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I would like to acknowledge the traditional owners of the land on which we are meeting, and pay my respect to their elders, past and present.

I also acknowledge our distinguished guests today, including the Patron of the Melbourne Mining Club, Sir Arvi Parbo.

It is an honour to speak at this club that has done so much to promote the value of Australia's resource endowment. It is also an honour to speak here in Victoria, where Woodside was formed almost 65 years ago. It's also the state where I grew up – a country kid from a working-class background, the first in my family to get the opportunity to study at university. And it was here in Victoria that, after studying engineering, I began working in an industry that continues to fascinate me.

Much has changed since Woodside was granted the first offshore exploration license in Victoria in 1956. At that time, the tenacious junior explorer was setting new world records by drilling in water up to 60 meters deep. Now technology and our own expertise has advanced - and we can safely and productively drill to depths 40 times that.

After a decade of exploration in Australia's southeast, Woodside headed to the north-west of the continent in search of gas. And, thus was born an industry that would contribute billions of dollars to the Australian economy, delivering thousands of jobs and a secure energy supply for Western Australia while also creating strong export markets.

The evolution of Liquefied Natural Gas, or LNG, since then is just one chapter in the remarkable story of Australian resources development – a story that is still being written as new technologies facilitate new approaches. The advent of LNG allowed Australia to unlock value from a new parcel of its resource endowment, drawing on very significant investments from both developers and customers.

It's not lost on me that a similar story was playing out here in Victoria in the 1960s as the state government worked with Esso and BHP to provide the investment certainty and infrastructure required to replace gas produced from coal to enable the development of the Bass Strait Fields. In Western Australia, Sir Charles Court laid the firm foundations for an industry that has become a massive contributor to the state, backing in the Dampier to Bunbury pipeline and the contracts that underpinned it.

Where are these leaders today? Where are the communities that support them and the industries that support them? Today's society continues to benefit from the far-sighted and difficult decisions taken by leaders in decades past. But I lament that their foresight has brought complacency, leading us into an abyss of indecision, negative politics and not-in-my-backyard obstructionism.

Would these attitudes have seen the development of Victoria's iconic tram system, or of Melbourne's wonderful sporting precinct with such world-class facilities as the MCG and Melbourne Park?

Where is the vision from our leaders today? We must move away from the politics of "no" and work to establish a common purpose. Politicians, community leaders and industry have a responsibility to work together on tackling the big challenges we all face.

As a nation, we are blessed with a rich and diverse resource endowment, which comes with a duty to develop it in a timely and responsible way. We have the resources. We have the capabilities. The demand is there – with Australia right on the doorstep of the world's fastest growing markets. If we are to unlock the full value of our resources for the Australian people, we need policies that provide certainty for investment decisions as Australia competes for global capital.

Australia's financial system will never be big enough to support the capital required for massive resource projects. Australia will always have to attract funding from foreign sources. As we compete for capital globally, we need vision and leadership – but we also need enabling laws and regulation. That applies to our taxes, our environmental regulation, our education, immigration and industrial relations systems.

It's time to reset the public discourse and focus on what future we can build for our children and our grandchildren, and what legacy we can be proud to leave behind. With that in mind, let's talk about the issue that presents the greatest challenge to our society – climate change.

Australia has all the resources it needs to support a lower-carbon society, both at home and abroad, and to do that in an internationally competitive way that ensures continued growth and jobs for Australia.

Climate change and the policy decisions associated with it affect all members of the community. We face a choice: to act or not to act. In my view, it is imperative that we act.

The scientists have warned of the consequences of inaction. Regardless what you think of that science, if we wait to see if the scientists are right or not, it will be too late to act. So, prudence dictates that we think about what contribution we can make, individually and collectively, to mitigating the effects of climate change.

In its most recent report, the Intergovernmental Panel on Climate Change has issued a challenge to the world, outlining the radical change that will be needed to limit global warming to 1.5 degrees. If the world is going to go down that path, it is clear we will need new ways of generating energy.

We are working on those, but the reality is the world is still struggling to find consensus around a 2-degree pathway - and achieving even that will require innovative energy solutions and a growing role for natural gas in the decades ahead.

Without a global carbon price, we are stuck with a patchwork of national approaches, loosely coordinated under the Paris Agreement. And so, we need to deal with the problems inherent in this piecemeal approach. As nations pursue different levels of ambition, trade and competitiveness issues arise across borders. We must consider the impact on Emissions Intensive Trade Exposed Industries. Otherwise, national action will be constrained by the needs of the most vulnerable sector.

If we want deep emissions cuts, then we need to reconcile them with economic competitiveness. A failure to do so is to set up emissions reduction as being in conflict with jobs: and we know how that ends. So, finding ways to cut emissions whilst protecting jobs is not a trade-off with emissions reduction – it is a prerequisite for it.

Starting at the COP 24 in Poland in December by agreeing the rules for the application of international carbon offsets would be a big step forward in allowing emissions reduction to be achieved at the lowest global cost.

In the absence of an appropriate carbon price, we risk a perverse outcome where the lowest cost of reliable supply into the market remains the greatest emitter of carbon, offsetting the benefits renewables offer.

Today's policies simply do not take high-intensity carbon out of the market. This means that, as renewables achieve scale, we risk wasting money on building more power into the system, resulting in generation overload. We risk ending up in a situation like Germany, where the growth in renewables without a corresponding increase in gas-fired power has resulted in issues with intermittency and overcapacity - and failure to reach emissions reduction targets.

If we reduce debate on climate policy to a showdown between coal and renewables, we lose sight of the options for a more balanced approach.

Here in Australia, the lack of a clear roadmap from successive governments has left businesses uncertain what they can contribute. But the past decade has shown we cannot wait for government to lead on this. As business leaders, we are used to calculating risk and managing it. Clearly, the risk of inaction is too great.

If we are to have a chance of transitioning to a lower carbon economy, large and experienced companies like ours will play a crucial role. Companies that employ thousands of people. Companies that are capable of building large facilities and running complex operations. Companies that invest in industrial-scale technologies to deliver efficiencies. Companies that have a track record for supplying energy to customers in Asian mega-cities. Companies that are prepared to take risks, but need appropriate returns and therefore need certainty from government – the sort of certainty that only comes from a bipartisan approach.

We are the companies that can support a balanced and socially cohesive approach that secures emissions reductions while maintaining economic competitiveness, improving urban air quality and increasing access to modern energy.

We may well be at the dawn of a new era for energy – but it is an era that builds on Australia's decades of experience supplying energy around the world.

It is an era that will be ushered in by commercial imperatives. Governments do play a vital role in incentivising the development of lower-carbon energy sources and providing the certainty that industry needs to pursue them. But the demand will come from customers. We are seeing commercial pressure emerging from Woodside's customers in Japan and Korea, who are

encouraging us to develop hydrogen power as a carbon-neutral energy source that can ultimately be derived from renewable sources.

“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 uses steam-methane reforming to produce hydrogen from natural gas. Natural gas is, of course, largely made up of methane, containing four hydrogen atoms. This is proven technology today, but more research and development is needed, particularly into the shipping of hydrogen. Already, some of our destination markets are using LNG to produce hydrogen, which makes sense, given LNG is hydrogen-rich and easily transportable.

The existing technology can provide the impetus for building the new supply chain that will be needed as we work towards bulk production of hydrogen powered by renewables, drawing on Australia’s natural advantage of sunlight and vast spaces.

This emerging power source has the potential to transform our industrial sector, offering carbon-free pathways for energy-intensive manufacturing and for heavy transport.

We can take the first step already, by using the abundant natural gas available off Western Australia as feedstock for hydrogen production as we target a future world of green hydrogen from water, using renewable power.

We are already seeing a quiet revolution underway on shipping emissions. The world has taken real action to curb sulphur emissions from marine fuels, spurred on by community concerns about the health consequences. The International Maritime Organisation’s tighter cap on sulphur emissions from shipping fuels from 2020 will have a significant impact on the cost of seaborne trade.

This is likely to be the first in a series of steps to reduce the environmental footprint of shipping. It behooves governments to move forward as quickly as possible with industries that are able to support changes in the shipping fleet to lower-emissions fuels.

Other governments are already acting to seize this opportunity: Singapore offers port fee reductions to LNG-fuelled vessels. South Korea is subsidising the build of two LNG-fuelled bulk carriers. Other countries, including the United States, have implemented Emissions Control Areas

along their coastlines that impose even tighter restrictions than the IMO, thereby incentivising shipping companies to adopt cleaner fuels.

We have worked together across the resources industries to prepare for the new IMO regime. Through the Green Corridor Joint Industry Project, we have collaborated with resources and shipping partners - including Rio Tinto, BHP, Fortescue and Shell - to design LNG-fuelled vessels that could ship Australian resources exports to the world. There is the opportunity for Australia to be a world leader on this, but it is going to require a joint effort from across the resources and shipping industries - and leadership from the government.

The opportunity is broader than just shipping. There is the chance to achieve emissions reductions consistent with industrial development if governments incentivise the switch from diesel to LNG fuelling of mine trucks and locomotives. The Pilbara in northern Western Australia is the ideal place to drive this transition - and Woodside is developing the infrastructure to support it – but there may be a role for targeted government support for the conversion of heavy vehicles.

In WA, we have a long history of providing gas to local customers – and Woodside’s commitment to develop LNG as a transport fuel is a new way for us to supply Western Australian resources to local industry.

The domestic gas reservation policy has existed in some form in WA since the North West Shelf Agreement was signed in 1979. It is true that the industry has at times railed against the progressive tightening of the policy. But we have learned to accommodate it - and the upshot is that domestic gas and LNG for export are no longer perceived as being conflicting priorities. In WA, their relationship is symbiotic.

The case is less clear-cut in those states where the connection to international markets hiked prices and squeezed domestic supply, adding to pressures on local manufacturing. Politicians responded by threatening intervention in export markets with tools that have undermined security. This has in turn created a climate of uncertainty that is perilous for new investment and can jeopardise new supply. So how do we turn this vicious circle into a virtuous circle?

I applaud the Queensland government’s approach of setting aside future acreage for domestic gas use only. This provides investors with the certainty they need as they make decisions on potential developments.

We must move away from mechanisms that try to control prices after investments have been made. Repeated interventions risk teaching both suppliers and consumers that the right strategy is

to wait for a political crisis to emerge to bring down prices – and that’s an irresponsible way to manage the nation’s resources.

Complex policy dilemmas require consultation and rational decision-making, rather than populist responses to rolling crises. Time and time again, decisions taken whilst in crisis end up needing to be unpicked.

I’m talking here about short-term decisions that are ostensibly principles-based but have ramifications that have not been thought through. Decisions like state governments imposing moratoria on gas exploration and development right at a time when new supply is needed. Decisions like the ACCC’s move to declare LNG export parity prices as the default market price in the eastern states. This has encouraged domestic-only gas producers in NSW and Victoria to lift their prices, even though their exposure to export markets is minimal.

The east coast gas crisis resulted from a range of factors. Producers failed to develop the anticipated resources. Some large industrial consumers neglected to manage price risk, failing to deploy the sophisticated buying strategies that are advisable for companies so reliant on gas. And governments lacked the right policy settings to appropriately regulate new developments.

For the security of gas producers and the customers they supply, each state needs a process to reassure the community that the reasonable domestic gas needs of Australians will be met. This may be achieved through reservation of acreage, or of volumes of domestic gas.

The reality is there is no simple fix to the east coast gas crisis. But there are options for ameliorating it. I’m definitely *not* talking about a west-east pipeline.

It might seem like a simple solution but would in reality serve neither east coast nor west coast gas consumers well. For one thing, a pipeline would create a price floor in the east, not a price cap: its construction is conservatively estimated to cost \$5 billion and this cost would be baked into household energy bills forever.

What is more, gas pipelines are built to be full, so long-term demand needs to be aggregated and underpinned through “take or pay” agreements. Sir Charles Court was prepared to do this in WA decades ago, based on careful calculations of projected demand, but I don’t see anybody prepared to take that risk today.

A much more sensible approach is to establish a “virtual pipeline”, linking eastern gas markets to multiple sources of supply via one or more import terminals. This is better suited to the vast distances and small volumes of gas that are involved and can disrupt east coast gas markets and mitigate against opportunistic price gouging.

I mentioned at the start that this is an industry that continues to fascinate me, even after all these years. There’s a range of reasons for that, including the vital role our industry plays in unlocking value for society through the development of resources that are owned by the Australian people. That’s economic value, social value and value from the delivery of energy and other industrial inputs.

I know that in this club I’m preaching to the choir with that argument. But it is important that we also make these arguments to a broader audience, including to those who think we are industries of the past and who challenge our ongoing relevance.

The reality is that we are the companies and industries that can be a bridge to the future.

This country has a long history of visionary leaders who have taken calculated risks to develop our wonderful resource endowment. Some of those leaders are here today - and I pay tribute in particular to Sir Arvi. Today as we face the competing challenges of global climate change and maintaining a prosperous future for our people through the creation of jobs, we need those visionaries again, across government, the community and industry.

I’ve outlined today a vision that includes an increased use of our current resources in transportation, but also a future where we value-add by developing new energy sources. This includes drawing on Australia’s abundant renewable resources, like solar, to produce a future where hydrogen is a significant energy source for the world. By 2030, we think hydrogen could already be providing industrial-scale power.

What I would *not* like to see in 2030, when the Melbourne Mining Club will be approaching almost 200 speeches, is a country that has squandered its resource endowment and is stuck in a cycle of perpetual uncertainty and policy and political crisis.

What I *would* like to see is an Australia that is harnessing value from its rich and diverse resources, and is forging ahead with new energy sources while continuing to draw value from the resources that have underpinned our prosperity for decades.

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