Australian Energy Week

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Check against delivery

I'd like to begin by acknowledging the traditional owners, the Wurundjeri people of the Kulin nation, on whose land we meet on today, and pay my respects to their Elders, past and present.

Thank you, too, to the team behind Australian Energy Week for the invitation. It's a pleasure to be here to share some reflections from the Climate Change Authority with you all, in place of our Chair Matt Kean. Matt was hoping to be here today, but has had a change of plans following the very recent arrival of his new daughter. All is going well on that front, but he is unable to be here today.

Gatherings like Australian Energy Week are an important source of ideas, and the Climate Change Authority always welcomes the opportunity to join the conversation. Speeding up Australia's energy transition has been a major focus over the past few days, and there is no time to lose.

Coal-fired power plants are aging. Here in Victoria, we've recently seen the latest evidence of the risks to reliability from an ageing generator fleet – with the state's second-largest power station, Yallourn, offline after unexpected maintenance issues.

Australia's progress on reducing emissions needs to accelerate for the nation to hit its 2030 goals, and a more ambitious 2035 target, on the way to reaching net zero emissions and climate impacts are disrupting lives and livelihoods around Australia with increasing frequency and severity – with Treasury estimating back-to-back disasters have cost this country $2.2 billion just in the first half of this year alone.

The people in this room know better than most that the path to reducing Australian's emissions runs through the electricity system. Not only is it our largest source of direct emissions; clean, abundant electricity can unlock deep reductions in emissions right across the Australian economy.

That's why the Climate Change Authority has had a strong focus on the sector in recent years. Our latest Annual Progress Report noted Australia is making good progress. You are probably familiar with the numbers:

- Renewables are now providing more than 40% of the electricity in our main national grid.
- Around 1 in 3 households have solar on the roof.
- Big battery projects are plugging in and powering up across the country, harnessing abundant wind and sun to balance energy supply and demand around the clock.

That progress is very welcome, and has driven the emissions intensity of our grid down to new lows in the first quarter of 2025. But there is also much more to do.

The Authority's most recent annual progress report called for focused government action to accelerate the roll out of renewables in several important ways. The government asked us to provide a deeper dive on those issues. I'm pleased to be able to share with you today a preview of the advice we'll very shortly be releasing through our latest report: *Unlocking Australia's clean energy potential*.

In preparing this advice, the Authority has consulted with the energy market bodies and many other electricity market experts, some of who are here today. We thank all of those who contributed for their generous insights and thoughtful analysis. We also weighed up more than 200 submissions to an earlier Authority issues paper. We acknowledge the important contributions of the energy, climate and community groups who participated in this.

Turning to our report, we find that the electricity sector is headed in the right direction. We have clear national goals; an integrated sector roadmap designed with deep expertise; and growing industry capability to support the deployment of renewables at scale. It's clear, though, that the scale of the transition, and the speed we need to deliver it, requires governments to get involved in ways they may not have done at other times. There is a

strong role for national coordination and close collaboration with states and territories, to ensure Australia reaps the full economic and environmental benefits that clean energy offers.

Take the federal Capacity Investment Scheme. We heard Minister Bowen's announcement in his speech earlier this week that the CIS will move to a one stage tender process to reduce the time it takes to finalise tender outcomes from 9 months to 6, and his desire to continue to learn and improve on the CIS as we go. Our Annual Progress Report recommended its extension and expansion, and our new analysis reiterates the need for additional government action to smooth the transition away from fossil fuels in our power grid.

The Authority's view is that present policy settings and the market alone may not deliver sufficient new generation and storage to meet national targets. The Australian Energy Market Operator has identified we'll need 33 gigawatts of new large-scale renewable capacity in the National Electricity Market alone by 2030 if the grid is to reach 82% renewables. Nationally, including the Western Australian and Northern Territory's grids, the total extra capacity needed is about 42GW.

We are presently connecting less than 3 gigawatts of new generation a year.

To stay ahead of the curve on the closure of coal-fired power stations and meet national targets, that number needs to lift to about 6.6 gigawatts a year. This is within reach – the Clean Energy Regulator estimates that total capacity reaching final investment decision this year could be more than 6GW, based on the successful bids under the first tender of the CIS. And the CIS tenders have been significantly oversubscribed, so there is cause for optimism. And since we need to keep decarbonising the grid beyond 2030, there will be an ongoing need for further generation and storage capacity past that time.

That's why our new report recommends the Australian Government work with states and territories to reach a shared understanding of how much renewable capacity will be built by 2030 beyond the CIS target – for example through Renewable Energy Transformation Agreements, other state and territory commitments, and private investment.

If required, the Government should then expand the renewable capacity target under the current CIS to close any remaining gap to achieving the 82% renewable generation target. This should take into account advice from the Australian Energy Market Operator (AEMO) on the size and quality of the investment pipeline and the capability of Australia's grids to accommodate additional projects before 2030.

With CIS tenders currently scheduled to end in 2027, the Authority also recommends a capacity mechanism like the CIS continues contracting new projects from 2028 - to bring on new capacity at the pace and scale that is required beyond 2030. The post-2027 scheme for stimulating generation and storage investment should take into account: lessons from the CIS; and the recommendations of the Nelson Review of NEM wholesale market settings which is currently underway.

We acknowledge this is a big recommendation, but decarbonising Australia's grid is a big job. The Australian Government is best placed to lead and coordinate the delivery of this once-in-a-generation transition, in the national interest.

Now, as this transition gathers pace and the national share of renewables continues to rise, keeping the grid stable and reliable is a high priority. As more coal-fired power stations close, Australia needs investment in infrastructure that can replace all the contributions they make to the electricity system – not just generation. As the people in this room know better than most, frequency control, inertia, voltage control, and system strength are all essential too. Gas and hydro can play a role in providing those services. Synchronous condensers can also support inertia, system strength and regulate voltage.

For the uninitiated, Australia's grid has a frequency of 50 hertz, much like a heartbeat. Deviate above or below that rate for long and the grid will become unstable, and shut down to avoid damaging electrical equipment. A synchronous condenser is a large electric motor with a rotating shaft. It doesn't feed new power into the grid, but helps regulate its voltage to keep things stable. AEMO estimates we need about 22 of these devices, deployed at strategic spots throughout the grid. A cost-effective way to do this could be to add a so-called 'clutch' to existing gas-fired electricity generators, allowing them to operate as synchronous condensers.

AEMO's work indicates Australia will need further gas-fired generation capacity for limited use at times of peak demand and low renewable supply through the year. So another option is to procure gas generation and

synchronous condensers as combined new kit. Our report recommends the Australian Government works with the Energy and Climate Change Ministerial Council to enable the deployment of synchronous condensers with gas-fired generation capability to maintain system strength and support reliability. These assets should be able to run on liquid fuels, biomethane, hydrogen or other renewable fuels, and would only be deployed when zero-emissions options are unavailable. Our assessment is that AEMO would be best-placed to plan and procure this system reliability infrastructure, which would then be owned and operated by market participants.

So far today my remarks have focused on the 'big stuff' – the large-scale renewable energy infrastructure that will be needed to decarbonise the grid. Deploying that 'big stuff' at pace is essential and the Authority's recommendations would help industry and investors get on with it in close partnership with government.

At the same time, the tumbling price of solar panels and batteries means there's still a lot of scope to turn more rooftops into power plants too. Australia has a world-leading share of properties with solar panels – at 4 million systems and counting. This has lifted generation capacity to more than 21GW as of the end of last year.

Commercial and industrials sites, though, boast barely a quarter of that amount. A survey by the Clean Energy Finance Corporation a few years ago estimated that commercial and industrial rooftops could host more than 28GW of solar. The median size of present systems is only 15 kilowatts, even though they could be as big as 5 megawatts. Not every roof can host such a load, of course. But many can carry a lot more than they do now, with the right incentives.

Our report proposes governments consider offering incentives so that commercial and industrial facilities accelerate their take-up of solar and batteries, incentives such as:

- time-dependent feed-in tariffs
- tax deductions for combined solar and battery systems and
- expanding the existing Small-Scale Renewable Energy Scheme.

These efforts could complement the government's new battery subsidies for households and small businesses. Our upcoming report has quite a bit to say about batteries and other consumer energy resources like EV charging. We need a lot more of this infrastructure – spread out right across our suburbs and towns – to see Australians make the most of locally-generated solar and unlock capacity to 'electrify everything'.

One particular opportunity is leveraging the vast electricity distribution networks already lining our cities, towns and streets. These networks are well-placed to host community-scale batteries and kerbside electric vehicle charging – making more efficient use of the abundant solar being generated in homes – and soon businesses – across Australia. By absorbing unused solar in the middle of the day, we can better balance electricity supply and demand, stabilise the grid and return more energy to households – whether they can afford solar and a battery or not. It would require ring-fencing waivers to allow electricity network companies to own and operate an expanded range of assets, potentially in partnership with third parties.

Generating and storing energy closer to the point of demand has another benefit – managing the need for further transmission buildouts, keeping bills as low as possible for everybody. AEMO estimates that if batteries distributed in homes and commercial sites can be coordinated, they will reduce the need for grid-scale investments by $4.1 billion by 2050. So we can make more from the same assets, maximising the benefits for Australian homes and businesses. And although not a major focus of our new report, we do note the opportunities and benefits of continuing, indeed accelerating, the energy efficiency and productivity agenda.

These are some of the main recommendations from our upcoming report. I encourage you all to take the time to read it when it's released later today – the Authority welcomes ongoing dialogue on these important issues.

In closing, we are deep into the 'doing' phase of the necessary overhaul of Australia's electricity system. This brings challenges we've never had to grapple with at this scale before. We're having real conversations with communities – no longer hypothetical ones – about what gets built, where, and how the benefits and costs will be distributed.

We're working through hard decisions about trade-offs and competing priorities.

We're trying to find middle ground on topics where people of good conscience can – and do – disagree, in an information environment that tends to push debate towards the extremes.

And we're working through very practical issues like workforce capacity, supply chain constraints and industry know-how, as we try to move at a scale and pace that reflects the urgency of the task.

It's certainly not easy, but the work your sector – and each of you – are doing is crucial,

- in delivering the deep cuts in emissions we need now to avoid the worst impacts of climate change
- in building a contemporary energy system that can meet Australia's needs now and in generations to come
- and in helping Australia seize our potential as a renewable energy superpower.

Renewable energy is the essential ingredient for a cleaner, safer and more prosperous Australia.

All power to you, as you keep powering up our nation.

Thank you.