

CEDA Keynote Address

David Gillespie, A/Managing Director Jemena
Mapping the Energy Sector's Path to Net Zero

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Good afternoon and thank you for your kind introduction.

I would also like to pay my respects to the Traditional Owners of the lands on which we meet the Wurundjeri and Bunurong (Boon Wurrung) People of the Kulin Nation. In the spirit of reconciliation, I pay my respects and honour Aboriginal and Torres Strait Islander Elders past and present and acknowledge their stories, traditions, and living cultures as we commit to building a brighter future together.

I would also like to recognise my fellow panel members: Samantha McCulloch the Chief Executive of Australian Energy Producers, Anna Freeman from the Clean Energy Council, and Richard Bolt of the Nous Group.

Thank you Sam, Anna, and Richard for making the time to attend what promises to be a thoughtful and considered conversation on how we best decarbonise our economy and achieve our emissions reduction targets.

I would also like to thank CEDA: Melinda, Pia, Clint, Lara, Mark and the team for hosting today's luncheon. Your work plays a pivotal role in enabling meaningful conversation on a broad range of topics and is to be commended.

Finally, I would like to acknowledge you all for attending this afternoon. I know today's audience is composed of a broad cross-section of representatives from Australia's energy sector, the media, industry, consumer representatives and others, and I welcome the opportunity to engage in open, honest, and sometimes challenging debate about the best way to tackle the energy trilemma and deliver reliable, affordable, and sustainable energy as we navigate the path to net-zero in just TWENTY-SEVEN years.

Setting the Scene – Australia's Natural Energy Advantage

Australia has long benefitted from its natural energy advantage. Our natural resources, ingenuity, and physical proximity to countries such as Japan and South Korea has seen our country labelled a global energy powerhouse.

These strengths have:

- underpinned our economy – with energy exports hitting a record high of **FOUR HUNDRED AND SIXTY SEVEN** billion dollars last financial year,
- been the backbone of industrial Australia,
- created tens of thousands of jobs directly, and thousands more indirectly, and
- importantly enabled Australia’s living standards to be amongst some of the best in the world.

Sitting behind these strengths is an energy sector built on the backbone of three separate systems: electricity, gas, and liquid fuels. Key here is a fundamental broadening of our traditional understanding of energy – to include not just energy delivered as electricity through the NEM – but the totality of energy delivered through these three systems.

Historically we have considered these systems, and how they meet Australia's energy needs, quite separately. However as we start to grapple with the opportunities and challenges presented by the transition to net-zero, we would do well to understand how these technologies can and will best work together to deliver the energy transition, while retaining our natural energy advantage.

Which brings us to today's topic: *Mapping the Energy Sector's Path to Net Zero*, an apt title but perhaps a misleading one as from my vantage point, as the head of an integrated energy company with interests in both electricity and gas, the exact mix of technologies we use to decarbonise and power our economy in the future is still very much to be determined.

There are however some things we do know. We know that in TWENTY-TWENTY TWO coal, oil, and gas accounted for more than NINETY-ONE per cent of Australia's *total* energy production, with renewable energy accounting for the remaining NINE per cent.

We're also beginning to see some of the practical realities associated with the energy transition starting to play out – be they issues around available resources, labour issues as a result of an aging and shrinking workforce, or community opposition to key energy projects.

And finally we are starting to face into some of the financial challenges associated with the energy transition, noting recent modelling from Net Zero Australia - which no doubt Richard will talk about - places the cost to decarbonise our economy at somewhere in the vicinity of SEVEN to NINE trillion dollars of capital investment by TWENTY SIXTY; a six-fold increase on current investment levels.

This in a context where we are up against the clock noting our challenge is not just net zero, but net zero by TWENTY FIFTY.

Developing the Energy Sector of the Future

This context provides important clues on how we best navigate the energy transition. It also highlights the critical topics we must grapple with on the path to net zero being:

- **How and in what order we decarbonise** our electricity, gas, and liquid fuel systems to deliver maximum value.
- How we most effectively develop the **storage solutions** needed for the energy system of the future.
- And finally, how we develop a **regulatory and policy framework** to stimulate and support the investment needed to achieve our decarbonisation goals.

As we face into these complex challenges, we would be well placed to be guided by the same principles which have traditionally delivered Australia's energy advantage. Principles which have called on us to be technology agnostic, encouraged us to view the energy system as an integrated system, and placed our customers at the heart of that system.

Solving the Decarbonisation Challenge

Looking at the first of these challenges, decarbonisation, we must embark on a decarbonisation pathway which recognises that, while growing, the current pipeline of projects which promise to bring additional megawatts of renewable energy into the grid is simply not sufficient to decarbonise the grid, replace Australia's reliance on liquid fuels, and electrify gas demand.

We are in effect living in a period of constrained renewables.

It therefore makes sense then that we use what limited renewable generation we have to displace coal and liquid fuels, the highest carbon emitters, as energy sources first and foremost. This was the principle finding of a report recently released by the Boston Consulting Group.

It found that for every new megawatt of renewable electricity generation that is produced, the greater emission reduction impact comes if it is used to replace power sourced from Australia's coal-fired generation fleet as well as electrifying liquid fuels used in light transport.

The report also reiterated that we potentially face a period of fossil-fuelled electrification in the short-to-medium term if we accelerate the shift from lower emissions gas to an electricity grid which is overwhelming still powered by coal.

The report also recommended that while we develop additional renewable generation we also enable the commercialisation and development of low-carbon gases such as hydrogen and biomethane.

Navigating the Policy and Regulatory Grey Space

In this vision of the future, renewable gases such as green hydrogen and biomethane could simultaneously displace natural gas with a green molecule, while also minimising consumer disruption, maintaining customer choice, and supporting whole of energy system resilience through the maintenance of multiple energy vectors.

The rationale to transition our gas networks to renewable gases is also a reflection of the price tag of the overall energy transition, something which as I mentioned earlier, sits somewhere in the vicinity of SEVEN to NINE trillion dollars.

This type of investment is unprecedented in modern times. However if we are to keep costs down and our energy system reliable we must recognise not only the evolving role of our gas networks, but also address the limitations inherent in our current policy and regulatory frameworks.

While these frameworks have historically served us well, helping to maximise efficiencies, support investment, and champion the rights of our customers, policy support and regulatory reform is required to shake the ghosts of regulatory frameworks past in order to enable investors to take both short-term and long-term decisions in a space of increasing uncertainty.

With this lens, it is useful to take stock of how far we have come noting the success of regulatory measures which have enabled great investment in renewable electricity generation.

And while there is undoubtedly more work to be done in electricity regulation to support the transition, the regulatory and policy framework needed to enable our gas sector to decarbonise is a laggard, with Australia arguably TWENTY years behind our peers overseas.

While we may be behind places like Denmark – which aims to convert its gas network to renewable gases by TWENTY THIRTYFOUR – we can also learn from their journeys, and we would do well to consider how proven approaches such as: renewable gas certification and recognition of renewable gases in emission reduction frameworks such as NGERS – the National Greenhouse Emissions Reporting Scheme – can be adopted here in Australia to accelerate the development of a renewable gas market.

Solving the Storage Challenge

The rationale to introduce renewable gases at scale also reflects the reality that while storage solutions are developing we still have much work to do to deliver the SIXTY-ONE gigawatts of storage capacity AEMO forecasts will be needed by TWENTY-FIFTY – a SEVEN-TEEN fold increase on current levels.

Labelled by AEMO as our most pressing need for the next decade, storage is the potential achilles of the Australian energy transition.

But if we expand our understanding of storage to encompass more than dispatchable energy from batteries and pumped hydro, then we stand a real chance at turning a weakness into a strength.

In this context we should reframe the role, not just of natural gas, but of gas infrastructure to include: transmission, distribution, and storage.

This new definition is backed up by the engineering facts; if we take Jemena's gas network in New South Wales as an example, we know it has the ability to store around EIGHTY gigawatts of energy or, to put that in context, the equivalent amount of energy stored in around SIX million home batteries.

Nationally, that figure increases tenfold to around SIX billion home batteries, meaning Australia's gas networks can be used to store gases, and in the future renewable gases, which can be dispatched on demand to support electricity reliability as generation from intermittent renewable sources continues to grow.

On this, the role of gas generation is well accepted here with AEMO forecasting in its TWENTY-TWENTY TWO Integrated System Plan that 10 GW of gas-fired generation is needed by 2050 to efficiently operate and firm Variable Renewable Electricity.

Customer View: Reliable, Affordable, and Sustainable Energy

Switching gears a little, I wanted to reflect on the people at the centre of the energy transition: our customers.

Australians have long proven they are willing to lean into the energy transition, and we can be proud of the way in which we have embraced renewable technologies, such as solar panels, at a household level.

All energy users have a rightful place at the centre of the energy market. And it is incumbent on us as an industry to ensure no customer is left behind as we navigate the energy transition.

At the same time, we know that while residential emissions from natural gas are the low-hanging fruit of the energy transition, they represent just ELEVEN per cent of Australia's natural gas consumption and TWO per cent of our emissions.

Our real opportunity lies in providing a renewable solution for industrial users who are SEVENTY per cent of our domestic natural gas consumption.

These same customers play a crucial role in our economy, noting through high temperature manufacturing and as a feedstock gas contributed FIVE POINT EIGHT billion dollars in economic activity and supported just shy of THIRTY THOUSAND jobs in the last financial year.

For these customers electrification is not an emission reduction option – regardless of how much renewable generation is brought online.

They tell us they need gas to power their operations, and that in order to remain competitive globally and meet their own emissions reduction targets, this gas needs to be decarbonised.

It stands then that if we want to retain our manufacturing base and the many jobs, products, and other benefits that come with it, then it makes sense for us to decarbonise our gas supply chains via the range of policy measures and approaches I've outlined today.

Conclusion: One Technology Won't Fit All

Needs

While we all agree that we will need to build new infrastructure to support the energy transition, we are left to contemplate how much we build, how quickly we can build it, and how much we are prepared to spend.

Undoubtedly what is achievable in theory comes up against a range of challenges in practice from a lack of labour, to a shortage of materials needed to build new energy infrastructure, through to issues around the social license of new energy builds.

We also know that by their very nature energy projects can take anywhere from TWO to TEN years through their planning and approvals processes.

With this context it makes sense that we consider how our existing infrastructure can be decarbonised to best place us on the path to net-zero.

At a customer level, this will also enable us to make the transition easier for our customers, without limiting customer choice, or in the case of the commercial and industrial sectors curtailing their ability to operate and compete in a global market.

This means challenging our traditional thinking on the separateness of our electricity, gas, and liquid fuels systems; developing a rules system which brings together these technologies in such a way that we resolve the energy trilemma – and resolve it by TWENTY FIFTY – while continuing to keep our customers at the heart of all we do.

The values I outlined earlier – of being technology agnostic, embracing integration, and maintaining a customer focus will serve us well here.

So too will you the people in this room and I am confident knowing that all of us and tens of thousands of Australians working in the energy sector are all committed to the same goal of delivering the energy transition and maintaining Australia's energy advantage for generations to come.

Thank you.

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