Speech to APPEA Conference 2023

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Thank you Jacob.

Ladies and Gentlemen,

I too acknowledge and pay my respects to the Kaurna people of the Adelaide Plains.

I would also like to acknowledge and thank the First Nations people who support us and work with us everywhere we operate across Australia, PNG, Timor Leste and Alaska.

To all of you, I extend a warm welcome to Santos' hometown of Adelaide.

South Australia is a great friend to our industry and none more so than Minister Tom Koutsantonis, who addressed us on Tuesday.

It was a breath of fresh air and I want to build on his comments today.

It's not very often that our political leaders are willing to speak up for the importance of our trade, investment and people-to-people relationships with other liberal democracies.

Or for the importance of the open competitive markets – that I have spoken about often – as the foundation of our peace and prosperity since World War Two.

It's also not very often in our industry that we are so warmly welcomed and appreciated for the contribution we make to Australia's world-class living standards and for the leading role we play in the energy transition to net zero.

Tom's words were a reminder that we will ultimately find ourselves on the right side of history.

I hope that encourages all of you to keep pursuing your careers in this future-facing industry which will continue to underpin our modern way of life and without which, net zero by 2050 will simply not be possible.

When I addressed this conference two years ago in Perth, I sounded a warning, saying:

"…The world wants a faster energy transition and many people see that as a world without fossil fuels… despite the historical fact that the utilisation of oil and gas has probably been the single biggest boost to living standards in the history of humankind."

I went on to say that *"Australia can become a carbon storage superpower based on our vast tracts of pastoral and cropping land, and our depleted oil and gas reservoirs."*

I urged the industry to *"consider decarbonisation not as a threat – but as an opportunity to establish a new, large-scale industry producing carbon offsets that will be in heavy demand from emitting countries that lack Australia's competitive advantages in carbon storage."*

Just two years ago, there was some resistance and even some scepticism about my comments, so I am delighted to see this year's APPEA conference has been built on **leading, shaping and innovating as we accelerate to net zero**.

And I am delighted not only to see carbon capture and storage as an accepted low emissions technology of the future, but to see Australia's competitive advantage recognised by the International Energy Agency.

In its 2023 Energy Policy Review released recently, the IEA states that *"Australia is well-suited to large-scale deployment of CCS to facilitate domestic CO2 abatement and support regional emissions reductions."*

At Santos we want to capitalise on this advantage, and we are making real investments to accelerate CCS deployment.

Late last year we formalised our energy transition business.

Starting from a relatively small team in 2017, we've now established Santos Energy Solutions as a standalone business that is focused on providing low emissions processing of pour upstream products, decarbonisation and carbon management services as well as developing our cleans fuels projects for the future.

It was in November 2021, less than two years ago, that Santos took a final investment decision on the Moomba CCS project and it is very exciting to now be just a year or so away from first injection of CO2.

It is the first of our three-hubs strategy for CCS in Australia.

We are still working towards bringing the Darwin/Bayu-Undan and WA hubs to fruition.

Moomba CCS will store up to 1.7 million tonnes of CO2 per year.

I am very confident it will succeed because we have been injecting gas into depleted wells in the Cooper Basin for decades.

We understand the reservoirs and their injectivity very well.

Moomba CCS, when it starts up, will be a game changer for the technology and a game changer for the future of gas, both in Australia and in the Asian region.

Because if we can deliver abated gas to our customers at costs of around US$24 per tonne of CO2, this will decrease the cost of the energy transition.

It will allow existing energy infrastructure, appliances and industrial processes to continue to be used while new energy technologies are commercialised over time.

Decreasing the cost of the energy transition matters.

Because it is the poorest people in society who will remain in energy poverty or be forced back into it, if we can't contain energy costs.

Australia is not immune to this problem.

As the IEA's 2023 Energy Policy Review said, *"The ACCC retail pricing inquiry of 2018 found that 30 per cent of the lowest income households spend eight per cent on fuel, but this has greatly increased since. Judging by the United Kingdom fuel poverty definition… energy poverty is becoming an issue"* for Australia.

This means we have to keep investing in new gas supply to put downward pressure on energy prices and we have to minimise the costs of abating both gas production and the industrial processes where it is consumed.

Renewables are part of the solution, but they are not the holy grail.

The main game is gas because it makes renewables possible, it provides feedstock for fertilisers and chemicals, and it fires the high temperature furnaces required for bricks and cement.

However, while getting to net zero should be all about emissions reductions, our opponents are only about killing oil and gas.

Which is why they now seek to discredit carbon capture and storage as well.

As you walked into this conference over the last few days, you will have been lectured about the millions of lives that oil and gas is said to be at risk due to climate change.

But no thought is given to the human cost of a world without oil and gas.

The world could not feed itself today, or anytime soon, without fertilisers made from gas.

Without ammonia-based fertilisers made from natural gas, we could feed about 4 billion people, roughly half of today's global population.

And we do not yet have replacements for the materials that are fundamental to our modern civilisation – steel, cement and plastics.

Even Jacob's new Tesla is full of moulded plastics!

The freedom that we all take for granted to:

+ live in cities,
+ pursue an education,
+ a career,
+ turn our minds to technology development or the arts,
+ have the leisure time to go to the football,

is because of fossil fuels.

In the United States, in just over 200 years, the amount of labour required to produce a kilogram of grain fell by more than 98 per cent, as did the share of the country's population engaged in agriculture.

All because of mechanisation, fertilisers and chemicals – based on oil and gas.

You might now be asking, but what about Scope 3 emissions – the emissions produced when our products are consumed.

The report released by APPEA earlier this week showed that nine net-zero zones, or hubs, could be created across Australia, where more than 90 per cent of emissions from heavy industry could be neutralised through shared infrastructure for carbon capture and storage.

Here in South Australia, emissions from steel, cement, lead and zinc plants could be captured and transported by pipeline to Moomba for permanent abatement.

In fact, to achieve the government's targets under the Safeguard Mechanism, industries like steel, cement, aluminium and ammonia need us to succeed in delivering large-scale, low-cost abatement and affordable abated gas.

Otherwise, Australia will lose those industries and those jobs as well.

We want to work with Ministers like the Minister for Industry and the Minister for Energy to build support and confidence with these customers so that we can keep a viable manufacturing sector in Australia.

Which is why I am really excited right now about the potential for direct air capture, or DAC, technologies that take CO2 straight out of the atmosphere.

This technology, combined with carbon capture and storage, holds immense potential for offsetting the emissions from hard-to-abate sectors, including aviation.

Just last week, I visited Welshpool in Perth to witness commissioning of a DAC technology that we will soon be trailing in the Cooper Basin.

It's been running intermittently for several days now.

And it is working as planned, with lower energy inputs than other direct air capture technologies that we know of.

The trial unit is able to capture a quarter of a tonne of CO2 per day and will soon be transported to Moomba where we will optimise its performance.

Later this year, we will scale the technology up to build a one tonne per day unit for delivery to Moomba and further trials next year.

I believe we are on a path to meet the cost target I have set of US$75 per tonne by 2030 for direct air capture, an order of magnitude lower than average global costs of DAC technology today.

This puts us in reach of the possibility of eliminating Scope 1, 2 and 3 emissions from natural gas production and use.

When combined with the low cost of Moomba CCS and the large-scale carbon storage capacity of the Cooper Basin – up to 20 million tonnes of CO2 per year for 50 years – this could be the start of an exciting new industry for South Australia in carbon management services, not just for oil and gas production, but for our customers and other third parties.

And, when DAC, CCS and solar electrolysers are combined, we have the inputs for synthetic methane, also known as “e-methane.”

Many of you will have heard a lot about green hydrogen, but when I visit my customers in Japan and Korea, they are more interested in e-methane, made by combining green hydrogen with CO2, a process called methanation.

Last year, Tokyo Gas, the biggest city gas supplier in Japan, commenced methanation trials at Yokohama.

The methanation process will use CO2 emitted and captured from nearby factories or other customers, potentially making it a closed loop, net-zero energy system, again eliminating Scope 1, 2 and 3 emissions.

Like all energy transition technologies, cost is the biggest challenge.

To address this, Japan is trying to build global supply chains of synthetic methane, with Tokyo Gas conducting feasibility studies in Malaysia with Sumitomo and Petronas, and in North America and Australia with Mitsubishi.

I am excited that here in Australia Santos is leading the way on methanation.

In partnership with Osaka Gas, we have commenced front end engineering on Australia’s first demonstration scale project.

The advantage of synthetic methane is that it would avoid trillions of dollars of costs in energy infrastructure, appliance and equipment replacement.

Because it is the same substance as the natural gas in the energy system today.

This an exciting opportunity for Australia – for Moomba, for Darwin, for the Pilbara – one we did not contemplate even two years ago.

People, innovation, technology and science will solve the energy transition problem.

But there is no single silver bullet.

It is why I encourage governments not to pick winners.

It is why low carbon technologies should be incentivised on a technology-neutral basis so that we can find the lowest-cost path to net zero.

If governments are truly anti-emissions rather than anti-fossil fuels, they should embrace the ongoing use of abated oil and gas, synthetic methane, direct air capture and CCS – because the benefits of using existing infrastructure and energy systems will save trillions of dollars and deliver net zero without compromising our living standards.

As the IEA's status report on carbon capture, utilisation and storage stated last September, *"To translate momentum into action, policy makers should roll out additional policy support, while also ensuring that appropriate legal and regulatory frameworks are in place. Growing recognition of CCUS technologies' role in meeting net zero goals is translating into increased policy support such as in the United States, where the Inflation Reduction Act (IRA) of 2022, coupled with funding under the Infrastructure Investment and Jobs Act, is expected to incentivise greater CCUS deployment."*

As I said two years ago, Australia can be both a clean energy superpower and a carbon storage superpower.

This is Australia's competitive advantage in the world – in gas, in critical minerals, in carbon storage resources as well as renewable energy.

It is an area where our people have skills and know how.

And, as a responsible global citizen, it is our duty to use this advantage to continue to grow and decarbonise our own economy as well as the economies of our trade and investment partners in Asia.

These economies and the prosperity of their societies have been built on Australian resources for decades.

However, Australia is falling behind the United States which is growing both its gas industry and its CCS industry because it understands the ongoing need for abated gas in its own economy and in customer countries in Europe and Asia.

And because Australia does not yet have the regulatory frameworks in place to offer carbon storage capacity that Japan and Korea need, they are now looking to Indonesia and Malaysia.

Australia simply cannot afford to turn its back on the gas industry or to shun the opportunity of new, exciting industries such as CCS and synthetic methane which have the potential to deliver the energy transition faster and at lower cost.

I welcome the federal government's announcement in the Budget of a *"review that will examine opportunities for regulatory and administrative certainty and efficiency for carbon capture and storage projects."*

The industry is ready to invest and we are anxious to work with the government as a matter of urgency in a process to define these opportunities so that Australia is not left behind the US, Europe, Indonesia and Malaysia in the race to build new, low-cost abated gas and other decarbonisation industries.

Thank you.