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# Announcement

Monday, 18 March 2024

## THRIVING THROUGH THE ENERGY TRANSITION BRIEFING TRANSCRIPT

**Date:** 12 March 2024

**Time:** 09:30 AEDT / 06:30 AWST / 17:30 CDT (Monday, 26 February 2024)

### Start of Transcript

**Marcela Louzada:** Good morning, everybody, it's a pleasure to welcome you to Woodside's Climate Briefing Presentation, Thriving Through the Energy Transition, here in Melbourne. I would also like to welcome those joining us on the webcast. So, today we're meeting on the land of the Wurundjeri people, of the Kulin Nation. We acknowledge their continued connection to these lands and waters, and we pay our respect to Elders past and present, and honour their enduring traditions and culture.

Our presentation today will cover some of the key information of our Climate Transition Action Plan, and 2023 progress report. Please take the time to read the disclaimers, risk, and other important information. Let me remind you, that today's presentation should be taken in conjunction with our Climate Transition Action Plan, which includes more detailed explanation of the assumptions, uncertainties, and context, relevant to the information presented today.

All dollar figures are in US dollars, unless otherwise indicated. And after the presentation, we will have a question-and-answer session. So please submit your questions through the Slido app, or Slido website, and use the code you have been emailed for today's event. So, let's start with some opening remarks from our Chair, Richard Goyder.

**Richard Goyder:** Thank you for joining us at our climate briefing day. As Woodside shareholders, you have made your expectations clear, as we navigate the energy transition. Our governance of climate change reflects its strategic importance to our Company. We must not only seek to thrive through the energy transition, but show how we will thrive. Our Climate Transition Action Plan is intended to do exactly that.

We've listened, and are acting on your feedback. 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 business will be competitive, and how we will achieve our Scope 1 and 2 emission targets. In this session, Meg will talk about how Woodside is responding on these, and other critical areas of climate performance, and risk management. I want to assure you that Meg and her team are fully aligned with the Board's expectations on climate strategy.

As part of a continuous review of Board skills, and composition, changes were made to enhance our Board, and committees, in 2023. The intention is that Woodside's Board is best placed to support our global operations, as well as our strategic growth opportunities through the energy transition. Accountability for our performance on emissions reductions, and new energy projects, is critical to our success. Therefore, from 2024, we're elevating the link between executive remuneration, and progress in achieving these outcomes. Climate metrics will make up 15% of the total scorecard. Of this, 70% will be weighted to Scope 1 and 2 emissions performance, and 30% will be based on new energy project progress.

Going forward, we'll publish regular reports as we advance, with a vote on updated plans proposed three years from now, or sooner, should we believe it's necessary. And we'll continue to seek regular feedback from our shareholders. The Board believes that Woodside has an important role to play in the transition, and to deliver lasting value to our shareholders while doing so. Our Climate Transition Action Plan will be put to an advisory vote of shareholders at our AGM this year. It is a thorough, and clear, review of our plans, our progress, and our challenges. And I believe it deserves the firm support of our shareholders.

Today's an opportunity to continue our engagement with you, and I thank you again for joining us. Now, I'll hand over to Meg, who will take you through our plans.

**Meg O'Neill:** Good morning, everyone, and thank you for joining us, whether you're here in person, or online. We are presenting today from Melbourne, and I would like to begin by acknowledging the traditional custodians of this land, the Wurundjeri people of the Kulin Nation, and pay my respects to Elders past, present, and emerging.

I appreciate your interest in our Company, and our strategy. It is beyond doubt that the world must decarbonise. Responding to climate change is one of the most urgent challenges we face, and the energy sector must respond with solutions. At Woodside, we are finding and progressing these solutions, and our Climate Transition Action Plan and 2023 Progress Report, is the result of an intensive effort to identify, map, and action more.

You'll notice our 2023 report is different to previous disclosures, and that's thanks to you, our investors. You've given us detailed feedback on the climate topics you'd like to hear more about from us, and we've listened carefully. My presentation today will be in this spirit. Transparency is central to building trust through the energy transition, and we are committed to earning, and maintaining, yours.

Now a key question we get from investors – and it's an understandable one – is why we are confident our business will be one that is resilient to the energy transition? The answer is, Woodside exists as a business, not only to be resilient, but to thrive. Our strategy is underpinned by three priorities, providing energy, creating and returning value, and conducting our business sustainably.

We are providing reliable, competitive supply to our customers now, and we have firm conviction there will be sustained demand for our products and services into the future. Examples highlighting the strength of this demand, are our recent deals with LNG Japan, and JERA. These two companies are buying equity in the Scarborough Energy Project, as we are also on discussions with them for the sale of LNG. An indication that Scarborough will be positioned to create, and return value, for decades to come.

We will be customer led, as we continue to create and return value. This is because we can only supply products profitably, when we have customers who buy them. This goes for traditional and new energy. And on conducting our business sustainably, we are on track to meet our 2025, and 2030 net equity Scope 1 and 2 targets. We have also announced a complementary Scope 3 target. These are all key topics to highlight as we explain why our strategy is designed for the energy transition.

The energy transition has clearly begun, and needs to succeed, but there is no single, or certain, pathway through it. It's why diversification, and adaptability will be crucial to the success of energy businesses. The diagram, on the right of page 6, explains how we think about this. The arc across the top is a summary of our broad company strategy. It's focused on optimising value, and shareholder returns. Below are the key

elements of our climate strategy, which are integrated into our company strategy. And they are, reducing our net equity Scope 1 and 2 emissions, and investing in products and services for the transition.

We know that the success of our strategy relies on meeting our climate goals. Our targets are critical, and we are on track to meet them. Our first target is to reduce our net equity Scope 1 and 2 emissions 15%, below our starting base, by 2025. In 2023 we reduced our emissions to 12.5% below this, and are on track to meet our target next year. We achieved this by designing and operating out emissions, and using carbon credits as offsets. We aspire to achieve net zero equity Scope 1 and 2 emissions by 2050, or sooner.

We have now completed asset decarbonisation planning, identifying a pathway to achieving this goal, with a clear emphasis on design-out and operate-out solutions. Already, work is underway – sorry – work is planned, to implement changes that will aim to avoid and reduce a total of 28 million tonnes of CO<sub>2</sub> equivalent. Emissions avoidance will be achieved by changes to the way we design our facilities, while emissions reductions are achieved through the way we operate them.

Turning to Scope 3, in 2021 Woodside set a Scope 3 investment target, aiming to invest \$5 billion in new energy products, and lower carbon services, by 2030. At the end of 2023, we had cumulatively spent more than \$335 million towards this target, meaning expenditure was up 135% in 2023, compared to the prior year. In February we announced a new complementary Scope 3 target, to track the potential impact of our new energy products, and lower carbon services, on helping customers reduce their emissions.

The new emissions abatement target is to take final investment decisions on new energy opportunities by 2030, with total abatement capacity of 5 million tonnes, per annum, of CO<sub>2</sub> equivalent. Now, importantly, these targets are not a ceiling. If customer demand accelerates, the opportunities available to us will grow too. Continuously assessing demand for our products, through the energy transition, is key to our strategy.

And central to our strategy is our understanding of pathways consistent with the Paris Agreement. The temperature goals of the Paris Agreement are to limit the increase in the global average temperature, to well below 2 degrees Celsius, above pre-industrial levels, and to pursue efforts to limit the temperature increase to 1.5 degrees Celsius. These goals were reaffirmed by world leaders at the COP28 Climate Summit in December, with the importance of the 1.5-degree goal underscored, and resolutions made to pursue it.

Now, for some stakeholders, to be Paris-aligned means no new investment in oil and gas, but let's have a look at the science. In its recent sixth assessment report, the United Nations Intergovernmental Panel on Climate Change reviewed and included 97 pathways that could achieve the 1.5-degree goal, with limited or no overshoot. The levels of gas demand in those 97 pathways are shown in the grey area on the chart on page 8. You can see there is a very wide range.

Many of you have asked me whether there is a need for new gas investments, in order to meet these potential levels of demand, in a world that limits warming to 1.5 degrees. The answer is, without investment, supply levels will fall, as older gas fields deplete. The blue lines on the chart show estimates from the international agency. The pale blue line shows estimated decline in supply, if investment stops. And the darker blue line shows the decline in supply, if investment continues, but is limited to gas projects that are operating, or have been approved for construction already. This decline in supply is consistent with meeting demand in some 1.5-degree pathways, but well below demand in others.

Now, let me be clear, Woodside is not picking any one pathway, and asserting it is certain. But equally, no new investment is not the only route to world meeting its Paris goals. So, coming back to why I believe the approach Woodside is taking is Paris-aligned. First, we have a pathway to meeting our aspiration to achieve net zero equity Scope 1 or 2 emissions by 2050, or sooner. It will be challenging, but the options are clear.

Secondly, we stress test the financial performance of our current portfolio – including our sanctioned projects like Scarborough, Sangomar, and Trion – against climate scenarios. And the portfolio continues to generate free cashflow in the decades ahead, even with pricing that reflects the IEA's net zero roadmap scenario.

Third, we test our future investment opportunities for their relationship with the energy transition, including testing the impact of 1.5-degree pathways in the science.

Now, let's take a look at why gas demand remains resilient in many climate pathways. For many decades, access to reliable energy has been key to economic growth. And this will remain true through the energy transition. But now, the challenge is to fuel growth, while reducing emissions. Gas can be part of this aim.

This is because gas has many uses, including as a source of heat for industry, and as a chemical feedstock. And some of these will be hard to abate. In addition, when used to generate electricity, gas typically produces half the lifecycle emissions of coal. Gas can also provide backup support for electricity grids, powered by renewables and batteries.

The chart on the right of page 9, looks at the energy mix of several Australian markets, and shows how a gas renewables mix can generate power at lower emissions intensity, than a coal dominated mix. Take South Australia, more than two-thirds of its power is generated by renewables, with gas almost making up the remaining third. Here in Victoria, it's a different story, with the grid mainly relying on brown coal, at this time.

Now, key numbers are at the top of the bars, each state's emissions intensity. As you can see, Victoria's is three times higher than South Australia's. This example underlines why gas is an attractive proposition for coal dependent economies to decarbonise. Now, if we look at the fuel mix in key Asian customer markets on page 10, there is significant dependence on coal. This represents an opportunity for a further shift towards gas, to support decarbonisation.

To give context to an Australian audience, Japan's primary energy use is nearly three times more than Australia's. And China uses more than 25 times as much energy as Australia. So, the opportunity for Woodside is significant. It also underscores one of Woodside's competitive advantages, and that is the proximity of our LNG operations to Asia. Other advantages include our worldclass LNG plant reliability – which was 98% last year, for our operated assets – and our strong customer relationships, based on reliable, competitive supply.

Now, as I touched on earlier, we have developed a transition case methodology, to guide robust assessment of future investment opportunities. Our aim is to test that our investments are competitive through the transition. The transition case assesses financial attractiveness in a range of climate scenarios. And it also considers the impact of an opportunity on our portfolios emissions intensity. Our capital allocation framework is a key feature of our transition case methodology.

As you can see on page 3 [Clarification: page 13], for oil projects, we target in internal rate of return – or IRR – of more than 15%, and payback within five years. For gas, the IRR target is greater than 12%, and payback within 3 years. For new energy, we aim for an IRR of 10%, with payback over 10 years. Now these rates of return, and payback periods, reflect the different risk reward balance of the products. The risk reward balance is affected by more than just climate change, but let's zoom in on how they each relate differently to the risk and opportunities of the energy transition.

Oil has a typically faster payback period than gas, so it is less exposed to the longer-term uncertainty of the transition. Take Trion, its expected payback period is within 4 years of startup, and two-thirds of the resource is set to be produced within the first 10 years. LNG projects are typically longer-term investments, with stable cashflows, and we expect sustained demand for LNG over a longer period in the transition, for the reasons I have already spoken about. Now, new energy is an emerging market. It's lower IRR, and longer payback period, makes sense for several reasons, including resource certainty. For example, if you compare a hydrogen project to an oil and gas field, you don't have to drill to know how much hydrogen you have. As long as you have power, and water – needed for electrolysis – you can create the hydrogen.

So, regardless of the commodity we must remain focused on the business case, and shareholder value. Our transition case methodology supported Woodside's positive final investment decision on Trion, and as you can see on page 14, we expect Trion's IRR to be more than 16% and to achieve payback in under four

years. Trion also meets our demand resilience criteria, because we expect continued demand for oil across a range of transition pathways, in the relevant timeframe of its production. And with the addition of Trion, Woodside's portfolio will remain less carbon intensive than the current industry average, including for Scope 3 emissions intensity.

Trion is also an example of our commitment to avoiding emissions in the way we design projects. The video we're now going to show, explains our approach to emissions avoidance, and asset decarbonisation.

### [Video playing]

**Meg O'Neill:** At Woodside, we are focused on reducing emissions, and have been for years. Liz has just taken you through a number of examples, but I know there's been significant interest in Woodside's use of offsets, relevant to our overall emissions performance. To put this in context, I'd like to talk about our gross emissions performance, which is before the use of offsets.

We estimate our avoided emissions by comparisons to benchmarks. In our Climate Transition Action Plan, we have provided two credible benchmarks that estimate the global average emissions intensity of oil and gas operations. These estimates are from Wood Mackenzie and the International Energy Agency. In 2023 our underlying Scope 1 and 2 performance, our gross emissions intensity, was lower and better than comparable energy portfolios based on these benchmarks. This is because of the intrinsic characteristics of our oil and gas resources, the design of our facilities, our 2016 to 2020 energy efficiency target, and the implementation of asset decarbonisation plans.

All these factors have contributed to avoiding emissions, and they are depicted on the chart on the right, in the light grey. Now, these are hard to measure, because they didn't happen. But they are the consequence of our hard work, and the quality of our assets and resources. Woodside is also achieving lower methane emissions intensity than the oil and gas industry average.

We aspire to achieve net zero equity Scope 1 and 2 emissions by 2050 or sooner. To this end, we have completed asset decarbonisation planning across our operated portfolio. Already we have incorporated design features into our Scarborough, Pluto Train 2 and Trion projects that would avoid an estimated 16 million tonnes of CO<sub>2</sub> equivalent between now and 2050. We are at work on around a further 70 opportunities at existing assets that we estimate could avoid roughly 12 million tonnes of CO<sub>2</sub> equivalent. These opportunities could have a combined cost of around \$200 million.

We are also considering large scale abatement options to retrofit LNG facilities that we estimate would cost more than our \$80 a tonne internal long-term cost of carbon. These projects would use existing technology but be challenging to deploy cost effectively at existing facilities, so we are fine tuning the concepts with cost reduction in mind. Our strategy gives us the flexibility to invest in projects that deliver the biggest emissions reduction we can for every dollar we spend.

In addition to our work in designing and operating out emissions, we also used carbon credits to offset emissions and help us achieve our 2023 net equity reduction. Offsets remain an important part of the global toolkit to abate carbon and achieve the world's net zero goals and for us to achieve our targets. At Woodside we have a high-quality carbon credit portfolio. Carbon credits are assessed against criteria designed to ensure abatement is demonstrably additional and has a high likelihood of permanence. We source credits issued by established standards bodies and we independently verify them.

Our approach to portfolio creation is informed by frameworks, including the Oxford Principles for Net Zero Aligned Offsetting. We aim for geographical diversity in our carbon credit portfolio, generated from projects here in Australia and overseas. And our current portfolio is sourced from the Australian carbon credit scheme, Verra and Gold Standard. We have another video now looking at opportunities that could help our customers avoid or reduce their Scope 1 and 2 emissions and therefore reduce the overall lifecycle emissions intensity of our portfolio.

## [Video playing]

**Meg O'Neill:** As Shaun mentioned in the video, we will be customer led when it comes to hydrogen production and CCS. World leaders at COP28 called for an acceleration of both these technologies. Looking at hydrogen on page 20, demand is expected to build in the coming decades. The progress in securing hydrogen offtake has been slower than originally anticipated. We will continue to maintain discipline in our investment approach and we will make positive final investment decisions on hydrogen opportunities when we are confident they are compatible with our capital allocation framework. So we are working with potential customers to develop demand.

We have a number of hydrogen opportunities in our portfolio, including H2OK. In 2023, we took a positive final investment decision on the H2 refueller at H2 Perth, a hydrogen production storage and refuelling station targeting the domestic trucking industry. This project is smaller in scale with initial production expected to be 0.2 tonnes per day of hydrogen and it is really intended to stimulate demand and demonstrate capability.

The demand outlook is similar when we look at CCS on page 21. It builds in future decades. Our most mature operated carbon capture and storage opportunity is Angel CCS. Angel has the potential to store carbon from our operations as well as helping Australian and international customers decarbonise. As we assess new opportunities, we will be commercially minded, focusing on progressing projects that are compatible with our capital allocation framework.

Scope 3 emissions make up the bulk of our emissions profile. In 2023 we estimate our equity Scope 3 greenhouse gas emissions totalled more than 70 million tonnes per annum of CO<sub>2</sub> equivalent. New energy products like hydrogen and lower carbon services like CCS can help our customers avoid or reduce their Scope 1 and 2 emissions and therefore reduce the overall lifecycle emissions intensity of our portfolio. Our Scope 3 targets will help us track progress towards the potential abatement impact.

Before I close, I would like to highlight page 9 of our Climate Transition Action Plan and 2023 progress reports. This page directs you to the content that investors asked us to include in our disclosures. We are pleased to have shared this information on topics including progress against our target, our approach to using offsets and our Scope 3 emission sources.

As Richard said at the start of the session, accountability is critical to our success. For this reason, the Board has made changes to its composition and committees to best support our global operations, our climate strategy and growth opportunities through the energy transition. In addition, our executive team's performance based pay is linked to the delivery of our climate strategy.

In particular, the 2024 executive scorecard will include targets for Woodside's gross Scope 1 and 2 emissions performance, meaning before the use of offsets. Similar metrics will apply for employee remuneration, so everybody in the company has common alignment. We have also reviewed our industry association membership to include an assessment of whether an association's activities support the goals of the Paris Alignment [Clarification: Paris Agreement].

We've covered a lot of information here today. The key messages I'd like to leave you with are (1) we strongly believe there will be sustained demand for our products through the transition; (2) we are progressing new energy products and lower carbon services; and (3) we are on track to meet our net equity Scope 1 and 2 targets. And we will keep listening and responding to you as we provide the energy solutions our customers need and as the world strives to meet its climate goals.

We will now open up for questions and answers and I have a few members of my executive leadership team with me here today, Graham Tiver, our Chief Financial Officer; Liz Westcott, Executive Vice President Australian Operations; Shaun Gregory, Executive Vice President New Energy; and Tony Cudmore, Executive Vice President Strategy and Climate. I'll now hand over to Marcela to run the Q&A session.

**Marcela Louzada:** Okay, thank you Meg. For those in the room, please just raise your hand and we can welcome your questions. Those joining us through the webcast, please submit your questions via the Slido app or the Slido website and use the links and the codes provided by email. We will try to go through as many questions as possible and then the IR team will follow up on any remaining questions afterwards.

So with that, let me check is there any question in the room?

**Unidentified Participant:** Thanks Meg. So my question is the market scepticism about CCS, which I think is global scepticism, it's not just Australia, how much research have you done on the Gorgon CCS given that you were very confident about Angel? Do you think there is significant difference between what you're doing versus what Gorgon's doing?

**Meg O'Neill:** Yes, look let me give some high-level comments and then I'll invite Shaun to give some specific projects on the Gorgon project. First and foremost, CO<sub>2</sub> sequestration has been used for decades. It started being used in the United States for enhanced oil recovery, so the industry has tremendous experience injecting CO<sub>2</sub> in subsurface formations. In Norway, at the Sleipner field, there is a 10-year [Clarification: over 25 year] operational history of CO<sub>2</sub> sequestration offshore. So the technology is proven. In Australia, Gorgon has had some challenges and let me invite Shaun to speak to what we know about Gorgon and why Angel is different.

**Shaun Gregory:** Yes, thanks Meg. So I think one of the advantages of the Angel joint venture is we have Chevron as a joint venture partner and they've been really open and transparent about their lessons learnt on Gorgon. I think one of the things that differentiates Angel to Gorgon is it's a much simpler CCS project. It's injecting into a depleted gas field that we have known well. Angel produced for 10 years and so we understand that reservoir really well and it's empty now and it's a much simpler design. I think that's one of the key lessons that Chevron has shared on Gorgon. They've been very open with us.

I think the other thing with Gorgon is to respect that actually it's operating today and millions of tonnes per year of CO<sub>2</sub> are being sequestered, so it's not at design capacity, which they're working on, but it's certainly successful from sequestering CO<sub>2</sub>.

**Meg O'Neill:** Thanks Shaun.

**Marcela Louzada:** Thanks Shaun, any other questions in the room? Rob?

**Rob Koh: (Morgan Stanley, Analyst)** Good morning, Rob Koh from Morgan Stanley. Thank you very much for the preso this morning. I wonder if you could just talk to two things, firstly what your company's efforts are for a just transition, which is part of the action plan. Then also I just want to understand what the company will do when it comes to difficult choices. Say you've got your \$5 billion investment target, but this gentlemen here isn't going to let the company invest that money poorly and have you got sufficient pipeline of opportunities such that you are super confident in \$5 billion? Just any dynamic on that, please.

**Meg O'Neill:** Excellent, thanks for the question, Rob, or the two questions. So for just transition, we recognise the importance of a just transition for customers, employees, the communities where we operate and who benefit from our operations. And we acknowledge that energy transition will change the way we conduct our business. Now for a transition to be just, it will require collaboration between all stakeholders, so governments, industries and communities and we are involved in a number of international partnerships to understand where we might improve our approach on this front.

But perhaps at a high level, Rob, if you think about just transition as it impacts the communities where we employ people, our anticipation and our goal is to continue operating in Karratha for many decades to come, so the transition for us is really to continue to be able to invest in Karratha, invest in those local communities and continue to provide meaningful work, high paying jobs to people that live in that remote part of Western Australia.

On the question of the \$5 billion, you've absolutely highlighted tension within the business, that we need to make sure that any investment we take meets our capital allocation framework and will deliver value to our shareholders. And it's fascinating, Rob, so there are shareholders who would say we shouldn't mess around with this stuff at all and then there's shareholders who would say please just take an investment decision so you can demonstrate you're quote-unquote doing something. We're taking a path that I think is the best path for Woodside shareholders, which is to be fiscally disciplined while continuing to progress these opportunities.

H2OK is the most advanced project. We were ready and we're technically ready to take an investment decision, but because we were unable to secure sufficient customer offtake, we paused that decision. The reason we were unable to secure offtake was because of some complexities around how the IRA is being implemented and we're engaged in consultation with the US Government on levers they can pull to make those tax credits more accessible, which will bring prices down, which will bring customers to the table. So it's a balance. Again, we've got sufficient opportunity space in our pipeline to spend the \$5 billion, but we will be disciplined about making sure we can sell those products to customers at a profit.

**Marcela Louzada:** Thanks Meg. Next one in the room and then we will do one online.

**Tom Allen: (UBS, Analyst)** Thanks very much, Tom Allen from UBS. Just following on the last question, Meg, recognising there is some commercial challenges that the H2OK project is facing, just to give more credibility and weight to that \$5 billion investment target by 2030, are you able to provide some guidance of portioning out that \$5 billion to specific projects? Just confirming whether or not the Angel and Bonaparte CCS projects are still in desktop work only or if there's genuine fieldwork that's occurring at the moment.

**Meg O'Neill:** Sure, so thanks for the question. In the Climate Transition Action Plan we've got detail on each of our hydrogen projects and each of our CCS projects that talk to the state of maturity. H2OK is the most advanced; we have ordered long-lead items there, we have contracts in hand for water supply, for power, so that is by far the most advanced project. The other projects are in the technical evaluation stage.

Let me invite Shaun to talk about where we're going with the hydrogen and CCS projects.

**Shaun Gregory:** So to answer your question, Angel made its concept select gate last year, so it's in pre-FEED. It won't enter FEED until there's better customer certainty around CO<sub>2</sub>, so the goals are complete the engineering design to enter FEED and secure the customers sufficient to provide confidence that you'll get to that five million tonnes of the planned capacity. Bonaparte is a much earlier stage, there's technical testing that needs to be done on that reservoir and when an operator is there, they're planning to drill in the next 12 months to test that reservoir. That's not needed on Angel due to our prior knowledge.

The other hydrogen projects, again most of the conversation on the hydrogen projects currently is with customers, so it's not just customers in end use, but also the supply chain, so shipping, storage, offloading and then end use. So a good example is recent agreements that we made with both JERA and LNG Japan, both include engagements on new energy for that whole supply chain. Technically we're making sure we balance that technical engineering progress with the commercial, with customers and so they both have to go in at the same time.

**Meg O'Neill:** Thanks Shaun.

**Marcela Louzada:** Thanks Shaun. So let's take the first question from the line from Dale Koenders with Barrenjoey. Can you please provide a breakdown of what was delivered from the \$335 million spend since 2021 or is this largely purchasing offsets, staffing and desktop studies?

**Meg O'Neill:** So the \$335 million is capital spend, it does not actually include any of those things that Dale has called out, so the new energy organisation is part of our G&A costs [Clarification: \$335 million includes capital long lead items, pre-FEED and FEED studies and staffing associated with specific opportunities and is inclusive of capitalised and expensed spend]. Offsets, because the offsets are largely used in the existing



business. Those are charged against the existing business. So the \$335 million is capital investment [Clarification: capitalised and expensed spend], it includes investment in some partner companies who we believe have technologies that will be advantageous for the transition and for our CCUS activities and long lead items for H2OK.

As you would have seen from the presentation today, we have electrolyzers being manufactured, so as I said, we are well advanced with the technical work for this project. We have made financial commitments for the critical path activities and we are cautiously optimistic that we'll get clarity from the US Government on the production tax credit and be able to take an investment decision this year.

**Marcela Louzada:** Thanks Meg. Perhaps another one from the line and then we will go back to the room. A question from Fiona Manning with Australian Council of Superannuation Investors. So Meg, cognisant of uncertainty, what do you envisage the business will look like in, say, 10 years' time in terms of split revenue from oil, LNG, hydrogen and CCS?

**Meg O'Neill:** Yes, that's an excellent question, Fiona and it gets to the uncertainty that we talked about in the beginning of the presentation. So there are a number of different ways that the world might progress through the transition in a way that is consistent with the Paris Alignment [Clarification: Paris Agreement]. Now when we look at the business today, one thing that is important to note, we have a very large business and for an investment in a new product such as hydrogen, ammonia or CCS, it's going to take time for those to generate a significant portion of our revenue stream.

So whilst we've set ourselves the target of \$5 billion investment, which equates to five million tonnes of CO<sub>2</sub> abated or avoided for our customers, by 2030 it will still be a reasonably modest portion of our business, just given the size of the existing portfolio of oil and gas today.

**Marcela Louzada:** Thanks Meg. Perhaps another question in the room. No? Okay, we will go back to question on the webcast then. Next question is from James Byrne with Citibank. He says, on slide 5 diversification is highlighted as a strategy but in five years' time Scarborough is 75% of 2P. With no new growth projects, what will you do to diversify?

**Meg O'Neill:** Look I disagree with the premise of the question. We do concur that Scarborough is an incredibly important asset for Woodside. In many ways it is the Pluto of the 2030s, so again, it will be a significant portion of our business; we'll have a 75% equity stake once the LNG Japan and JERA sell-downs are completed. So it will be an important asset, it will generate a significant cash flow stream for us.

That said, we do have other opportunities in the hopper. We have talked in other settings about some of the gas development opportunities we have in our portfolio today that includes fields like Calypso, Browse and Sunrise and we've talked extensively today about the hydrogen and CCS projects that we have in our portfolio. So again, part of what we're doing with our new energy strategy is to diversify our business and to build what I would describe as a third pillar of revenue for Woodside.

**Marcela Louzada:** Next question in the room please?

**Martin Lawrence: (Ownership Matters, Analyst)** G'day, Martin Lawrence from Ownership Matters. I had two questions, one of which is technical in relation to offsets. The first one is I think the carrying value of the offsets on your balance sheet at the end of FY23 was US\$123 million, just curious how that relates to the 20 million tonne portfolio and the cost numbers you've put around that.

The second one is, in your own integrity activities, looking at the offsets that you are thinking of investing, how many times or what proportion of offsets that have been certified by these third parties have you said, well actually that doesn't meet our requirement and we're not going to proceed with that?

**Meg O'Neill:** Let me invite Shaun up for those questions.

**Shaun Gregory:** Yes, on the first one, I'll have to get back to you on that. It will reflect the historical purchasing which obviously we got in early in 2018 and so the costs back in those days were lower than they are in the market today, but I don't have the exact numbers to verify you. On the other one, yes, not a quantitative answer. We screen out a fair few of those offsets. We kind of now know the type of offset that won't make it through those quality hurdles. The team, again, being built since 2018, have a lot of experience on what's going to make it. You see us in our disclosures now, over time we're more and more focused in sort of the emissions, bio sequestration emissions.

They're the ones that are going to meet all the quality hurdles and it's just how many of those can you get in the market? How many can we originate and at what cost? And staying cost disciplined still, in building that portfolio.

**Marcela Louzada:** Thanks, Shaun. Perhaps another question from the webcast. The next question is from Mark Wiseman with Macquarie. Could you talk in detail on the 35 million tonne CO<sub>2</sub> equivalent abatement at LNG facilities, the ones that cost more than \$80 per tonne? Can any of these additional costs be passed through to LNG customers?

**Meg O'Neill:** Yes, that's really an excellent question Mark, and the answer right now is, no. LNG buyers are not discriminating based on carbon intensity at the source. There have been some LNG cargoes sold over the past call it five years that have carried with them sufficient offsets to abate, either in the generation of the LNG or full lifecycle. But the reality is LNG buyers are very price-sensitive animals and you can imagine they're in a competitive landscape as well for market share.

So right now they are not paying for additional costs associated with lower carbon intensity LNG. Now what does that mean for us? It means that we've got work to do to try to figure out how do we cut the cost of those abatement opportunities. Our technology team is working with a number of providers to figure out how do we bring down the costs of those decarbonisation opportunities.

We outlined some in the presentation today and the Climate Transition Action Plan provides a bit more detail on the sorts of technologies we're looking at. That's absolutely the challenge that we're facing today. To decarbonise an old facility is not inexpensive. We have a pathway. We know what technology use we need to be maturing and we've got teams that are working on it.

**Marcela Louzada:** Thanks, Meg. Any questions from the room? Yes, next one there and then one in the back.

**Rob Koh: (Morgan Stanley, Analyst)** Thank you. Rob Koh from Morgan Stanley again. This question I asked online and it's marked as Anonymous so you can get rid of it from the queue. So can you talk to asset planning? I know you've got your Australian Head of Ops in the room. In two dimensions, one is, ability to repurpose existing equipment for new energy and then secondly is, how you're thinking about acute physical climate risks?

**Meg O'Neill:** From the repurposing perspective, Rob, unfortunately, there's not a tonne of utility in LNG Train and you would have – those of you who have been with us for a while would have been with us through discussion around, why do we have to build a new train for Scarborough and the answer is the gas quality is quite different from Pluto or North West Shelf.

So LNG facilities are pretty bespoke designs for the feedgas that is going through them. Now, that said Rob, we do have sites that are advantageous. We have docks, we have jetties, we have some of those facilities and so there certainly is an opportunity and if we look at the Angel CCS opportunity we would envision using the same offloading facilities that we use today for LNG or hydrocarbon to import CO<sub>2</sub> from customers.

So there is a bit around the physical side, infrastructure, power gen, those sorts of things would be common. LNG Trains are fairly bespoke.

On the physical risk question, let me invite Liz Westcott to talk about that. This is something our operations team deal with day in and day out. In fact, we're working through cyclone prep today.

**Liz Westcott:** Yes, thanks Rob for the question. Physical risks, I guess, with climate, particularly up in the Karratha area are very relevant for that team. So high heat is part of the design criteria and some of the decarbonisation efforts we've done is sort of putting misting sprays. You saw it in the video. So really trying to address the heat impact it does have on our facilities.

The goal there is to increase the reliability. Because one of the best ways we can reduce emissions is to stay online. It's the upsets that often trigger a lot of the emissions and so reliability has been a real focus. Same with the cyclone preparation, it's a well-established activity up north around how to manage for cyclones.

How to de-man for cyclones and I guess the prevalence of cyclones is always quite variable. As part of climate risk, it's mainly the heat I guess that most people have been focusing on in terms of the physical risks. So it's something we're well versed in using.

**Marcela Louzada:** Thanks Liz. There was another question from Ed in the back.

**Ed John: (Australian Council of Superannuation Investors, Executive Manager)** Thank you. Ed John, from ACSI. It was a great presentation. I'm just interested in a lot more detail around that 2040/2050 trajectory but no doubt you've had a lot of questions asking for more detail. Almost a waterfall chart on those abatement projects and so my first question is when do you expect to be able to provide more detail even if it is sort of a forward-looking question on those again bar charts for the 2030 and 2040 period?

Then also an associated question about what should we read into the \$80 per tonne price test that you've added into those?

**Meg O'Neill:** So let me speak to the second question first, \$80 per tonne is what we use internally to challenge our teams to open the aperture on emissions reduction projects. You'll be aware in Australia the carbon price is Aussie – what is it Shaun, \$30?

**Shaun Gregory:** Yes. Capped at \$75.

**Meg O'Neill:** It's capped at \$75. So US\$80 is well in excess of the Australian market's cap and well above where we're trading today. Again, that was done deliberately to really encourage our teams to think more aggressively about what can be done to decarbonise.

Not that's not – it's not a ceiling. The Pluto Solar Project for example, that first phase of decarbonisation doesn't meet that threshold, but we recognise that if we get the infrastructure up to bring that solar power into Pluto, then we have other opportunities to decarbonise.

There's another industry on the Burrup between Perdaman, Yarra and the Karratha gas plants to try to share the unit cost of that development. So again, \$80 is what we use for the economic assessment to challenge the teams. Above it, it's a signal that we need to do a bit more work.

In terms of the granularity around the pathway from 2030 to 2050, it's worth noting that there is some natural field decline that happens over that period. And if you recall from our Investor Briefing Day last year, the reason we're very focused on decarbonisation at Pluto's site is in the asset portfolio we have today Pluto is going to have the biggest site emissions come the 2040s.

So, absolutely, our focus is on that asset because that is the one that has the longest lifespan. From a dollars per-tonne perspective, the dollars per tonne will be more effectively invested at Pluto than trying to chase down emissions reductions on the FPSOs, for example.

Now we've outlined, and this was in more detail in the Investor Briefing Day and in the Climate Transition Action Plan, some of the technologies we're looking at. Some of those technologies don't go together. So for example, post-combustion carbon capture and using hydrogen for fuelling, we would not do both of those.

We have technical work that we need to do to progress and figure out which of those options is more cost-effective. So that's why we're not able to give you an exact pathway of what will we do, because we are still working on it.

And it's probably also important to note, Ed, that the costs of those options are in the \$200 to \$500 per tonne range right now. One of the things we need to get our arms around is, is that a best use of our shareholders' investment, or can we invest the shareholder dollars in something else that has a more significant impact on climate change?

So those are the sorts of questions that we're going to be grappling with as we work our way forward in time.

**Marcela Louzada:** Another question in the room with Kate.

**Kate Donnelly: (Investor Group on Climate Change, Manager)** Thanks so much and thanks for the presentation today. This is Kate from IGCC. I wanted to welcome the updated Industry Association Review that was published this year and just a question on that. So then noting how important supportive policy settings will be to meeting the Paris Agreement goals. Can you speak a little bit to your split of advocacy for enabling policy settings for say new energy and the old carbon services versus prolonged gas in the global energy mix?

**Meg O'Neill:** Look the question about the role of gas I think is best addressed on – is it slide 14 [Clarification: slide 10], the one that shows Asia energy mix? The slide that we had that showed Asian energy mix and perhaps we can bring that up. China's overall energy use is 25 times Australia's, 60 plus % of their energy today is coal. If the world is serious about climate change we have got to tackle the emissions from coal in China.

Now there are two levers to do that. A lever of technology that's available today is gas displacing coal. So same power output, half the lifecycle emissions intensity. An alternative that our new energy team has been working on is using ammonia to co-fire in a coal fired power station.

Now we've been talking to a number of Japanese utilities who are relatively advanced and continuing to do work on this front to understand what kinds of blends would be feasible and what sorts of modifications would be required at some of their existing coal fired power stations.

So you see even Japan and Korea have almost 30% of their power gen coming from coal. Some of these coal fired power stations are quite new and the operators of those facilities are trying to figure out how to tackle emissions intensity.

So there's two products that we think will be incredibly important through the 2040s, that's LNG, again to displace coal, and ammonia as a blend in the coal fired power stations. Now what's probably not shown or illustrated on this chart is a demand growth potential. And I want to speak to what we're seeing out of Singapore.

So Singapore has passed a law saying, no new data centre investment without bringing green molecules. Many of the companies that are growing their business by investing in technologies like AI, which requires the build-out of further data centres, also have very ambitious emissions reduction targets.

We see that as a key target market for some of our new energy projects and we've signed an agreement with Keppel Data Centres in Singapore, as an example, to supply them with liquid hydrogen starting in 2030, in fairly material quantities [Clarification: agreement is a non-binding HOA]. Now we're working through all of

the technologies associated with that, the production, the transportation, and then on their side the receiving and use.

But I do feel optimistic that there's a demand centre growth that's not even represented in these charts because these are snapshots from 2023 about where markets might move for some of the new energy products.

**Marcela Louzada:** Great. Thanks, Meg. Perhaps another one from the line. We have a question, again, from Fiona Manning with ACSI. The question is, there are no changes to Woodside's incumbent set of climate target strategies from the 2022 AGM. What gives you confidence of greater support this time?

**Meg O'Neill:** Well, look with all respect Fiona, one of the things that I think is quite different is the work that has gone on over the last year to really engage with our investors. To understand your areas of concern. It's described on page 9 of the Climate Transition Action Plan of all of the things that we heard from investors. Including ACSI among others about what they wanted to understand about Woodside's business.

And I think we have changed quite materially in how we are articulating our strategy and evolving our strategy.

The Scope 3 complementary abatement target I think is a fantastic example. A lot of you were saying – or you've said you want to spend \$5 billion but what does that mean for climate change? Well, we've said now, well that would be 5 million tonnes per annum of emissions avoided. Great outcome for the planet.

You've said you want more detail on Scope 1 and 2 and how we're going to achieve that. Again, we've done great work with the Asset Decarbonisation Plans and have mapped out that pathway.

You've asked about a whole host of other things around industry association reviews, Scope 3 maturity, the level of detail of our various hydrogen new energy and CCS projects. We've provided that. So I do think there's actually a tremendous step up in the amount of information that we've provided.

I can tell you the lived experience in the business is – we're very much focused on how climate change affects all of the decisions that we make. From the operators that spoke on Liz's video about the choices they're making, about the decisions they're making on how to operate facilities, on steps that they can take to be more emissions efficient, from the decisions that people are making in the projects organisation on how to avoid emissions.

And again, you don't really see those in the charts because they're – it's like a traffic accident that never happened because they dropped the speed limit. There's emissions that have not happened because we changed design.

And the great work that the new energy team is doing to advance opportunities and to adjust as market conditions demand. I think the journey we've been on that went from ammonia to liquid hydrogen to including CCS in our portfolio, we've got a much broader tool kit of options for our customers today than we did two or three years ago.

**Marcela Louzada:** Great. Thanks, Meg. Any more questions in the room? No. Then perhaps we go to the next one on the webcast. A question from Dale Koenders with Barrenjoey. Meg, can one thrive through the energy transition by accepting low returns on capital reinvested in new energy projects with higher uncertainty in emerging tech?

**Meg O'Neill:** Dale, I think I spoke to that a bit when I was talking about the Capital Allocation Framework. If you think about oil and gas investments you have commodity price uncertainty. So the price that you're going to sell your product for is inherently uncertain. The other big dimension of uncertainty is – on the upstream side is the resource risk.

When we take FID on a development there is always inherent uncertainty in how much we will actually produce from that field. Now hydrogen is quite different. It is more of a manufacturing facility. So once we get a hydrogen plant up and running, it is just going to produce at a steady state.

Now I'm sure our engineers once they get their hands on it will fine-tune and be able to squeeze more and more throughput year in and year out. As they have demonstrated for our LNG plants. At the end of the day, it ends up being a risk-reward balance and we think the way we've got our Capital Allocation Framework set actually, in some ways, normalises between the three commodities because the risk profile is quite different.

**Marcela Louzada:** Great. Thanks, Meg. The next question on the webcast from Sue Lyn Stubbs with Fidelity. So committed that 50% of the 70 projects will be implemented by 2025 and the remaining by 2030. How will we as investors be able to assess this progress?

**Meg O'Neill:** Yes, it's a great question Sue Lyn and we are committed to transparently reporting our emissions. So you will see data on our emissions progress as time passes between now and then. As we noted, the spend is estimated at about \$200 million. Some of that will be capital, some of that will be operating expenses. So it may not be really obvious in the PNL.

At the end of the day, it will be visible in our emissions. It gets to this whole point of, we're trying to do – take steps with those 70 or so projects to avoid future emissions. So that will be the key test for us, is what the emissions numbers are.

**Marcela Louzada:** Thank you, Meg. Any questions in the room? No. Perhaps we have time for another couple and then the IR team will follow up on any outstanding questions afterwards. The next question is from Anonymous. So how does the new abatement target compare to expected growth emissions across all scopes over the period to 2030? It's heavily caveated, what's the contingency?

**Meg O'Neill:** I think it probably is worth noting as we've shown on the slides that the slides need to be read in conjunction with the footnotes and the footnotes are numerous. Again, this is important for us to be really disciplined and precise in our language.

So for our new energy and CCS investments, those do depend on a market being available and I think you, our shareholders, would not be supportive if we took forward a major investment and had no customer. If we built a hydrogen plant and there was nobody there to take it.

Now, perhaps, at a small scale, we might do some piloting but certainly for anything that approaches \$1 billion we want to make sure we have customers lined up. That's for hydrogen as well as for CCS. So we do need to make sure that we've got that coherence and that's why we've got some of the footnotes that we have.

Now, again, to give our investors confidence we are also doing a lot of work to stimulate demand and the H2 Refueller, I think, is a fantastic example. So when we first started working on that project it was with a consortium of three trucking companies. As the work has matured with some of those companies, one of them has fallen away because they've said, actually our truck is too hard to convert. We've continued to knock on doors and we've got a new company in, who said, actually, 'we've got a commitment' [Clarification: The consortium remains comprised of the initial three trucking companies]. We will figure out how to get a truck to work on hydrogen. So we are doing work to try to build demand and the new energy team has people – teams out in the US, in Europe, in Asia and in Australia. Again, doing things to try to stimulate that demand.

Because we recognise it's not just going to evolve organically. We need to be working with customers to figure out, how do we help them grow their businesses?

**Marcela Louzada:** Thank you Meg. Any final question in the room? Yes, we have a couple here and then I think we will wrap up.

**Unidentified Participant:** Hi Meg. It just occurred to me, I mean you've been talking hydrogen and CCS. Is there a plan B, if you can't get customer support for hydrogen, what is the plan B and is it CCS?

**Meg O'Neill:** I think it's important that we have multiple tools in the tool kit, but they need to be tools that work for Woodside. For example, and nobody has asked it here today, but occasionally we get the question about, why aren't we doing plain vanilla solar or wind? The answer is, first off we think the margins are pretty skinny so we don't think our shareholders would want that.

If our shareholders wanted skinny solar returns they would go invest in a solar company. We don't think it matches our capabilities. So the things that we do really well, we design and operate large-scale hazardous facilities like LNG plants. Hydrogen and ammonia very much tick that same box.

We are very good at extracting oil and gas from the subsurface. We've got all sorts of great capabilities to understand how to map that, how to drill wells safely, how to operate in this challenging subsurface environment. CCS is an immediately transferable skill.

We think we do need to have these types of tools in the tool kit and if you go to the demand charts that we presented today, you know I do have conviction that demand for both of those products and services will increase over time.

I think we're at a point where people are realising that this is more complicated than first advertised. Probably three years ago everybody was like, green hydrogen, it's going to save the world and it's super easy. People were quoting numbers that were not credible.

As work has matured and people have a better understanding of what does it mean to produce these products, what does it mean to consume these products? There's a bit of sobriety. But I do absolutely have confidence that we will get there because it's imperative you know for the world to achieve net zero, for the world to achieve the goals of Paris.

We've got to be able to come up with not just low-carbon electrons but also low-carbon molecules and that is the game that we are focused on.

**Marcela Louzada:** Thank you, Meg. Last question in the room from Kate, in the middle here.

**Kate Donnelly: (Investor Group on Climate Change, Manager)** Thanks again. I was just thinking about your conversation earlier around the Board mix of skills and competencies and was wondering if you could talk to, I suppose, the additional skills and experience that you might be looking to bring on over the next five years or so? Noting that there's quite a big challenge up to 2030 and beyond to deliver your strategy.

**Meg O'Neill:** Look, in some ways that is a question that the Chair would be better placed to answer but let me speak to what has gone on over the past call it a year and a half. So following our merger with BHP Petroleum, we became a much bigger company. Global footprints, we have a secondary listing in the United States. So we are subject to SEC reporting requirements and our ability to fund the energy transition, of course, is higher and our commitment is higher.

So with the merger, we said when the merger completes, that was what triggered the \$5 billion target. We've done Board renewal. We've brought three new directors on in that period, one really with a lot of expertise in US financial markets. Again, to make sure that we've got the right mindset around compliance, SEC and SOX reporting.

One from Total Energies who many in the market would point to as a company that is leading the way for an oil and gas company that is working to transition. The third one who just started is coming to us from SLB where he led their technology group and then later their new energy business. And so he is the architect of that company's thinking on how do they evolve to participate in a lower carbon future.

So we've been bringing skills and capabilities that better reflect the footprint of Woodside, our geographic diversity, our global nature, and the imperative for us to thrive through the energy transition.

Now if you want questions about where the Board might continue to evolve, those would probably be best placed to the Chair.

**Marcela Louzada:** Okay.

**Meg O'Neill:** Okay.

**Marcela Louzada:** Thank you, Meg. Thanks...

**Meg O'Neill:** Look, let me just thank everyone for attending today. This is a very important conversation for us. We've heard from many investors that they wanted to really be able to understand and explore our climate strategy in greater depth.

And perhaps if I go back to where we started, our business strategy is a climate strategy. Thriving through the energy transition is all about being prepared, being resilient, being able to continue to deliver value to our shareholders as the world tackles this all-important challenge of climate change. So thank you for your interest. I'll hand back to Marcela.

**Marcela Louzada:** Okay. Thank you very much. I guess, thanks everyone for attending. If you have any further questions please email us at, [investor@woodside.com](mailto:investor@woodside.com). We hope we have managed to cover as many as possible today. We do value the opportunity to connect with our shareholders and everyone interested in our business. We hope you found the session valuable too. We look forward to seeing you at our Annual General Meeting on 24 April. Thank you.

## End of Transcript

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