathway in which global temperatures rise by 4.4°C. (Note that the BOD is intended to describe harsh environmental conditions that a facility may need to withstand, hence the alignment with and sensitivities for higher temperature outcomes by 2100 rather than 2°C or 1.5°C global temperature rise outcomes).[1]

Woodside designs its assets to withstand extreme weather events that occur in the range of 1 in 1,000 years to 1 in 10,000 years. This is also specified in each BOD.[2] These time periods and the approach of using IPCC SSPs has historically been used at heritage Woodside assets and will be incorporated across the merged portfolio for new assets.

WOODSIDE'S CAPABILITY

Some relevant teams within the Woodside organisation include:

Meteorology and Oceanography (Metocean)	Metocean specialists quantify the potential impact and effect of meteorological and oceanographic conditions on Woodside's facilities. This includes waves, climate variability, tropical cyclones, hurricanes, air temperature and rainfall. This analysis is used to define technical requirements for existing and new facilities.
Health, Safety and Environment	Health, safety and environment specialists support the business by providing guidelines on safe operating conditions. Examples include the wellbeing of people working in high ambient temperature environments and maintenance of safety critical systems and equipment.
Asset Management	Asset management teams are responsible for managing asset specific risks, such as structural integrity risks from weather related events and risks to production forecasts from weather related outages. Regular risk governance meetings are held to review the management of these risks.
Emergency Management	Emergency management specialists support the business in the development of emergency response plans and capabilities and with response to any emergency events. This includes preparation for and response to tropical cyclones and hurricanes.

1 This is based on outputs from the Coupled Model Intercomparison Project (CMIP). CMIP coordinates climate model simulations worldwide under the World Climate Research Program (WCRP). CMIP supports the IPCC Shared Socioeconomic Pathways. These Shared Socioeconomic Pathways explore the implications of future socioeconomic development on climate change mitigation, adaptation and land use.
2 Acquired assets are not designed by Woodside and the historic asset owner may have specified different extreme weather events in the BOD. Ruby and Angostura were both designed to withstand extreme weather events that occur in the range of 1 in 100 years.

EXAMPLES OF PHYSICAL RISK MANAGEMENT

Cyclones or hurricanes

Climate change is expected to lead to more frequent and/or more severe cyclones or hurricanes. These have the potential to damage equipment, cause increased production outages and/or reduce asset life.

Woodside has assets that have operated in cyclone or hurricane affected regions for decades. These onshore and offshore assets are designed and maintained for safe operations in extreme conditions.

Procedures are in place for pre-cyclone/hurricane season readiness, for preparations immediately prior to a tropical cyclone, and for disconnection and demobilisation to keep people and assets safe during cyclonic events.

The design and maintenance of assets and the emergency response procedures were tested during the severe Tropical Cyclone Damien in the North West of Australia in February 2020 and during Hurricane Ida in the Gulf of Mexico in August 2021. No major damage occurred and normal production levels was resumed following these events.

Production planning and forecasting includes assumptions for cyclones/hurricanes and severe swells. These assumptions are informed by data from previous seasons along with forecasts for upcoming El Niño and La Niña cycles.

Rainfall, flooding or drought

Climate change is expected to lead to changes in rainfall volume and intensity. This could cause flooding or drought, which might impact Woodside's facilities and/or carbon origination projects.

Drainage systems on Woodside's facilities are designed to meet relevant international and Australian standards. In regions impacted by cyclones, drainage and containment systems are also inspected prior to cyclone season, as there may be intense rainfall or flooding during this season.

Exposure to drought risk and flooding in our carbon origination projects is managed by holding a diverse geographic distribution of projects.

Bushfires

Climate change is expected to lead to increased frequency and/or severity of bushfires due to hotter and/or drier climates.

Where Woodside operates oil and gas producing assets located in bushfire-prone areas, it incorporates bushfire preparation as a standard part of emergency response planning. In addition, the geographical locations of many of our oil and gas producing assets have inherently lower exposure to bushfire risk, for example, because they are surrounded by shrubs/rock or are offshore.

Woodside's carbon origination portfolio includes planting trees. Diversity in tree planting locations reduces the potential impacts of bushfire risk on the portfolio.

Warmer ambient temperatures

Climate change is increasing ambient temperatures. This could create hotter working conditions, impacting the wellbeing of our people and the operability of some equipment.

The health and wellbeing of our people is inherent in our culture and operational practices. For example, sun protection and hydration are regularly included as topics in site communications and safety briefings. Facilities in the North West of Australia experience high ambient temperatures. Major maintenance campaigns, where the number of people on site is significantly increased, are targeted for execution in the cooler months to minimise exposure to heat stress.

Production planning and forecasting includes assumptions for ambient temperature, recognising that higher ambient temperatures can reduce plant performance.

Rising sea levels and storm surge

Climate change is resulting in an increase in sea levels with the potential to impact offshore and coastal facilities.

Woodside's facilities are designed in accordance with BODs, which include sea level assumptions where relevant for the facility. An allowance for sea level rise is included in the calculations of extreme total water level (the combination of sea level, tidal elevation, storm surge and wave crest elevation). The assumptions for sea level in the BOD documents are based on IPCC Shared Socioeconomic Pathways.[1,2]

Storm surges in the Karratha region in the North West of Australia are also included in cyclone preparation plans.

1 The IPCC Shared Socioeconomic Pathways explore the implications of future socioeconomic development on climate change mitigation, adaptation and land use.
2 The approach to using IPCC SSPs in this paragraph has historically been used at heritage Woodside assets, and will be incorporated across the merged portfolio over time.

6.0 ENGAGEMENT



Policy engagement

Woodside aligns its advocacy to support the goals of the Paris Agreement. We also review our membership of industry associations and encourage them to align their positions and advocacy activities with the goals of the Paris Agreement.

CONSTRUCTIVE DIALOGUE AND DIVERSE VIEWS

Woodside transparently discloses its advocacy, including the submissions that it makes to government. We also have periodically published a review of our industry association memberships and their activities.

We acknowledge that not everyone shares our views, for example about the role of natural gas in the energy transition, just as some people will debate the desirability of nuclear power, wind farms, or carbon capture. We respect that some people will have policy preferences, but we do not accept the claim that advocating for natural gas is at odds with climate goals – instead we try to explain clearly, through our engagements with investors and public reports, the basis for our perspective. This is a key difference in our analysis of climate-related advocacy and that of groups such as InfluenceMap, who describe our support for the role of oil and gas in the energy mix as "at odds with the findings of the Intergovernmental Panel on Climate Change (IPCC) and the International Energy Agency (IEA)".[1] Woodside engages with InfluenceMap and has explained that we reject that opinion, for the reasons stated in this report.

Our disclosures are intended to help investors assess our performance transparently and determine if our approach aligns with their risk appetite. Disagreement with our approach can contribute to constructive debate and we welcome feedback to keep our transition plans responsive to shareholder expectations.

There are varying opinions in public discourse as to which 1.5°C pathways and other transition choices are preferred. Some groups may choose to label approaches that they do not agree with as "greenwashing". Greenwashing is a real phenomenon which should be regulated and publicly criticised, but misuse of it as a label is also detrimental to public understanding and may have the effect of inhibiting the free exchange of knowledge and ideas that could advance the energy transition.

INDUSTRY ASSOCIATIONS

Woodside engages in policy advocacy both as an individual organisation and via a range of industry association memberships. We aim to align both our own policy engagement and that of our associations (where possible) in support of the temperature goals of the Paris Agreement. Our detailed Industry Association Review was updated in 2023 and is available at woodside.com.

PARIS ALIGNMENT

The temperature goals of the Paris Agreement is to limit "the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C".[2] This goal was reaffirmed at the COP28 global climate summit in the United Arab Emirates in December 2023, which also underscored the importance of the 1.5°C goal and resolved to pursue it.[3]

We encourage readers to review the whole COP28 decision text at www.unfccc.int, as we can only provide an abridged version here to draw attention to the most critical links with our business. These links are provided in the table, right.

Decision text at COP28 "Outcome of the first global stocktake" (abridged, section referenced)[3]	**Link to Woodside in this report**
The Conference of the Parties serving as the meeting of the Parties to the Paris Agreement:	
...calls on Parties to contribute to the following global efforts, in a nationally determined manner, taking into account the Paris Agreement and their different national circumstances, pathways and approaches (Section 28)	See pages 43-55 for a description of how Woodside integrates analysis of different national circumstances, pathways and approaches into its business planning.
- Transitioning away from fossil fuels in energy systems, in a just, orderly and equitable manner, accelerating action in this critical decade, so as to achieve net zero by 2050 in keeping with the science (Section 28 (d))	See pages 44-45 for a description of oil and gas in energy pathways in keeping with the science
- Accelerating zero- and low-emission technologies, including, inter alia, renewables, nuclear, abatement and removal technologies such as carbon capture and utilisation and storage, particularly in hard-to-abate sectors, and low-carbon hydrogen production (Section 28 (e))	See pages 36-40 for a description of Woodside's development of some of these technologies (CCUS, hydrogen and renewables)
- Accelerating and substantially reducing non-carbon-dioxide emissions globally, including in particular methane emissions by 2030 (Section 28 (f))	See page 23 for an update on Woodside's methane performance and plan
Recognises that transitional fuels can play a role in facilitating the energy transition while ensuring energy security (Section 29)	See pages 46-47 for a discussion of the transitional role of natural gas
Emphasises the urgent need for accelerated implementation of domestic mitigation measures in accordance with Article 4, paragraph 2, of the Paris Agreement, as well as the use of voluntary cooperation, referred to in Article 6, paragraph 1, of the Paris Agreement (Section 31)	See pages 28-31, 74 for a description of Woodside's participation in voluntary carbon markets, and pages 65-66 for a summary of its advocacy for implementation of Article 6.

1 InfluenceMap, 2023. "Woodside's Climate Policy Engagement: A Real-World Metric of the Company's Climate Strategy", https://influencemap.org/report/Woodside-s-Real-Climate-Strategy-22060.
2 UNFCCC, 2015. "Paris Agreement", Article 2. https://unfccc.int/sites/default/files/english_paris_agreement.pdf
3 UNFCCC, 2023. "Outcome of the first global stocktake" (Advance unedited version). https://unfccc.int/documents/636584

2023 CLIMATE-RELATED ADVOCACY

Below is a list of speeches and submissions that contain climate-related content or positions. Further information is available at woodside.com.

Submissions about government policy

Australia

- Safeguard Mechanism Consultation Paper
- Consultation on setting, tracking and achieving Australia's emissions reduction targets
- Future of Gas Strategy
- Climate related financial disclosure: second consultation round
- Carbon leakage review
- Inquiry into London Protocol
- ACCU Review implementation plan
- Review of the Singapore Australia Green Energy Agreement (GEA)
- A mandatory code of conduct to guide behaviour in the gas market
- Senate inquiry into the Gas Market Code of Conduct
- Consultation in the course of preparing an environment plan
- Inquiry into the WA Domestic Gas Policy
- National Electricity Amendment (Concessional Finance for Transmission Network Service Providers) rule

United States

- Department of Energy (DOE) Office of Clean Energy Demonstrations' Notice of Intent to establish a Demand-side Support Mechanism
- Department of Energy (DOE) Clean Hydrogen Hub (confidential)
- Inflation Reduction Act Section 45V clean hydrogen production tax credit

Parliamentary hearing appearances

- Australian House of Representatives Inquiry into the London Protocol (relating to cross-border transport of CO_2 for CCS)
- Australian Senate inquiry into the Safeguard Mechanism

Keynotes and speeches delivered by Executives

Australia

- 2023 Australian Oil and Gas (AOG) Energy Conference: Maximising value and energy growth
- American Chamber of Commerce in Australia (AmCham): Business Luncheon with Meg O'Neill
- Australian Domestic Gas Outlook (ADGO) 2023 Conference: Keynote
- Australian Energy Producers (AEP) 2023 Conference & Exhibition: Opening Address
- Business News: Success and Leadership Breakfast
- Committee for Economic Development of Australia (CEDA) WA Energy Transition Summit: Infrastructure for a green transition
- Committee for Economic Development of Australia (CEDA) The Future of Gas in WA Event: Keynote Address
- National Press Club: Energy Security through the energy transition
- Society of Petroleum Engineers Western Australia Season Opening: What are the leadership skills needed in complex and difficult times
- WA Korea Economic Forum: Keynote
- World Energy Cities Partnership AGM Event

International

- 2023 Energy Intelligence Forum: Leadership Dialogue
- CERAWeek 2023: Oil and Gas – Playing the Long Game
- CERAWeek 2023: Navigating Volatile Energy Markets
- CERAWeek 2023: Diversity in the Workforce: Creating Value
- Gastech Global Business Leadership CEO Panel discussion: Transforming global energy through collaborative business models and constructive partnerships
- LNG2023 Plenary 2: Challenges of a Turbulent Energy Transition
- Offshore Technology Conference 2023: Timor-Leste on the Rise with its Greater Sunrise Fields
- Society of Petroleum Engineers Annual Technical Conference and Exhibition: Expanding the Opportunities to Sustainably Fuel the World
- Trinidad and Tobago Energy Conference 2023: Navigating a Complex Energy Future
- Wood Mackenzie's Global Energy Summit: Keynote

Case Study: Safeguard Mechanism advocacy

The Safeguard Mechanism is Australia's principal regulation for the reduction of emissions from industrial facilities.

Woodside advocated for a fair, robust and transparent mechanism to lead to a reduction in Australia emissions, including by encouraging businesses to invest, innovate and adopt smarter practices and technologies in line with Australia's emissions reduction targets.[1]

Our advocacy on the reforms continues to include:

- Changes to important emissions reduction opportunities such as renewable electricity import and CCS are incentivised.
- Accelerating bilateral arrangements for international carbon crediting under Article 6 of the Paris Agreement.
- Tailoring the support for "energy intensive trade exposed" industries.
- Technical advice on the quantification of baselines including for new facilities.

Focus on our work with Ipieca

Ipieca is the global oil and gas association for advancing environmental and social performance across the energy transition, and was founded in 1974 at the request of the United Nations Environment Programme.[2]

Woodside is an active participant:

- Woodside's representative is a member of Ipieca's global executive and designated their 'climate champion';
- Woodside's representative chaired the taskforce that developed and published a fact sheet on the role of oil and gas in energy transitions;
- Woodside experts participated in taskforces to develop guidance on Scope 3 emissions accounting, the role of carbon-compensated products, and approaches to the Just Transition;
- A Woodside expert attended the IPCC's conference to conclude the Sixth Assessment (AR6) Synthesis Report (Summary for Policymakers) on behalf of Ipieca.

1 Woodside, 2023. "Safeguard Mechanism Consultation Paper", https://www.woodside.com/docs/default-source/sustainability-documents/transparency-documents/2023-government-submissions-reports/submission-to-safeguard-mechanism-consultation-paper-woodside.pdf?sfvrsn=2a208822_3.
2 Ipieca. "About us", https://www.ipieca.org/about.

Industry initiatives

Woodside has joined a range of industry initiatives to provide leadership and advocacy, learn from our peers, and check that our approach is consistent with appropriate global practice.

Oil & Gas Decarbonization Charter (OGDC)[1]

In 2023, Woodside became the first Australian company to sign the Oil & Gas Decarbonization Charter (OGDC).

During COP28 the COP28 Presidency and the Kingdom of Saudi Arabia announced 50 oil and gas companies had joined the Oil and Gas Decarbonization Charter, a global industry Charter dedicated to high-scale impact, and to speed up climate action within the industry.

Task Force on Climate Related Financial Disclosures (TCFD)[2]

Woodside became an official supporter of TCFD in 2021. The TCFD released climate-related financial disclosure recommendations designed to help companies provide better information to support informed capital allocation. The disclosure recommendations are structured around four thematic areas that represent core elements of how companies operate: governance, strategy, risk management, and metrics and targets.

Following the completion of its 2023 status report, the TCFD organization has been disbanded and its work will be taken forward by the International Financial Reporting Standards (IFRS) Foundation. The IFRS Foundation is hosting the work of the International Sustainability Standards Board (ISSB) whose reporting standards build upon the work of the TCFD. Woodside continues to utilise TCFD recommendations while awaiting the implementation of climate-related financial disclosure requirements in Australia and equivalent requirements in other jurisdictions we are active in and have a significant presence.

Oil and Gas Methane Partnership 2.0 (OGMP)[3]

Woodside joined OGMP 2.0 in 2024. The OGMP 2.0 is the United Nations Environment Programme's flagship oil and gas reporting and mitigation programme. OGMP 2.0 is the only comprehensive, measurement-based reporting framework for the oil and gas industry that improves the accuracy and transparency of methane emissions reporting. This is key to prioritising methane mitigation actions in the sector.

Aiming for Zero Methane Emissions Initiative[4]

In 2022, Woodside Energy became the first Australasian company to sign the Aiming for Zero Initiative. The initiative was launched by the Oil and Gas Climate Initiative (OGCI) to encourage the oil and gas industry to cut methane emissions to near-zero.[5] It calls for an all-in approach that treats methane emissions as seriously as the oil and gas industry already treats safety: aiming for zero and striving to do what is needed to get there. Aiming for Zero acts as a complement for key initiatives such as MGP, OGMP 2.0 and the Global Methane Pledge.

Methane Guiding Principles (MGP)[6]

Woodside joined the MGP in 2018. The MGP focus on five priority areas for action to reduce methane emissions across the natural gas supply chain. They were developed collaboratively in 2017 by a coalition of industry and civil society organizations. The 5 priority areas are:

1. Continually reduce methane emissions
2. Advance strong performance across the gas supply chain
3. Improve accuracy of methane emissions data
4. Advocate sound policy and regulations on methane emissions
5. Increase transparency

Zero Routine Flaring by 2030 (ZRF) Initiative[7]

Woodside joined ZRF in 2017. The Initiative was launched by the World Bank and is managed by the Global Flaring and Methane Reduction Partnership (GFMR). It commits governments and companies to end routine flaring no later than 2030. The Initiative is designed to facilitate cooperation between all stakeholders so that solutions to ending routine gas flaring can be identified and implemented.

1 COP28 UAE, 2023. "Oil & Gas Decarbonization Charter", https://www.cop28.com/en/news/2023/12/Oil-Gas-Decarbonization-Charter-launched-to--accelerate-climate-action.
2 TCFD, 2017. "Recommendations of the Task Force on Climate-related Financial Disclosures", https://assets.bbhub.io/company/sites/60/2021/10/FINAL-2017-TCFD-Report.pdf
3 https://www.unep.org/explore-topics/energy/what-we-do/methane/oil-gas-methane-partnership-20-ogmp-20
4 OGCI, 2021. "Aiming for Zero Methane Emissions Initiative". https://aimingforzero.ogci.com/wp-content/uploads/2022/05/Aiming-for-Zero-text.pdf
5 OGMP, 2023. "Implementation Plan Guidance", p. 2 https://ogmpartnership.com/wp-content/uploads/2023/02/OGMP-2.0-Implementation-Plan-Guidance_2.pdf. OGMP provides the OGCI collective average target for upstream operations as an example of 'near zero' emissions intensity.
6 MGP, 2017. "The Methane Guiding Principles". https://methaneguidingprinciples.org/about/the-methane-guiding-principles/
7 World Bank, 2015. "Global Initiative to Reduce Gas Flaring: Zero Routine Flaring by 2030". https://thedocs.worldbank.org/en/doc/a903b5e6456991faf3b5e079bba0391a-0400072021/related/ZRF-Initiative-text-list-map-104.pdf

A just transition



Woodside recognises the importance of a just transition to our customers, our employees, and the communities where we operate and who benefit from our operations.

The Paris Agreement emphasises "the intrinsic relationship that climate change actions, responses and impacts have with equitable access to sustainable development and eradication of poverty".[1] It also takes into account "the imperatives of a just transition of the workforce and the creation of decent work and quality jobs".[1]

Woodside acknowledges that the energy transition will change the way we conduct our business. In order for the transition to be a just one, the scale of this change will require commitment and collaboration between governments, industry, investors and communities.

At COP28 the Parties adopted a work programme on just transition pathways. The program will cover themes including "Just and equitable transition, which encompasses pathways that include energy, socio-economic, workforce and other dimensions all of which must be based on nationally defined development priorities and include social protection so as to mitigate potential impacts associated with the transition."[2]

COLLABORATION

Woodside participates in various international forums that encourage information sharing and collaboration across industry. Woodside recognises that a just transition is most likely to be effective when businesses, governments, workers, communities and other stakeholders work together.

Our approach is informed by our membership in Ipieca's Just Transition Task Force. The task force aims to support collaboration and sharing of effective practices as companies develop their decarbonisation plans.

Woodside is also a member of the Climate Leaders Coalition (CLC). The CLC is a group of cross-sectoral Australian corporate CEOs supporting the Paris Agreement commitments and setting public decarbonisation targets. In 2023 the CLC published the "Credible Transition to Net Zero – Practical insights for getting started", which incorporated guidance about considering a just transition.[3]

1 UNFCCC, 2015. "The Paris Agreement", Preamble. https://unfccc.int/sites/default/files/english_paris_agreement.pdf
2 UNFCCC, 2023. "United Arab Emirates Just Transition work programme" (Advance unedited version). https://unfccc.int/sites/default/files/resource/cma5_auv_5_JTWP.pdf
3 Climate Leaders Coalition, 2023. "Credible Transition to Net Zero: Practical insights for getting started", https://www.climateleaders.org.au/publications/credibletransition/

WOODSIDE'S APPROACH

Access to energy

We consider our role in providing energy as core to our contribution to a just energy transition. United Nations Sustainable Development Goal 7 is to "ensure access to affordable, reliable, sustainable and modern energy for all".

Decommissioning

Decommissioning oil and gas assets at the end of their productive life is an inherent part of the oil and gas industry lifecycle. In 2023, Woodside spent approximately $530 million executing decommissioning work across our portfolio. Planning for decommissioning starts well in advance of asset end of life, and includes stakeholder engagement to address environmental, regulatory and social outcomes for the communities we operate in.

Stakeholder engagement

Woodside is committed to engaging in a social dialogue with our workforce, the communities in which we operate, affected stakeholders and businesses with whom we have a relationship.

Social Impact Management

We build relationships to enable ongoing engagement across all phases of our activities. Understanding the impacts of our activities, both environmental and social including human rights, is embedded into our Project Management Framework. Our updated social impact assessment for our onshore gas operations near Karratha in Western Australia included engagement with the local community on a range of scenarios including growth and decline. Our Social Performance Framework guides our approach in sharing timely information about our activities and understanding the expectations of the communities where we are active and have a significant presence.

We work with our suppliers to embed this approach into our value chain and will continue to do so through the transition. We currently employ approximately 240 people across our new energy and lower carbon services teams, the majority of whom have been redeployed from our base business. Where possible, we will continue to look to retrain and reskill our current workforce so that they can transition into these opportunities.

More information about our approach can be found on our website.

Just transition key stakeholders

Woodside has identified that our workforce, our suppliers, our host communities and our customers are the key stakeholders relevant to a just transition. We can help prepare for and manage the transition through our commitment to regular stakeholder engagement, local content in our projects and building capability and capacity through social investment and employee development all of which are well established across the organisation. More information about stakeholder engagement can be found on our website.



Workforce

We support an inclusive workplace which allows us to leverage the diversity of thought which can come from teams with different knowledge, experience, approaches and ways of thinking.



Suppliers

We work with suppliers that align with our vision and share our commitment to deliver better outcomes for our business, customers and communities.



Host Communities

Woodside supports host communities by helping to improve local capability and capacity. Updates on our social contribution available at woodside.com.



Customers

We collaborate with our customers on innovative lower carbon energy solutions. For example, services like CCS can help customers reduce the emissions they would otherwise generate when using Woodside products (or similar products sourced from others).

Internal climate engagement

Woodside has an employee-led internal group on Climate Change. In late 2023, it organised a two-week forum during COP28 to encourage all employees to get informed, talk about, and take action on the company's climate strategy. Over 1,000 Woodside employees, including members of the Executive Leadership Team, participated in the forum. The topics showcased included deep dives into current climate issues, an exploration of Woodside's role in the energy transition, and practical discussions on asset decarbonisation.

During the forum, the International Energy Agency (IEA) presented their insights from their recent publications including the 'World Energy Outlook 2023' and the 'Oil and Gas Industry in Net Zero Transitions' report.[1,2] This presentation gave Woodsiders the opportunity to hear directly from the IEA on their climate scenarios, the assumptions that underpin them, and the key role of energy producers in the transition. This session also emphasised the importance of having an open dialogue with key stakeholders in the energy industry.

The American Petroleum Institute (API) presented their insights into the United States' policy landscape and their view on the role of the oil and gas industry in the energy transition. The API shared their insights on COP28 and the evolving global climate policy landscape with the participants.



Perth external keynote: International Energy Agency (IEA) 2023 World Energy Outlook



Houston external keynote: COP28 from American Petroleum Institute (API) perspective

1 IEA, 2023. "World Energy Outlook 2023." All rights reserved. https://iea.blob.core.windows.net/assets/42b23c45-78bc-4482-b0f9-eb826ae2da3d/WorldEnergyOutlook2023.pdf
2 IEA, 2023. "Oil and Gas Industry in Net Zero Transitions." All rights reserved. https://iea.blob.core.windows.net/assets/41800202-d427-44fa-8544-12e3d6e023b4/TheOilandGasIndustryinNetZeroTransitions.pdf

7.0 APPENDICES



Natural gas and liquefied petroleum gas (LPG) are both used as fuel for cooking, such as for outdoor BBQs.

Climate-related data [1,2]

Impact of merger with BHP's petroleum business:

Data in this table is impacted by the merger with BHP's petroleum business which took effect on 1 June 2022. 2021 data reflects Woodside's portfolio before the merger. 2022 has five months of pre-merger data and seven months of post-merger data. 2023 reflects a full year of the merged entity.

Metric*	Unit of measure	2023	2022	2021
Hydrocarbon production[3]				
Total – equity	kt	22,215	18,752	10,522
Total – operated	kt	30,679	30,361	25,807
Sales (including Traded Hydrocarbons) – equity[4]	kt	23,918	20,261	12,977
Revenue				
Revenue – equity[5]	US$m	13,994	16,817	6,962
Global Scope 1 and 2 greenhouse gas emissions[6]				
Scope 1 and 2 emissions – equity (net)[7]	kt CO_2-e	5,532	4,615	3,235
Scope 1 emissions – equity (gross)	kt CO_2-e	6,172	5,357	3,541
Scope 2 emissions – equity (gross)	kt CO_2-e	18	13	6
Equity offsets retired in respect of annual emissions	kt CO_2-e	658	754	312
Scope 1 and 2 emissions – operated (gross)[2]	kt CO_2-e	9,175	9,573	8,908
Scope 1 emissions – operated (gross)	kt CO_2-e	9,165	9,565	8,901
Scope 2 emissions – operated (gross)	kt CO_2-e	10	8	8
Percentage of equity Scope 1 and 2 emissions covered under emissions limiting regulations[8]	%	92	95	99.5
Sources of equity Scope 1 greenhouse gas emissions				
Fuel combustion	kt CO_2-e	4,297	3,612	2,412
Flare	kt CO_2-e	522	688	461
Venting	kt CO_2-e	1,352	1,057	667
Other	kt CO_2-e	0	0	0**
Equity Scope 1 greenhouse gas emissions by country				
Australia	kt CO_2-e	5,704	NPR	NPR
Trinidad and Tobago	kt CO_2-e	185	NPR	NPR
United States of America	kt CO_2-e	283	NPR	NPR
Methane				
Methane emissions (greenhouse equivalent) - equity	kt CO_2-e	219	193	133
Percentage of equity gross Scope 1 and 2 emissions that are methane	%	4	4	3.7
Methane intensity – equity	t CH_4 / kt total production	0.35	0.42	0.45
Methane intensity – equity (Sm^3 / Sm^3 marketed gas)[9]	%	0.062	0.072	0.064
Methane emissions (greenhouse equivalent) – operated	kt CO_2-e	245	273	326
Methane intensity – operated	t CH_4 / kt total production	0.29	0.32	0.45
Methane intensity – operated (Sm^3 / Sm^3 marketed gas)[9]	%	0.046	0.054	0.064

*All footnotes related to this table are displayed on the next page.

Metric*	Unit of measure	2023	2022	2021
Flared gas[10]				
Total flaring - equity	t	132,862	232,299	154,546
Total flaring - operated	t	195,855	297,135	250,562
Flaring intensity - equity	t/kt	6.0	12.4	14.7
Flaring intensity - operated	t/kt	6.4	9.8	9.7
Global Scope 3 greenhouse gas emissions estimates				
Scope 3 emissions – equity, total	kt CO_2-e	72,825	60,699	37,186
Scope 3 emissions – purchased goods and services, related to Traded Hydrocarbon – equity	kt CO_2-e	1,225	1,011	1,375
Scope 3 emissions – selected other upstream – equity[11]	kt CO_2-e	219	256	200
Scope 3 emissions – downstream transportation and distribution – equity[12,13]	kt CO_2-e	1,728	1,477	819
Scope 3 emissions – use of sold product, related to Woodside production – equity	kt CO_2-e	64,612	53,188	27,906
Scope 3 emissions – use of sold product, related to Traded Hydrocarbon – equity[14]	kt CO_2-e	5,041	4,768	6,886
Greenhouse gas emissions intensity				
Scope 1 emissions intensity – equity production (gross)	kt CO_2-e/kt	0.28	0.29	0.34
Scope 1 emissions intensity - operated production (gross)	kt CO_2-e/kt	0.30	0.32	0.34
Scope 1 emissions intensity - equity revenue (gross)	kt CO_2-e/revenue US$m	0.44	0.32	0.51
Scope 1 upstream facility emissions intensity – equity production (gross)	kg CO_2-e/boe	10.3	8.1	4.1
Scope 1 LNG facility emissions intensity – equity production (gross)	kg CO_2-e/boe	40.2	40.3	38.4
Scope 1 and 2 emissions intensity - equity production (net)	kt CO_2-e/kt	0.25	0.25	0.31
Scope 1 and 2 emissions intensity - operated production (gross)	kt CO_2-e/kt	0.30	0.32	0.34
Scope 1, 2 and 3 emissions intensity - equity production (net)[15]	g CO_2-e/MJ	65	63	58

* The amounts in this report have been rounded to the nearest unit of measure. Small differences are due to rounding.
** Other source of Scope 1 Greenhouse gas emissions category rounded to the nearest kilotonne. 2021 data previously reported as 0.2 kt CO_2-e.
1 The equity portion of greenhouse gas emissions, flare, fuel and production values include data from non-operated ventures where Woodside owns an equity portion. Where data has been provided by third parties it has been used. Where 2023 data is not available estimates have been used based on extrapolation of historic data or from the performance of analogue facilities where historical data is also not available
2 Operated greenhouse gas emissions, flare, fuel and production values are for Woodside operated production assets only.
3 Hydrocarbon production includes exportable hydrocarbons only and comprises LNG, pipeline gas, crude oil, condensate and natural gas liquids (NGLs). Traded hydrocarbons are excluded.
4 Traded hydrocarbons means the purchase and/or sale of spot and/or strip of LNG cargoes, crude oil or pipeline gas.
5 Please see Annual Report 2023 for more information on Total Operating Revenue.
6 Greenhouse gas emissions, energy values and global warming potentials are estimated in accordance with the relevant reporting regulations in the jurisdiction where the emissions occur (e.g. Australian National Greenhouse and Energy Reporting (NGER), US EPA Greenhouse Gas Reporting Program (GHGRP)). Australian regulatory reporting principles have been used for emissions in jurisdictions where regulations do not yet exist.
7 Equity emissions are based on the GHG Protocol Corporate Standard and the Ipieca Petroleum Industry Guidelines for Reporting Greenhouse Gas Emissions 2nd Edition, May 2011. Equity emissions from non-hydrocarbon producing subsidiary companies (e.g. shipping companies) are excluded.
8 Remaining 8% is due to international assets and Australian assets with emissions below the Safeguard Mechanism legislation threshold.
9 Methane intensity is calculated as the volume of methane emissions divided by the volume of marketed gas inclusive of LNG, pipeline gas and natural gas liquids.
10 Flared emissions calculation methodology was updated in 2020 to align with NGER and include inert compounds which have a global warming potential of zero.
11 Selected upstream emissions from GHG Protocol Categories 1 (purchased goods and services, not including production of purchased LNG); 5 (waste generated in operations); 6 (business travel); and 7 (employee commuting). Includes equity emissions associated with Woodside employees and Woodside operated facilities only.
12 Includes emissions associated with the downstream transport (GHG Protocol Category 9) of hydrocarbon sales. Where information is available Woodside's equity share is reported, where this information is not available 100% of transport emissions are conservatively reported. No adjustment has been made for combustion of sold product during transport (e.g. LNG combusted by LNG ships, pipeline gas used in transmission compressor stations) and therefore could be double counted.
13 2021 reported value only includes downstream transportation of Woodside equity LNG. Numbers reported after includes downstream transportation of all Woodside equity production.
14 2021 reported value only includes traded LNG. Numbers reported after includes use of sold product for all Woodside traded hydrocarbons.
15 Emissions intensity is calculated based on net equity Scope 1 and 2 greenhouse gas emissions as well as equity Scope 3 (use of sold product) and Woodside's equity production. Metric excludes emissions and production related to traded hydrocarbons.

Sources of carbon credits retired in respect of 2023 Scope 1 and 2 emissions

Project name	Project ID	Project developer / Project proponent	Project type	Method	Country	Vintage	Volume
Darling River Conservation Initiative Site #7	ACCU Scheme ERF131162	Terra Carbon Pty Limited	Human Induced Regeneration	Carbon Credits (Carbon Farming Initiative) (Human-Induced Regeneration of a Permanent Even-Aged Native Forest - 1.1) Methodology Determination 2013	Australia	2023	64
Colac Beltram Munberry Haredean (CBMH) Regeneration Project	ACCU Scheme ERF101800	Lanin Holdings Pty Ltd, Ninal Ventures Pty Ltd	Human Induced Regeneration	Carbon Credits (Carbon Farming Initiative) (Human-Induced Regeneration of a Permanent Even-Aged Native Forest - 1.1) Methodology Determination 2013	Australia	2021	810
Molendinar Landfill Gas Project	ACCU Scheme EOP100501	LMS Energy Pty Ltd	Landfill Gas	Carbon Credits (Carbon Farming Initiative - Landfill Gas) Methodology Determination 2015	Australia	2021	1,214
WithOneSeed Timor-Leste Community Forestry Program	Gold Standard GS 4210	xPand Foundation	Afforestation Reforestation	Afforestation/Reforestation GHG Emissions Reduction & Sequestration Methodology	Timor-Leste	2018	4,050
Antai Group Waste Gas Recovery for Power Generation Project (300303)	Gold Standard GS 605	South Pole Carbon Asset Management Limited	Energy Efficiency — Industrial	ACM0012: Waste energy recovery	China	2018	27,157
Hebei Guyuan County Dongxinying 199.5 MW Wind Power Project	Verra VCS 903	Hebei Construction Investment New Energy Co., Ltd.	Renewable — Wind	ACM0002: Consolidated methodology for grid-connected electricity generation from renewable sources	China	2018-2019	118,319
Katingan Peatland Restoration and Conservation Project	Verra VCS 1477	PT. Rimba Makmur Utama (PT. RMU)	Agriculture Forestry and Other Land Use	VM0007: REDD Methodology Modules	Indonesia	2018	431,956
Grid Connected Solar Energy Project	Verra VCS1890	CLP India Private Limited	Renewable - Wind	ACM0002: Consolidated methodology for grid-connected electricity generation from renewable sources	India	2018-2019	74,161

The volume is the number of credits retired, each credit represents one tonne of CO_2-e.

Scope 3 methodology

Methodologies and practices to measure and account for Scope 3 emissions continue to develop.

Woodside's approach is to align with the GHG Protocol where available, using an equity share approach to emissions calculations, and to disclose its methodology in areas where there is not a clear guideline.[1] Part of Woodside's Scope 3 Plan is to promote global measurement and reporting, so we actively engage in addressing gaps in methodology where we can. We also monitor updates, and as standards develop we will review whether we need to revise our approach.

BOUNDARY

Woodside currently reports GHG emissions in the following categories of the GHG protocol:[1]

- Category 1: Purchased Goods and Services, relating to the purchase of LNG from other upstream suppliers to supply our customers.
- A bundled estimate of smaller upstream emissions categories including categories 1: (purchased goods and services, other than Traded LNG), 5 (waste generated in operations), 6 (business travel) and 7 (employee commuting).
- Category 9: Downstream transportation and distribution, relating to the shipping of LNG to customers. For consistency all shipping is included in this category including Woodside-leased vessels.
- Category 11 "use of sold product", relating to the combustion of our oil and gas products. We currently assume all products are combusted (a conservative assumption, due to the challenges of tracking precise end-use). If tracking methodologies improve or we otherwise are confident that a portion of our sales are not combusted (for example, used as feedstock for ammonia production) we may incorporate this in future.

We report these emissions on a gross equity basis. Our gross equity Scope 3 emissions may increase or decrease due to changes in production or through merger and acquisition activities.

SCOPE 3 INVESTMENT TARGET

Woodside has a target to invest $5 billion in new energy products and lower carbon services by 2030 ("Scope 3 investment target").[2] This potentially includes both organic and inorganic expenditure. It is not used to fund reductions of Woodside's net equity Scope 1 and 2 emissions which are managed separately through asset decarbonisation plans. Where a project abates both Woodside Scope 1 emissions as well as third party emissions, expenditure will be apportioned and attributed to the target accordingly.

SCOPE 3 EMISSIONS ABATEMENT TARGET

Woodside has a target to take FID on new energy products and lower carbon services by 2030, with total abatement capacity of 5 Mtpa CO_2-e ("Scope 3 emissions abatement target"). The relevant customers are the customers of the new energy or lower carbon services project, who may not necessarily also be customers of Woodside's oil and gas business.

- For CCUS projects, Woodside will attribute to the target a volume of customer emissions reduced in proportion to our equity share of the CCUS project. The total volume of customer emissions reduced will be the volume of emissions stored or converted to saleable products.
- For hydrogen (including ammonia) projects, Woodside will attribute to the target a volume of estimated customer emissions avoided in proportion to our equity share of the hydrogen (including ammonia) project. The estimated volume of avoided emissions will be calculated in accordance with engineering judgment and practice, including but not limited to:

1 World Resources Institute and World Business Council for Sustainable Development, 2014. "GHG Protocol: a corporate accounting and reporting standard." p. 17.
2 Scope 3 targets are subject to commercial arrangements, commercial feasibility, regulatory and Joint Venture approvals, and third party activities (which may or may not proceed). Individual investment decisions are subject to Woodside's investment targets. Not guidance. Potentially includes both organic and inorganic investment.



Gas is utilised as a direct heating source for homes or indirectly through electricity.

  - the equivalent diesel consumption based on energy density and converted to t CO_2-e assuming the diesel is combusted, in the case sales to the heavy duty road transport sector;
  - the equivalent bunker fuel based on energy density and converted to t CO_2-e assuming the bunker fuel is combusted, in the case of sales to the marine fuels sector;
  - the equivalent coal consumption based on energy density and converted to t CO_2-e assuming the coal is combusted, in the case of sales to the power generation sector.
- For renewable power projects, Woodside will attribute to the target an estimated volume of avoided emissions in proportion to our equity share in the renewable power project. The estimated volume of avoided emissions will be calculated in accordance with engineering judgment and practice, including but not limited to comparison with the average emissions intensity of the power grid in the relevant location.

REPORTING GROSS AND NET SCOPE 3 EMISSIONS

When reporting Scope 3 emissions, Woodside will separately report its Scope 3 emissions (including those arising from its sales of oil and gas products) from its estimation of avoided or reduced customer emissions as a consequence of projects pursued in support of the targets.

MERGERS AND ACQUISITIONS

The Board may, in its sole discretion, change either of the Scope 3 targets to reflect changes due to mergers and acquisitions.

Glossary

*All footnotes related to this table are displayed at the end of the glossary.

Abate / abatement	Avoidance, reduction or removal of an amount of carbon dioxide or equivalent.
AR6 Scenarios Database	The full citation for the AR6 Scenarios Database in section 4.2 is: Edward Byers, Volker Krey, Elmar Kriegler, Keywan Riahi, Roberto Schaeffer, Jarmo Kikstra, Robin Lamboll, Zebedee Nicholls, Marit Sanstad, Chris Smith, Kaj-Ivar van der Wijst, Alaa Al Khourdajie, Franck Lecocq, Joana Portugal-Pereira, Yamina Saheb, Anders Strømann, Harald Winkler, Cornelia Auer, Elina Brutschin, Matthew Gidden, Philip Hackstock, Mathijs Harmsen, Daniel Huppmann, Peter Kolp, Claire Lepault, Jared Lewis, Giacomo Marangoni, Eduardo Müller-Casseres, Ragnhild Skeie, Michaela Werning, Katherine Calvin, Piers Forster, Celine Guivarch, Tomoko Hasegawa, Malte Meinshausen, Glen Peters, Joeri Rogelj, Bjorn Samset, Julia Steinberger, Massimo Tavoni, Detlef van Vuuren. AR6 Scenarios Database hosted by IIASA International Institute for Applied Systems Analysis, 2022.doi: 10.5281/zenodo.5886911 | url: data.ece.iiasa.ac.at/ar6/
AR6-SYR	IPCC, 2023: Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, 184 pp., doi: 10.59327/IPCC/AR6-9789291691647.
AR6-WG3	IPCC (2022). "Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change"
Aspiration	Woodside uses this term to describe an aspiration to seek the achievement of an outcome but where achievement of the outcome is subject to material uncertainties and contingencies such that Woodside considers there is not yet a suitable defined plan or pathway to achieve that outcome.
Biodiversity	Biological diversity means the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species and of ecosystems.[1]
Biosequestration	Biosequestration refers to the capture and storage of carbon in living organisms, including plants and trees, to mitigate greenhouse gas emissions.
Board	The Board of Directors of Woodside Energy Group Ltd.
Carbon credit	A tradable financial instrument that is issued by a carbon-crediting program. A carbon credit represents a greenhouse gas emission reduction to, or removal from, the atmosphere equivalent to 1 tCO_2-e, calculated as the difference in emissions from a baseline scenario to a project scenario. Carbon credits are uniquely serialised, issued, tracked and retired or administratively cancelled by means of an electronic registry operated by an administrative body, such as a carbon-crediting program.
Carbon credit integrity	Woodside assesses greenhouse gas integrity (abatement that is measurable, verifiable and has a low risk of being inaccurate, non-additional or impermanent) and Environmental, Social and Governance integrity (guided by positive (or no negative) impacts on people and the environment; and appropriate governance measures to prevent adverse consequences and impacts).
Carbon sinks	Carbon sinks are forests and other ecosystems that absorb carbon, thereby removing it from the atmosphere and offsetting CO_2 emissions. (Definition taken from European Commission "Climate change: glossary of common terms and acronyms", https://www.eea.europa.eu/help/glossary/eea-glossary/carbon-sink)
CCS	Carbon capture and storage
CCU	Carbon capture and utilisation, also referred to as carbon to products
CCUS	Carbon capture utilisation and storage
CH_4	Methane
CO_2	Carbon dioxide
CO_2-e	CO_2 equivalent. The universal unit of measurement to indicate the global warming potential of each of the seven greenhouse gases, expressed in terms of the global warming potential of one unit of carbon dioxide. It is used to evaluate releasing (or avoiding releasing) any greenhouse gas against a common basis.[2]
Condensate	Hydrocarbons that are gaseous in a reservoir but that condense to form liquids as they rise to the surface.
COP28	The 28th Conference of the Parties to the United Nations Framework Convention on Climate Change, meeting in Dubai, UAE, November-December 2023.
Decarbonisation	Woodside uses this term to describe activities or pathways that have the effect of moving towards a state that is lower carbon, as defined in this glossary.
Emissions	Emissions refers to emissions of greenhouse gases unless otherwise stated.
Equity greenhouse gas emissions	Woodside sets its Scope 1 and 2 greenhouse gas emissions reduction targets on an equity basis. This ensures that the scope of its emissions reduction targets is aligned with its economic interest in its investments. Equity emissions reflect the greenhouse gas emissions from operations according to Woodside's share of equity in the operation. Its equity share of an operation reflects its economic interest in the operation, which is the extent of rights it has to the risks and rewards flowing from the operation.[3]
FEED	Front end engineering design
FID	Final investment decision
FID-ready	A project is considered FID-ready if it has completed and/or obtained the necessary studies and designs so that a final investment decision can be made. This decision is made based on a range of financial, technical and strategic factors, and is a requirement for construction and implementation of a project to commence.
First Nations and Indigenous Peoples	First Nations people are the Indigenous people, or earliest known inhabitants, of a country. A First Nations person is a person of Indigenous decent, who identifies as a First Nations person and is accepted by their respective community. NOTE: We acknowledge the diversity of the First Nations communities in the areas where we are present. When communicating with a wide audience, Woodside uses the term Indigenous and First Nations interchangeably. On a local level, Woodside will be guided by the community as to the appropriate terms of reference.
FCF	Free cash flow. Cash flow from operating activities and cash flow from investing activities.

*All footnotes related to this table are displayed at the end of the glossary.

Flaring	The controlled burning of gas found in oil and gas reservoirs.
GHG or greenhouse gas	The seven greenhouse gases listed in the Kyoto Protocol are: carbon dioxide (CO_2); methane (CH_4); nitrous oxide (N_20); hydrofluorocarbons (HFCs); nitrogen trifluoride (NF_3); perfluorocarbons (PFCs); and sulphur hexafluoride (SF_6).[2]
Goal	Woodside uses this term to broadly encompass its targets and aspirations.
Gross greenhouse gas emissions	Also referred to as 'absolute' emissions, gross emissions are emissions before any eligible units and certificates have been accounted for.[4]
HSE	Health, safety and environment
IFRS	International Financial Reporting Standards Foundation. For more information see www.ifrs.org
IRR	Internal rate of return
JV	Joint venture
LNG	Liquefied natural gas
Lower carbon	Woodside uses this term to describe the characteristic of having lower levels of associated potential GHG emissions when compared to historical and/or current conventions or analogues, for example relating to an otherwise similar resource, process, production facility, product or service, or activity. When applied to Woodside's strategy, please see the definition of lower carbon portfolio.
Lower carbon economy	A lower carbon economy is an economy that produces lower levels of greenhouse gas emissions relative to today's economy.
Lower carbon portfolio	For Woodside, a lower carbon portfolio is one from which the net equity Scope 1 and 2 greenhouse gas emissions, which includes the use of offsets, are being reduced towards targets, and into which new energy products and lower carbon services are planned to be introduced as a complement to existing and new investments in oil and gas. Our Climate Policy sets out the principles that we believe will assist us achieve this aim.
Lower carbon power	Lower carbon power comes from processes or technologies that produce electricity with a lower greenhouse gas emissions intensity relative to electricity produced from a higher emissions intensity source.
Lower carbon services	Woodside uses this term to describe technologies, such as CCUS or offsets that could be used by customers to reduce their net greenhouse gas emissions.
MOU	Memorandum Of Understanding. It is a non-binding agreement that outlines the intentions of two or more parties to work together towards a common goal or objective.
NDC	A Nationally Determined Contribution (NDC) is a voluntary climate action plan submitted by a country to the United Nations Framework Convention on Climate Change (UNFCCC), outlining their proposed actions and targets to reduce greenhouse gas emissions and support adaptation to climate change. It is a key element of the Paris Agreement, and each country is expected to regularly update and enhance their NDCs over time.
Net equity greenhouse gas emissions	Woodside's equity share of net greenhouse gas emissions which includes the utilisation of carbon credits as offsets.
Net greenhouse gas emissions	Woodside has set its Scope 1 and 2 greenhouse gas emissions reduction targets on a net basis, allowing for both direct emissions reductions from its operations and emissions reduction achieved from the utilisation of carbon credits as offsets (including credits relating to avoidance, reduction and/or removal activities). Net greenhouse gas emissions are equal to an entity's gross greenhouse gas emissions reduced by the number of retired carbon credits.[4]
Net zero	Net zero emissions are achieved when anthropogenic emissions of greenhouse gases to the atmosphere are balanced by anthropogenic removals over a specified period. Where multiple greenhouse gases are involved, the quantification of net zero emissions depends on the climate metric chosen to compare emissions of different gases (such as global warming potential, global temperature change potential, and others, as well as the chosen time horizon).[5]
New energy	Woodside uses this term to describe energy technologies, such as hydrogen or ammonia, that are emerging in scale but which are expected to grow during the energy transition due to having lower greenhouse gas emissions at the point of use than conventional fossil fuels. May include new energy products that have been manufactured from fossil fuels.
NGL	Natural gas liquids
Offsets	The compensation for an entity's greenhouse gas emissions within its scope by achieving an equivalent amount of emission reductions or removals outside the boundary or value chain of that entity.
Offtake	Offtake refers to the agreement between a seller and a buyer for the purchase and delivery of a product, typically a commodity or energy resource.
OGCI	Oil and Gas Climate Initiative. For more information see www.ogci.com.
Operator, Operated and non-operated	Oil and gas joint venture participants will typically appoint one company as the operator, which will hold the contractual authority to manage joint venture activities on behalf of the joint venture participants. Where Woodside is the operator of a joint venture in which it holds an equity share, this report refers to that joint venture as being operated. Where another company is the operator of a joint venture in which Woodside holds an equity share, this report refers to that joint venture as being non-operated.
Paris aligned scenarios	Consistent with limiting global warming to below 2°C above pre-industrial levels and pursuing efforts to limit warming to 1.5°C.[2]
Residual levels of emissions	Residual levels of emissions denotes the goal of reducing emissions as much as possible, taking into account both technological capabilities and commercial feasibility, towards a level that approaches but does not reach zero.
Retire, Retirement	The transfer of a carbon credit to a registry account that permanently removes the carbon credit from circulation. The term retirement applies to the use of the carbon credit by an entity to meet voluntary commitments or compliance obligations.
RFSU	Ready for start up.
Scope 1 GHG emissions	Direct GHG emissions. These occur from sources that are owned or controlled by the company, for example, emissions from combustion in owned or controlled boilers, furnaces, vehicles, etc.; emissions from chemical production in owned or controlled process equipment. Woodside estimates greenhouse gas emissions, energy values and global warming potentials are estimated in accordance with the relevant reporting regulations in the jurisdiction where the emissions occur (e.g. Australian National Greenhouse and Energy Reporting (NGER), US EPA Greenhouse Gas Reporting Program (GHGRP)). Australian regulatory reporting principles have been used for emissions in jurisdictions where regulations do not yet exist.[3]

Scope 2 GHG emissions	Electricity indirect GHG emissions. Scope 2 accounts for GHG emissions from the generation of purchased electricity consumed by the company. Purchased electricity is defined as electricity that is purchased or otherwise brought into the organisational boundary of the company. Scope 2 emissions physically occur at the facility where electricity is generated. Woodside estimates greenhouse gas emissions, energy values and global warming potentials are estimated in accordance with the relevant reporting regulations in the jurisdiction where the emissions occur (e.g. Australian National Greenhouse and Energy Reporting (NGER), US EPA Greenhouse Gas Reporting Program (GHGRP)). Australian regulatory reporting principles have been used for emissions in jurisdictions where regulations do not yet exist.[3]
Scope 3 GHG emissions	Other indirect GHG emissions. Scope 3 is a reporting category that allows for the treatment of all other indirect emissions. Scope 3 emissions are a consequence of the activities of the company, but occur from sources not owned or controlled by the company. Some examples of Scope 3 activities are extraction and production of purchased materials; transportation of purchased fuels; and use of sold products and services. Please refer to the data table on page 73 for further information on the Scope 3 emissions categories reported by Woodside.[3]
Short-, medium- and long-term	This report refers to ranges of time as follows: short-term means from now until 2025; medium-term means 2026-2035; long-term means 2036 and beyond. Woodside also refers to "near-term" and "medium-term" in the specific context of its net equity Scope 1 and 2 greenhouse gas emissions reduction targets. In this context, near-term refers to the 2025 as a point in time, and medium term refers to 2030 as a point in time, being the years to which the targets relate.
Starting base	For its net equity Scope 1 and 2 emissions targets, Woodside uses a starting base of 6.32 Mt CO_2-e which is representative of the gross annual average equity Scope 1 and 2 greenhouse gas emissions over 2016-2020 and which may be adjusted (up or down) for potential equity changes in producing or sanctioned assets with a final investment decision prior to 2021. Net equity emissions include the utilisation of carbon credits as offsets.
Stranded assets	Stranded assets can be broadly defined as assets which 'suffer from unanticipated or premature write-offs, downward revaluations or conversion to liabilities'.
Sustainability (including sustainable and sustainably)	References to sustainability (including sustainable and sustainably) are used with reference to Woodside's Sustainability Committee and sustainability related Board policies, as well as in the context of Woodside's aim to ensure its business is sustainable from a long-term perspective, considering a range of factors including economic (including being able to sustain our business in the long term by being low cost and profitable), environmental (including considering our environmental impact and striving for a lower carbon portfolio), social (including supporting our license to operate), and regulatory (including ongoing compliance with relevant legal obligations). Use of the terms 'sustainability', 'sustainable' and 'sustainably' is not intended to imply that Woodside will have no adverse impact on the economy, environment, or society, or that Woodside will achieve any particular economic, environmental, or social outcomes.
Target	Woodside uses this term to describe an intention to seek the achievement of an outcome, where Woodside considers that it has developed a suitably defined plan or pathway to achieve that outcome.
TCFD	Taskforce on Climate-related Financial Disclosures. For more information see www.fsb-tcfd.org/about.
Transition case	Woodside uses this term to refer to the methodology Woodside applies to helps us manage risk by assessing investment opportunities across a range of climate-related factors.

UNITS OF MEASURE

A$	Australian dollars
bbl	barrel
bcm	billion cubic metres
boe	barrels of oil equivalent
EJ	Exajoule
g / kg	Grams / Kilogram
GJ	Gigajoule
GW	Gigawatt
GWh	Gigawatt hour
ktpa	thousand tonnes per annum
kW	Kilowatt
MJ	Megajoule
MMBtu	Million british thermal units
Mt	Million tonnes
Mtpa	Million tonnes per annum
MW	Megawatt
MWh	Megawatt hour
Sm³	Standard cubic metre
Tonnes (t and kt)	In this report, "t" means tonne and "kt" means kilotonne, being one thousand tonnes.
tpd	Tonnes per day
US$	US dollars

1 UNEP, 1992. "Convention on Biological Diversity". https://www.cbd.int/doc/legal/cbd-en.pdf
2 IFRS Foundation, 2021. "Climate Related Disclosures Prototype", Appendix A. https://www.ifrs.org/content/dam/ifrs/groups/trwg/trwg-climate-related-disclosures-prototype.pdf The IFRS published a further consultation document subsequent to the 2021 prototype. As it did not contain a updated definition of Paris-Aligned scenarios Woodside has retained use of the previous edition. Definition as per the Australian Clean Energy Regulator https://www.cleanenergyregulator.gov.au/Infohub/Markets/cert-report/cert-report-2023/cert-2023-glossary.
3 World Resources Institute and World Business Council for Sustainable Development, 2004. "GHG Protocol: a corporate accounting and reporting standard" https://www.wbcsd.org/Programs/Climate-and-Energy/Climate/Resources/A-corporate-reporting-and-accounting-standard-revised-edition
4 Australian Clean Energy Regulator, 2023. "Corporate Emissions Reduction Transparency report 2023" https://www.cleanenergyregulator.gov.au/Infohub/Markets/cert-report/cert-report-2023/cert-2023-glossary
5 IPCC, 2018: Annex I: Glossary [Matthews, J.B.R. (ed.)]. In: Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty [Masson-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA, pp. 541-562. https://doi.org/10.1017/9781009157940.008

Index

TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES (TCFD) AND SUSTAINABILITY ACCOUNTING STANDARDS BOARD (SASB)

Index to TCFD recommendations and supported recommended disclosures[1]	**Pages**
Governance: Disclose the organization's governance around climate-related risks and opportunities.	
Describe the board's oversight of climate-related risks and opportunities.	11-12
Describe management's role in assessing and managing climate-related risks and opportunities.	12
Strategy: Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.	
Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	57-63
Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	14-41, 43, 49-53, 57-63
Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	49-53
Risk Management: Disclose how the organization identifies, assesses, and manages climate-related risks.	
Describe the organization's processes for identifying and assessing climate-related risks.	57-61
Describe the organization's processes for managing climate-related risks.	57-58
Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	11-12, 57-58
Metrics and Targets: Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material	
Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	12, 14-21, 23, 34, 75-76
Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	21, 30, 40, 57-63, 72-73
Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.	6-7, 12, 14-19, 23, 34, 75-76

Index to selected relevant SASB metrics[2]	
EM-EP-110a.1 Gross global Scope 1 emissions, percentage methane, percentage covered under emissions-limiting regulations	72-73
EM-EP-110a.2 Amount of gross global Scope 1 emissions from: (1) flared hydrocarbons, (2) other combustion, (3) process emissions, (4) other vented emissions, and (5) fugitive emissions	72-73
EM-EP-110a.3 Discussion of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	14-31

1 Financial Stability Board 2017. "Recommendations of the Task Force on Climate-related Financial Disclosures. Final Report." Figure 4, pp. 14.
2 Sustainability Accounting Standards Board 2018. "Oil & Gas – Exploration and Production. Sustainability Accounting Standard. Version 2018-10." Table 1, pp. 6.

Disclaimer, risks, emissions data and other important information

1. This report has been prepared to provide our investors and potential investors with information on our plan to help us achieve our strategic aim to thrive through the energy transition and how we are progressing against that strategic aim.
2. This report has been structured to address the Task Force on Climate-related Financial Disclosures (TCFD) recommendations framework. It aims to provide a balance of disclosures that meet the recommendations of the TCFD, while avoiding overwhelming readers with information. Woodside considers that it addresses TCFD's four recommendations and eleven recommended disclosures, having had regard to the Guidance for All Sectors and Supplemental Guidance for Non-Financial Groups. Our approach to the disclosures included in this report differs from our approach to the disclosures we include in our mandatory regulatory reports, including our filings with the Australian Securities Exchange (ASX), the U.S. Securities and Exchange Commission (SEC) and the London Stock Exchange (LSE). This report is intended to provide information from a different perspective and in more detail than that required to be included in other regulatory reports, including our filings with the ASX and the SEC.
3. This report has not been prepared as financial or investment advice or to provide any guidance in relation to our future performance. It should be read in conjunction with our periodic reporting and other announcements made to the ASX, SEC and LSE.
4. This report is not intended to, and does not constitute, form part of, or contain an offer or invitation to sell to Woodside (or any other person) or a solicitation of an offer from Woodside (or any other person) in any jurisdiction.
5. Given the focus of this report, it is necessarily oriented towards future events and contains forward looking information regarding the plans, strategies, objectives, targets, aspirations and the like of Woodside in relation to climate change.
6. This report is designed to provide a level of insight into how we currently intend to direct the management of our assets and to deploy our capital, to help us achieve our strategic aim. The matters disclosed in this report are a 'point in time' disclosure and reflect management's expectations, judgments, assessments, assumptions, estimates and other information available at the date of this report and/or the date of our planning processes. We operate in a dynamic and uncertain market and external environment. Plans and strategies can and must adapt in response to dynamic market conditions, joint venture decisions, new opportunities that might arise or other changing circumstances. Investors should not assume that any plan (including any pathway we have articulated to achieve a strategic aim) is locked in and will not evolve and be updated as time passes. Additionally, a number of aspects of our plans involve developments or strategies that are complex and may be delayed, more costly than anticipated or unsuccessful for many reasons, including reasons that are outside of Woodside's control.
7. Actual performance against Woodside's targets (including items that are described as a target) and aspirations or goals may be affected by various risks associated with the Woodside business, the uncertainty as to how the global energy transition to a lower carbon economy will evolve, and physical risks associated with climate change, many of which are beyond Woodside's control. Further detail on certain of these risks can be found in the Risk Management section of this report and the Risk Factors section of our Annual Report 2023. These risks include, but are not limited to:
   - The risk that a transition to a lower carbon economy may impact demand (and pricing) for oil, gas, new energy products and lower carbon services and their substitutes, the policy and legal environment for their production, our reputation and our operating environment. Further, the imposition of further regulation and the availability and cost of emission allowances or carbon offsets could adversely impact costs of operations;
   - The potential for higher than expected costs of transition to new technologies, and poor efficacy of new technologies that could adversely impact the costs of operations and reduce demand for hydrocarbon products, new energy or lower carbon services; and
   - The decarbonisation plans of other countries.
8. Readers, including investors and prospective investors, should review and have regard to these risks and the other risks identified in this report when considering the information contained in this report. Readers should also note that the high degree of uncertainty around the nature, timing and magnitude of climate-related risks, and the uncertainty as to how the energy transition will evolve, makes it difficult to determine and disclose the risks and their potential impacts with precision.

9. There are inherent limitations with scenario analysis, including the limitations set out on pages 44-45 of this report, and it is difficult to predict which, if any, of the scenarios might eventuate. Scenario analysis relies on assumptions that may or may not be, or prove to be, correct and that may or may not eventuate and scenarios may also be impacted by additional factors to the assumptions disclosed. As part of its scenario analysis, Woodside has used climate scenarios published in the IEA's 2023 World Energy Outlook (pages 52-53 of this report describes limitations and uncertainties associated with the use of the IEA scenarios).[1]
10. The forward looking statements contained in this report are not guidance, forecasts, guarantees or predictions of future events or performance. No representation or warranty, express or implied, is given as to the accuracy, completeness or correctness, likelihood of achievement or reasonable basis of any forward-looking information contained in this report. Readers are cautioned not to place undue reliance on any forward looking statements contained in this report, particularly in light of the long time horizon which this report discusses and the inherent uncertainty in possible policy, market and technological developments in the future.
11. The forward looking information contained in this report may be affected by a variety of variables and changes in underlying assumptions which could cause actual results to differ materially from those expressed in the statements contained in this report. In addition to the risks referenced above, these include price fluctuations, actual demand, currency fluctuations, drilling and production results, reserve estimates, loss of market, industry competition, environmental risks, transition risks, physical risks, legislative, policy, fiscal and regulatory developments, changes in accounting standards, economic and financial market conditions in various countries and regions, political risks, abatement able to be delivered through engineering or operational changes, project delay or advancement, approvals and cost estimates. Some matters are subject to approval of joint venture participants. The targets, aspirations and opportunities described in this report may also change materially if Woodside changes its strategic aim set out in this report. For more information, see the Forward-Looking Statements section of our Annual Report 2023.
12. Woodside does not undertake to provide ongoing market updates on forward looking information, including its plans to achieve its strategic aim or targets, or on performance against its plans or targets, except to the extent it has a legal obligation to do so. Past performance cannot be relied on as a guide to future performance.
13. Subject to any terms implied by law which cannot be excluded, Woodside accepts no responsibility for any loss, damage, cost or expense (whether direct or indirect) incurred by you as a result of any error, omission or misrepresentation in information in this report.
14. This report does not include any express or implied prices at which Woodside will buy or sell financial products.
15. This report may contain industry, market and competitive position data that is based on industry publications and studies conducted by third parties as well as Woodside's internal estimates and research. While Woodside believes that each of these publications and third party studies is reliable and has been prepared by a reputable source, Woodside has not independently verified the market and industry data obtained from these third party sources and cannot guarantee the completeness or accuracy of such data. Undue reliance should not be placed on any of the industry, market or competitive position data contained in this report.
16. Certain other information contained in this report may be based on information prepared by third parties. Woodside does not make any representation or guarantee that this third party material is accurate, complete or up-to-date.
17. All greenhouse gas emissions data in this report are estimates, due to the inherent uncertainty and limitations in measuring or quantifying greenhouse gas emissions, including those uncertainties set out in the GHD Assurance Statement on page 83 of this report.
18. Further information regarding the calculation of Woodside's greenhouse gas emissions is contained in the supporting table of climate-related data provided on page 73 of this report.
19. There may be differences in the way third parties calculate or report greenhouse gas emissions compared to Woodside, which means third party data may not be comparable to Woodside's data.

1 The Task Force on Climate-related Financial Disclosures (2020). "Guidance on Scenario Analysis for Non-Financial Companies".

GHD assurance statement

Level 10, 999 Hay Street
Perth, WA 6000
Australia
www.ghd.com

Independent Limited Assurance Statement to the Directors and Management of Woodside Energy Group Limited – Climate-related data

What we found: Our Limited Assurance Conclusion

GHD Pty Ltd (GHD or we) has undertaken a limited assurance engagement in respect of the following selected Climate-related data for the calendar year ending 31 December 2023, presented in the Woodside Climate Transition Action Plan and 2023 Progress Report, Section 7.1 and on Woodside's website for the calendar year 2023:

Metrics	
Hydrocarbon Production	
– Total – equity (kt) and operated (kt)	– Sales (including Traded Hydrocarbon) – equity (kt)
Global Scope 1 and Scope 2 greenhouse gas emissions	
– Scope 1 and 2 emissions – equity (net) (kt CO_2-e)	– Scope 1 and 2 emissions - operated (gross) (kt CO_2-e)
– Scope 1 emissions – equity (gross) (kt CO_2-e)	– Scope 1 emissions – operated (gross) (kt CO_2-e)
– Scope 2 emissions - equity (gross) (kt CO_2-e)	– Scope 2 emissions – operated (gross) (kt CO_2-e)
– Equity offsets retired in respect of annual emissions (kt CO_2-e)	– Percentage of equity Scope 1 and 2 emissions covered under emissions limiting regulations (%)
Sources of equity Scope 1 greenhouse gas emissions	
– Fuel combustion (kt CO_2-e)	– Venting (kt CO_2-e)
– Flaring (kt CO_2-e)	– Other (kt CO_2-e)
Equity Scope 1 greenhouse gas emissions by country	
– Australia (kt CO_2-e)	– United States of America (kt CO_2-e)
– Trinidad and Tobago (kt CO_2-e)	
Methane	
– Methane emissions (greenhouse equivalent) – equity (kt CO_2-e)	– Methane emissions (greenhouse equivalent) - operated (kt CO_2-e)
– Percentage of equity gross Scope 1 and 2 emissions that are methane (%)	– Methane intensity – operated (t CH_4/kt total production)
– Methane intensity – equity (t CH_4/kt total production)	– Methane intensity – operated (Sm^3/Sm^3 marketed gas) (%)
– Methane intensity – equity (Sm^3/Sm^3 marketed gas) (%)	
Flared gas	
– Total flaring – equity (t) and operated (t)	– Flaring intensity – equity (t/kt) and operated (t/kt)
Global Scope 3 greenhouse gas emissions estimates	
– Total - Scope 3 emissions – equity (kt CO_2-e)	– Scope 3 emissions - downstream transportation and distribution – equity (kt CO_2-e)
– Scope 3 emissions - purchased goods and services, related to Traded Hydrocarbons - equity (kt CO_2-e)	– Scope 3 emissions - use of sold product, related to Woodside production – equity (kt CO_2-e)
– Scope 3 emissions - selected other upstream - equity (kt CO_2-e)	– Scope 3 emissions - use of sold product, related to Traded Hydrocarbons – equity (kt CO_2-e)
Greenhouse gas emissions intensity	
– Scope 1 emissions intensity – equity (gross) (kt CO_2-e)	– Scope 1 and 2 emissions intensity - equity (net) (kt CO_2-e)
– Scope 1 emissions intensity – operated (gross) (kt CO_2-e)	– Scope 1 and 2 emissions intensity - operated (gross) (kt CO_2-e)
– Scope 1 upstream facility emissions intensity – equity (gross) (kg CO_2-e/boe)	– Scope 1, 2 and 3 emissions intensity – equity (net) (g CO2-e/MJ)
– Scope 1 LNG facility emissions intensity – equity (gross) (kg CO_2-e/boe)	

Based on the procedures we have performed and the evidence we have obtained, nothing has come to our attention that causes us to believe that the selected matters are not prepared, in all material respects, in accordance with the Reporting Criteria detailed below for the reporting period 1 January 2023 to 31 December 2023.

Note, this engagement only provides assurance over the 2023 Climate-related data provided by Woodside and is not inclusive of climate metrics associated with revenue and other climate related disclosures.

Reporting Criteria

The Reporting Criteria used by Woodside for preparing the selected matters are set out in the Basis of Preparation documents provided by Woodside and in the Climate Transition Action Plan and 2023 Progress Report.

Woodside's Responsibility

Woodside is responsible for preparing the 2023 Climate-related data to be published within the Climate Transition Action Plan and 2023 Progress Report and Woodside website including the preparation of the selected matters in accordance with the Reporting Criteria. This responsibility includes selection of appropriate Reporting Criteria and the design, implementation, and maintenance of internal control relevant to the preparation of the 2023 Climate-related data that is free from material misstatement, whether due to fraud or error. GHG quantification is subject to inherent uncertainty because of incomplete scientific knowledge used to determine emissions factors and the values needed to combine emissions of different gases.

The basis of our conclusion: standards-based limited assurance

We conducted our limited assurance engagement in accordance with the Australian Standard on Assurance Engagements ASAE 3410 *Assurance Engagements on Greenhouse Gas Statements* (ASAE 3410). We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Our responsibility

Our responsibility is to express a limited assurance conclusion on the 2023 Climate-related data in the Climate Transition Action Plan and 2023 Progress Report and Woodside website based on the procedures we have performed and the evidence we have obtained. We conducted the limited assurance engagement in accordance with ASAE 3410. This requires that we plan and perform the engagement to obtain limited assurance about whether the subject matter is free from material misstatement. A limited assurance engagement undertaken in accordance with ASAE 3410 involves assessing the suitability of Woodside's use of the Reporting Criteria as the basis for the preparation of the selected matters, assessing the risks of material misstatement of the selected matters whether due to fraud or error. A limited assurance is substantially less in scope than a reasonable assurance engagement in relation to both the risk assessment procedures, including an understanding of internal control, and the procedures performed in response to the assessed risks.

What we did: Our assurance procedures

The procedures we performed were based on our professional judgement and included enquiries, observation of processes performed, inspection of documents, analytical procedures, evaluating the appropriateness of quantification methods and reporting policies, and agreeing or reconciling with underlying records. Our procedures included:

- Process owner enquiries and review of system documentation, obtaining an understanding of Woodside's reporting processes relevant to the selected matters and of Woodside's determination of its reporting boundaries and performed testing to confirm it appears to have been appropriately implemented.
- Testing Woodside's calculations of 2023 Climate-related data based on the activity data and applying appropriate conversion and emissions factors in accordance with the Reporting Criteria.
- Checking Woodside's presentation of the selected matters in its Climate Transition Action Plan and 2023 Progress Report, including that they were prepared in accordance with the findings from our limited assurance engagement.

Our Independence and Quality Control

We have complied with the relevant ethical requirements relating to assurance engagements, which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality, and professional behaviour. GHD applies Auditing Standard ASQM 1 *Quality Management for Firms that Perform Audits or Reviews of Financial Reports and Other Financial Information, or Other Assurance or Related Services Engagements* (ASQM1), and accordingly we maintain a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards, and applicable legal and regulatory requirements.

Inherent limitations

There are inherent limitations in performing assurance; for example, assurance engagements are based on selective testing of the information being examined and because of this, it is possible that fraud, error, or non-compliance may occur and not be detected. An assurance engagement is not designed to detect all misstatements, as an assurance engagement is not performed continuously throughout the period that is the subject of the engagement and the procedures are performed on a test basis. Our engagement did not include assurance of other information within the Climate Transition Action Plan and 2023 Progress Report and the Woodside website other than the selected matters, including no assurance provided in respect of previous years' comparative numbers for the selected matters.

Restricted use of our limited assurance statement: Only Woodside may rely upon it

This limited assurance statement has been prepared for a specific purpose agreed with Woodside. Whilst we accept that Woodside may publish this limited assurance statement in its Climate Transition Action Plan and 2023 Progress Report and website as evidence of the assurance it has obtained, our limited assurance statement is not suitable to rely on for anyone else for any purpose. Accordingly, we expressly disclaim and do not accept any responsibility or liability to any party other than Woodside for any consequences of reliance on this limited assurance statement for any purpose.

Michele Villa
Registered Greenhouse and Energy Auditor Category 2 (Audit Team Leader), GHD Pty Ltd
27 February 2024

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