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SPEECH

MEETING THE CHALLENGES OF A ONCE IN A CENTURY TRANSITION IN GLOBAL ENERGY MARKETS

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CHECK AGAINST DELIVERY

Introduction

Good afternoon ladies and gentlemen. It's an honour to be part of such an august line-up of Leadership Forum speakers, including my Prime Minister a year ago this month.

As we gather here, the world is facing a once-in-a-century energy transition, akin to when the telecommunications sector went from the landline to the cell phone – or the mobile as we call it in Australia.

It's the biggest change in our electricity systems since Nikola Tesla prevailed over Thomas Edison in the 'War of the Currents' in the 1890s, when AC beat DC.

This transition presents challenges, but there are also great opportunities to be seized.

Today, I want to make three key points.

1. Australia is a superpower when it comes to both traditional and new sources of energy, but our country nevertheless faces technical challenges as we move to a lower emissions future.
2. The steps we are taking to address these challenges may provide useful lessons for other countries. We have learned you cannot compromise energy security. So when it comes to energy sources, ours is a technology-neutral and all-of-the-above approach, as Secretary Perry too has stated.

3. As the world's centre of gravity moves to the Indo-Pacific, Australia and the United States are in prime position to assist our partners meet the needs of booming economies and populations, which will demand a secure, reliable and affordable supply of energy.

Energy superpower

Australia has been called 'the lucky country' and nowhere is this more evident than in the resources and energy sector.

We have the unique advantage of occupying our entire continental landmass, which is the sixth largest in the world.

It is a continent rich in resources, both fossil fuel and renewable as well as mineral.

We are the world's largest exporter of iron ore and coal, accounting for 30 per cent of global coal trade. Our coal is some of the cleanest – high in energy, low in ash.

We also hold one-third of the world's known uranium resources. Two mines in Australia, Olympic Dam and Ranger, alone produce 10 per cent of the world's uranium.

And the coming years, we are forecast to overtake Qatar to become the world's largest exporter of liquefied natural gas (LNG).

This marks the latest chapter in Australia's integral role in Asia's growth story – from Japan's and South Korea's industrialisation after World War II, to China's emergence as the regional economic powerhouse, to India's huge population growth.

Australia will continue to be a big LNG exporter, but not at the expense of sufficient domestic gas supplies for our domestic industry. We must maintain sufficient supply of gas to ensure a secure system and affordability at home.

Of course US investment is integral to this story. The United States is still by far the largest investor in Australia – with almost 30 per cent of total foreign investment, ten times more than the stock of investment from China.

With the investment phase of the mining boom coming to a close, we are now moving to the production phase.

But while Australia is the world's 8th-largest energy producer, it is only the 20th-largest consumer. This means we are a significant energy exporter, sending more than three-quarters of our production overseas.

Australia also enjoys the world's best solar resources, with the highest solar radiation per square metre of any continent.

No wonder many Americans know Australia as the ‘sun-burned country’!

And we have some of the best wind resources in the world. The winds that first brought British settlers to Australia – the Roaring 40s – blow as strong today as they did then.

Now, Australia is entering its 27th year of continuous economic growth and will soon surpass the Netherlands for the longest streak of any developed country.

Historically, affordable and reliable energy have underpinned this growth. But so too have our private enterprise, free markets and robust institutions.

Our people have pioneered several technologies now seen world-wide.

For example, Australia is leading the way on solar R&D, and in the coming years 60 per cent of the world’s solar PV will use technology developed in Australia.

Australian households have the highest uptake per capita of solar PV systems in the world – with more than 15 per cent of households, double the next highest, Belgium.

We have also recently announced a feasibility study to expand the landmark Snowy Mountain Scheme – a 4 gigawatt hydro-electric system comprising 9 power stations, 33 turbines and 16 dams containing 12 times the volume of Sydney Harbour!

This expansion would increase its capacity by half again and involve a technology called pumped hydro energy storage.

Batteries often capture the limelight, but today pumped hydro actually provides 99 per cent of the world’s renewable energy storage.

This is an iconic symbol of Australia’s post-war nation-building. Over 100,000 people, two-thirds of them migrants from 30 countries, worked for 25 years to complete it.

As is often the case, the United States was right there with us. In 1951, you agreed to train our engineers and provide technical assistance to the Snowy Hydro Authority.

This was of course the very same year we entered into ANZUS, which has been the bedrock of our alliance since.

One can find in our treaties archive the Snowy agreement which was received by Percy Spender, our legendary Ambassador in Washington under the Government of Sir Robert Menzies, who is coincidentally my greatest predecessor as the Member for Kooyong, the founder of the Liberal Party and Australia’s longest-serving Prime Minister.

Energy security

These examples show how Australia is taking an all-of-the-above approach to addressing the challenges posed by the global energy transition.

In Australia, these challenges can be particularly acute.

The National Electricity Market is the world's longest interconnected power system. It spans from Port Douglas in the north, across the Bass Strait to Tasmania in the South.

That's more than 3,000 miles. Much farther even than the distance from Washington DC to San Francisco!

Our NEM is not dissimilar to the PJM Interconnection which links markets from here to Chicago and transmits around 800 terawatt hours, serving more than 60 million people.

While the NEM does not serve a market as large as PJM – Australia only has 24 million people in total! – its long and skinny nature presents many challenges.

In September last year, one of our states, South Australia, experienced for the first time ever a state-wide black-out, putting 1.7 million people into the dark.

This was a real wake-up call to the nation. It was our 'canary in the coal mine'.

It has also focused the discussion in Australia on ensuring energy security – by which I mean the reliable supply of electricity – as we transition to a lower emissions future.

Americans have a healthy attitude towards failure and are good at learning from mistakes. It's important that we do the same in Australia.

That's why we commissioned Australia's Chief Scientist to produce a blueprint for the security of our energy market. I note Secretary Perry has recently announced his department will do a similar review.

I believe our blueprint will also provide worthwhile lessons to others worldwide, namely how to integrate the higher uptake of intermittent renewable energy generation.

One lesson is that you cannot rush head-long into renewables without adequately planning for back-up power and the necessary frequency control and ancillary services, typically provided by fossil fuels.

That means ensuring more gas as well as not prematurely closing coal.

We are already seeing some key trends play out in Australia and worldwide.

- Consumers are driving change, as they take up solar, storage and electric vehicles.

- Demand for energy from the grid is declining as generation is increasingly decentralised, and we are becoming more energy efficient.
- New technologies are emerging more rapidly and affordably than previously thought.
- International commitments to reduce emissions are affecting energy mixes as countries seek to integrate their climate and energy policies.
- Intermittent renewable generation is on the rise. But when the wind's not blowing and the sun's not shining, power is not being generated, making planning more difficult.

Transitions have always involved tough decisions and periods of insecurity.

During another energy transformation just over a century ago, Winston Churchill, then First Lord of the Admiralty, converted the battleships of the Royal Navy from coal to oil, which would make his ships more nimble in combating the Germans.

He told Parliament in 1913, "On no one quality, on no one process, on no one country, on no one route and on no one field must we be dependent. Safety and certainty [in oil] lie in variety and variety alone."

Albeit referring to oil, his words remain true. Energy security requires diversity of supply.

That's why Australia is pushing ahead with all types of energy sources and technologies without regard to ideology, or the party tribalism which too often limits our options.

Transition to lower emissions

At the same time as Australia's energy mix changes, so too does our emissions profile.

We now have the lowest emissions per capita and per unit of GDP in 27 years.

Our target under the Paris Agreement to reduce emissions by 26 to 28 per cent on 2005 levels by 2030 will see a halving of our emissions per capita.

While Australia contributes only 1.3 per cent of global emissions, it is in our interests for collective global action to reduce emissions. For example, there are 178 countries emitting less than 2 per cent each – together they total around 40 per cent of global emissions.

Australia has a strong track record of meeting its targets.

Above all, we should be supremely practical, rather than ideological.

A transition is underway globally and needs to be managed responsibly.

Today we can rely on renewables alone no more than we can rely on fossil fuels alone.

Secretary Perry made this point during his confirmation when he said he would advocate “American energy in all its forms, and that includes renewables. America has been blessed with vast natural resources and the technology to utilize them. I am committed to helping provide stable, reliable, affordable, and secure sources of American energy.”

These words could just as well be about Australia. The similarities between Texans and Australians extend beyond our people, sense of humour and hospitality – which I have gladly experienced – to our energy systems!

During Secretary Perry’s tenure as governor, renewables increased significantly.

And he also advanced clean energy technologies such as carbon capture and storage (CCS). I will visit the Petra Nova Plant outside Houston, which began operation in January and which Secretary Perry himself officially launched earlier this month.

One prime example of cooperation between the United States and Australia is Chevron’s Gorgon LNG project in Western Australia, which at \$54 billion is the largest-ever single private investment in Australia. It will also be the world’s largest CCS project.

CCS has huge potential and is a major focus for the Australian Government.

The Head of the International Energy Agency, Dr Fatih Birol, has said CCS “will not be optional in implementing the Paris Agreement” and that without it the cost of the energy transition under Paris would be \$3.5 trillion higher.

In a similar vein, the Intergovernmental Panel on Climate Change (IPCC) said, without CCS, the cost of meeting global emissions reduction targets would be more than double.

Another major focus in Australia is gas. While we are projected to become the world’s top LNG exporter, domestically we are facing a tight market, due to a combination of factors including state moratoriums and bans on the same gas exploration that has seen the ‘Shale Gas Revolution’ and the United States now exporting gas for the first time in decades.

Indo-Pacific

These developments come at a time when the world and particularly the Indo-Pacific is hungry for energy. This shows no sign of abating.

Energy demand is expected to grow by 30 per cent over the next 25 years, according to the IEA. ExxonMobil predicts that 60 per cent of this growth will be in the Indo-Pacific.

All countries and their energy ministers are grappling with an energy trilemma – balancing security, affordability and lower emissions.

But for many of our partners in Asia, they are also dealing with booming populations, high economic growth and the demands of emerging middle classes.

One cannot fault these countries for putting a premium on energy security in the basic definition of the term: that is, the availability of uninterrupted supply at affordable prices.

These countries can scarcely afford the ideological battles that plague developed countries over fossil fuel versus renewable energy sources.

Indonesia is trying to meet an increase in energy demand of eight per cent each year.

India's electricity demand is increasing at five per cent each year, and its power system will need to almost quadruple in size by 2040.

It still has an estimated 240 million people without access to electricity, but the Government has set an ambitious goal of 24/7 power for all people by 2019.

Japan is ramping up its coal capacity after temporarily closing its nuclear power fleet, which had provided up to 30 per cent, in the wake of the Fukushima incident.

In an effort to shore up energy supply, it has in planning 45 new high-efficiency, low-emissions (HELE) coal plants.

And the most remarkable story is China's. Its energy production has tripled since 1990, and it overtook the United States as the world's largest energy user in 2009.

China is increasing all types of power generation: coal, gas, nuclear, wind, solar. While coal will decrease as a proportion of China's overall mix, its latest five-year plan set out a substantial increase in coal generation capacity.

This is reflective of the global transition that is underway. While coal will increase in absolute terms, it will reduce in proportionate terms from over 40 per cent to just under 30 per cent of electricity generation worldwide in 2040.

What's most important is that Australia, the United States and our partners in Asia are able to manage this transition smoothly and judiciously.

Past disruption in energy markets have given rise to new forms of cooperation. Take the International Energy Agency which emerged during the 1970s oil crisis.

Since that time, new priorities and players have emerged in global markets.

Institutions are often built for the past crisis, not the current and future challenges.

The IEA itself has transformed and continues to modernise.

Energy is not just about oil; it's also about coal, gas, renewables and energy efficiency.

And while China and India are not members, they have good working relationships with the IEA. ASEAN, which has a ministerial dialogue with the IEA, is also closely involved.

Another example is the Clean Energy Ministerial, which has brought together countries including India, China, Indonesia and Korea as well the private sector. Australia and the United States co-lead the Solutions Centre, an initiative that assists developing countries and investors in Asia on projects related to energy security, access and resilience.

This collaboration on energy is of vital importance, as demand but also potentially competition for energy increases.

Conclusion

Energy security is a sine qua non for development in the Indo-Pacific.

Whether it's putting in place systems that will stabilise electricity grids and new technologies which will boost economic growth and reduce emissions.

Or upholding the rules-based order in the region and maintaining open sea-lanes, which CSIS has been so influential in advocating. Or ensuring that countries can access the resources required to meet the needs of their people.

Australia provides much more to the region than just our natural resources. We are at the forefront of new energy developments, including smart grids, carbon capture and storage, energy storage, energy efficiency, and remote, off-grid electricity.

We can help our Indo-Pacific partners meet the energy challenges ahead, many of which Australia is now addressing such as the integration of renewables into the grid.

Energy security is an essential ingredient and goal for countries to develop peacefully, grow their economies and provide a higher standard of living.

The United States and Australia have a vested interest in the achievement of this goal and by working together we will succeed in this endeavour.

Thank you.

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