NEW ENERGY STRATEGY AND PORTFOLIO

Thriving through the energy transition, providing energy for today and tomorrow

May 2024

ABOUT WOODSIDE ENERGY

At Woodside we provide energy to heat and cool homes, keep lights on, and support industry through our portfolio of oil and gas assets. But the science of climate change is clear: if the world is to limit temperature rise, it will need to change the way it produces and consumes energy. This process –sometimes called the "energy transition" – has already begun.

Our aspiration is to thrive through the energy transition with a low cost, lower carbon,[1] profitable, resilient, and diversified portfolio.[2]

To help meet this aspiration, we are assessing opportunities to invest in new energy products, such as hydrogen and ammonia, and lower carbon services,[3] such as carbon capture utilisation and storage, that can help avoid or reduce customer emissions.

To learn more about our Climate strategy and targets, please refer to our Climate Transition Action Plan & 2023 Progress Report.

OUR APPROACH

Scope 3 Targets[4]

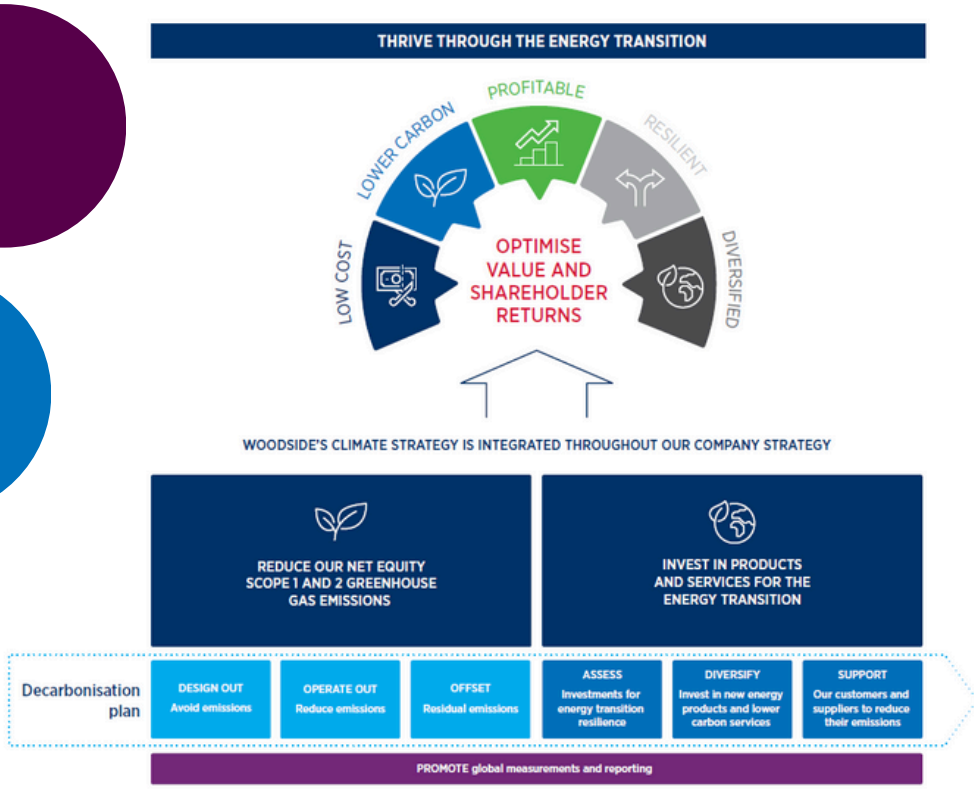
Target to invest **US$5 billion** in new energy products and lower carbon services by 2030.[5]

Target to take final investment decision on new energy products and lower carbon services by 2030 with a total abatement of **5 Mtpa CO_2-e**.[6]

Customer Collaboration
Working with customers to catalyse demand and develop the value chain for new sources of energy

New Energy
Targeting hydrogen, ammonia and emerging fuels production leveraging Woodside's core capabilities

Integrated Carbon Solutions
Developing carbon credits, CCS and carbon utilisation solutions to reduce emissions for Woodside and our customers



1. Woodside uses this term to describe the characteristic of having lower levels of associated potential greenhouse gas 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.
2. 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.
3. Woodside uses this term to describe technologies, such as CCUS or offsets, that may be capable of reducing the net greenhouse gas emissions of our customers.
4. 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.
5. 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.
6. 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.

WHY PARTNER WITH WOODSIDE

Through working with leading industry partners, we aim to combine our capabilities, solve collective challenges and create shared opportunities.

- Experienced and trusted energy partner with 35+ years of experience
- Growth opportunities across our three pillars of oil, gas and new energy
- Significant and credible global energy company
- Proven track record delivering multi-billion-dollar projects
- Customer focused

As we assess new opportunities, we will be commercially minded, focusing on progressing projects that are compatible with our capital allocation framework

- Meg O'Neill

Developing the Hydrogen Supply Chain

A key part of Woodside's new energy strategy is to work with others to develop a supply chain that enables customers access to the products and services they need as they secure their energy needs and reduce their emissions.

Since 2022, we've been collaborating with Korea Shipbuilding & Offshore Engineering (HD KSOE) and Hyundai Glovis to study the development of a flexible, cost-effective shipping solution for liquid hydrogen, a key part of the hydrogen supply chain.

In 2023, the collaboration 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 (MOL), one of the world's largest global shipping companies was welcomed to the collaboration as it plans to progress to the next phase in delivering an integrated marine transportation system to maximise delivery of new energy products.

Collaboration in Action

In April 2023, Woodside and Keppel Data Centres signed a non-binding Heads of Agreement (HOA) to evaluate the potential supply of liquid hydrogen to Singapore from Woodside's portfolio of planned production facilities.

The HOA provides a pathway for the parties to jointly develop further commercial principles for key hydrogen supply chain agreements and references the potential purchase of approximately 1000 tonnes per day of liquid hydrogen by Keppel Data Centres as early as 2030.

OUR NEW ENERGY PORTFOLIO

Woodside is developing a global portfolio of new energy products and lower carbon services.

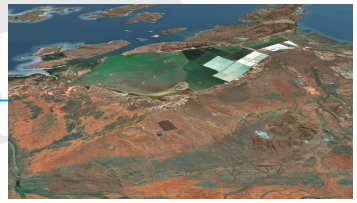
US Gulf Coast

Assessing potential locations for large-scale, lower carbon ammonia production facilities. Location has access to multiple export markets for power, marine and industrial sectors

H2Perth

Proposal for a commercial scale hydrogen and ammonia production facility. Land secured in industrial precinct with access to domestic and export markets.

Woodside Solar



Proposed solar facility expected to initially supply approximately 50 MW of solar energy to Pluto LNG. .

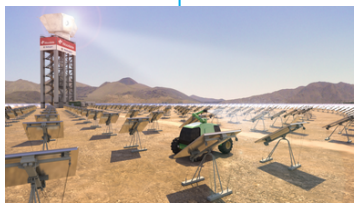
Hydrogen Refueller @ H2Perth

Proposed self-contained hydrogen production, storage and refuelling station, located in the Rockingham Industry Zone to service heavy duty transport.

H2OK

Proposed facility targeting up to 60 tonnes per day of liquid hydrogen, strategically located in Houston, Texas to service heavy duty transport and emerging markets.

Capella



Commercial scale demonstration project of a 5 MW concentrated solar energy system to advance a longer duration renewable power technology. Potential deployment to support our operations and future projects.

H2TAS

Proposal for commercial scale renewable hydrogen production for export as ammonia for domestic and export markets.

Southern Green Hydrogen

Proposal for renewable hydrogen and ammonia production facility, targeting up to 1,400 tonnes per day of ammonia.

See page 37 of the Climate Transition Action Plan and 2023 Progress Report for more information.

Conceptual images only, not to scale. Proposed facilities are subject to project approvals, regulatory approvals, commercial agreements and market demand.

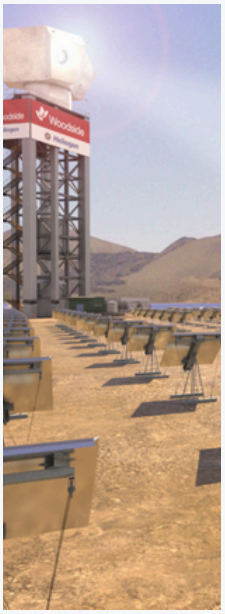
DEVELOPING HYDROGEN AND AMMONIA SOLUTIONS

As the energy transition progresses, Woodside expects demand to increase for hydrogen and ammonia and is focusing on delivering solutions to customers in four end-use markets.

	HEAVY DUTY TRANSPORT	POWER	SHIPPING AND AVIATION	INDUSTRIALS AND CHEMICALS
FOCUS	Decarbonisation of mobility sector (diesel substitution)	Decarbonisation of coal-fired power generation and firming renewables in the grid	Decarbonisation of maritime and aviation sectors and supply chains	Provide lower carbon[1] industrial feed stock and carbon capture and storage (CCS) in hard-to-abate sectors
BENEFITS	Line of sight to diesel parity Operational benefits vs. battery electric trucks	Diversifies supply and provides lower carbon[1] power Potential to expand into combined cycle gas turbines	May be a substitution for marine diesel and aviation fuel	May enable progressive displacement of existing ammonia and hydrogen supply produced from unabated fossil fuels
PROGRESS	H2OK technical readiness to support final investment decision reached	Joint feasibility study on ammonia supply chain from Australia to Japan	Exploring opportunities with potential partners and original equipment manufacturers	Exploring new opportunities across hard-to-abate sectors

EXPLORING COST-EFFECTIVE RENEWABLE POWER

Woodside Energy is collaborating on new solar technology in the US and Australia. Woodside is also evaluating early-stage onshore wind opportunities in Western Australia and Queensland.



Heliogen

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 Solar

Woodside is progressing the proposed Woodside Solar project, a facility which would initially generate electricity from a solar photovoltaic farm approximately 15 km south-west of Karratha in Western Australia complemented by battery energy storage system. The proposed solar facility is expected initially supply approximately 50 MW of solar energy to Pluto LNG.

OUR APPROACH TO CARBON MANAGEMENT

Woodside has a dedicated carbon business tasked with developing integrated carbon solutions. We have three focus areas – offsets, Carbon Capture and Storage (CCS) and Carbon to Products – each have key roles to play.

	OFFSETS	CARBON CAPTURE AND STORAGE (CCS)	CARBON TO PRODUCTS
FOCUS	To develop a portfolio of carbon credits and our skills and expertise in managing carbon credit integrity	Secure and accelerate CCS in Australia and beyond natural gas	Invest in technology advancement to convert carbon into useful products
BENEFITS	Available at scale now	Potential for large-scale CO_2 storage	Future conversion of carbon at source of generation
PROGRESS	Executed plan to secure offsets to meet Woodside's 2030 net emissions reduction targets[7] [8]	Awarded three licences to advance studies on CCS in Australia[9]	Completion of a number of engineering studies with carbon capture and utilisation (CCU) technology developed and engineering firms

CARBON CAPTURE AND STORAGE (CCS) OPPORTUNITIES

Angel CCS

Woodside led Joint Venture with BP Developments Australia Pty Ltd (bp), Japan Australia LNG (MIMI) Pty Ltd, Shell Australia Pty Ltd (Shell) and Chevron Australia Pty Ltd (Chevron) are developing a proposed multi-user carbon capture and storage facility for Woodside's depleted Angel Gas Field located north-west of Karratha, Western Australia.

The Angel CCS project has the potential to facilitate the development of new lower carbon[1] industries, such as the production of hydrogen and ammonia by providing a local solution for emissions. The proposed Project could be the first large-scale CCS facility with offshore storage in Australia and potentially one of the largest CCS hubs in the Asia Pacific.[10]

7. Amount of offsets includes those currently held in offset accounts, forecast yield from forward contracts and offsets related to land purchased for carbon origination projects (but not yet fully implemented). The offsets include Australian Carbon Credit Units and voluntary market offset units. Forecast includes offsets required up to and including 2030 and excludes retired units.
8. Woodside equity emissions abatement demand is based on current and sanctioned projects at current equity share as well as near- and medium-term net equity scope 1 and 2 greenhouse gas emissions targets.
9. The carbon capture and storage permits are subject to commercial agreements, regulatory approvals and being granted appropriate titles.
10. Media Release, Woodside-led Joint Venture Awarded Greenhouse Gas Assessment Permit in WA, September 2022.

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