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Thank you for that introduction. It is a pleasure to be here in China – a country that has a strong commitment to “smart” technology and innovation and to creating a sustainable energy future. And it’s a privilege to speak at a conference that considers the role of technology and innovation in centuries past as well as their current and future application.

The conference theme reminds us that innovation is not a new concept. It’s as old as the Silk Road. And it is often linked to trade and commerce, as we strive to find new and better ways of linking people in one part of the world to products from another region that can improve their lives.

Arguably, the trade of energy resources demonstrates more clearly than any other trade how interlinked the world is. Those energy resources can be crucial to lifting people out of poverty and raising living standards.

As a resource-rich nation, Australia can play a role in extending access to modern energy to the billion people on the planet who still live without it. We are a free trade economy in close proximity to Asia and with strong trade links across the region.

And as a leading LNG exporter, we provide a reliable energy source that contributes to global emission reduction efforts by displacing other higher-emission energy sources and by partnering with renewables to enable their growth. In recent years, we have seen how China’s commitment to

lower air pollution and carbon emissions by switching to cleaner energy sources has created opportunities for gas and renewables.

Today I will talk about what we see as the technological frontiers in the production and trade of LNG. By this, I mean not only conventional oil and gas technologies, but also data-driven breakthroughs and advances in carbon management and the development of new energy markets and sources. Woodside is thinking deeply about all this as we progress our proposed growth projects in north-west Australia.

Those growth plans involve developing some 20 to 25 trillion cubic feet of gross dry gas resources from the Scarborough and Browse fields through our proven facilities of the Pluto LNG Plant and the North West Shelf Venture's Karratha Gas Plant.

We propose to build another LNG train at Pluto and link these Woodside-operated facilities into an integrated 7-train LNG production centre called the Burrup Hub.

This will significantly increase our production and ensure we continue to be a major global supplier of LNG right at a time when the world will need more of this energy source. It also gives us a chance to take some big steps forward in the technology of our facilities as we invest in extending their operating life.

Earlier this month, I attended CERAweek in Houston and was struck that Big Tech companies were there in force, in a sign of the digital transformation occurring in our industry. We are a data-rich industry, but it is only in recent years that producers have really begun to understand how to make use of that data.

Woodside has been at the forefront of this digital transformation, investing in understanding our data, analysing it, giving our staff access to it and improving our methods for gathering it.

We have built our in-house capabilities in artificial intelligence, machine learning and robotics. These technologies can provide real-time insights, enabling better decision making, cost reductions, higher reliability and reduced exposure to safety risks.

One example is the wireless sensors that we have designed to detect and identify problems with a machine's performance by a change in vibrations and temperature.

Another example is the solar-powered visual inspection cameras that we are prototyping, which can improve our knowledge of how our facilities are performing. This can be used, for instance, to capture information about oil levels on pumps, eliminating the need for someone to go into the field. Digitising the data that is harvested in this way allows us to better analyse it and use it to compare pumps and predict when to top them up.

Together with robotics and autonomous systems capabilities, these technologies give us the ability to detect and respond to emerging issues in our facilities before they disrupt operations.

In developing these technologies, we are drawing on external expertise, collaborating with partners including NASA and the new Australian Space Agency. Our expertise in remote operations has relevance to the remote and extreme environments which these agencies strive to understand.

As we build the Burrup Hub, we are taking responsible action to abate emissions and improve energy efficiency.

This includes pursuing options for integrating solar power with high-efficiency gas-fired generation to power our facilities.

We are consulting with government and other stakeholders about a proposal for power generation that would draw on the abundant sunlight available in northern Australia, integrated with gas-fired power and using battery storage for backup power and grid stability. It makes sense because the Pilbara region, where our facilities are based, has a very high quality solar resource, in the top decile of solar resources worldwide.

This proposal for integrated power generation is an opportunity to demonstrate the partnership between gas and renewables. It offers both commercial and environmental benefits, reducing emissions and increasing the volume of LNG that can be sold rather than being used to power facilities.

We are supporting the development of new markets in which LNG can displace higher emissions fuels. Woodside has built a truck-loading facility at our Pluto LNG Plant that will supply LNG to

customers and communities in remote areas across northern Western Australia, reducing emissions by displacing diesel.

The Pluto truck-loading facility is certainly not the biggest project that Woodside has delivered. But it is significant because it demonstrates Woodside's drive to find new markets that offer both commercial and environmental benefits. We are supporting the development of an LNG market in Western Australia for remote power generation and as a cleaner road and marine transport fuel.

This approach can be replicated in other regions, including those in the developing world that are off the energy grid and not linked to pipeline gas.

We have been working to develop LNG as a cleaner marine fuel as the International Maritime Organisation's 2020 deadline for low-sulphur marine fuels approaches. Woodside has been talking to the big miners about the infrastructure that would be needed for LNG to fuel the busy marine trade routes to Asia. We expect the shift to LNG bunkering in China will contribute to further growth in LNG demand.

And we are thinking longer-term and looking to the future and the potential for hydrogen energy.

"Green" hydrogen is the longer-term goal, using renewable power to source hydrogen from water. But to get there we need low-cost hydrogen, for instance from natural gas, to build scale and experience in hydrogen transport and distribution.

This so-called "blue" hydrogen, using steam methane reforming to produce hydrogen from natural gas, is proven technology today. Already, some of our destination markets are using LNG to produce hydrogen, which makes sense given LNG is hydrogen-rich and easily transportable.

This existing technology to produce "blue" hydrogen can support the new supply chain that will be needed as this energy source advances, achieving commercial scale globally beyond 2030.

Woodside has in the past month joined the HyNet consortium in Korea that is building 100 hydrogen refueling stations. This will give us valuable insight into this emerging market as we explore the longer-term opportunity to produce and export hydrogen on a commercial scale.

The Silk Road of energy supply is always changing as the expectations of communities change. We must be alert to these changing expectations and be prepared to innovate – whether through

digitisation of our operations, new uses for our product that deliver commercial and environmental benefits, or potential new energy sources.

Our industry has evolved rapidly and continues to evolve. The experience we have built up over decades of LNG supply positions us well to contribute to a lower-carbon energy future. Thank you.