Flex focus: From DER towards flex

FlexForum recently hosted a conversation with Dr Gabrielle Kuiper about Australia's "behind the meter" energy transition. As the Australia–Southeast Asia DER Lead at CSIRO, Gabrielle has over 25 years of experience in the fields of energy, climate change, and sustainability. It's fair to say she knows her flex.

Gabrielle presenting at the Meridian offices - 08 April 2026

Gabrielle shared some fascinating insights into the Australian journey - from a modest 2% renewable energy target by 2020 (set in 2001) to today where renewables supply 44% of Australia's electricity, and the nation is reaching for 82% by 2030.

Here are our key observations from the session…

Solar and battery surge

The renewables story in Australia is clearly the solar and battery story. There is now 40GW of solar (large and small scale) in Australia with another 3GW of solar being added every year. This is the largest per capita globally. As for batteries, they're installing around 7,000 household batteries every week. Solar is no longer "just for the rich" with middle income families the most likely to install solar systems.

Solar pays for itself now. While subsidies and support remain in place (albeit minimal), one of the under-appreciated benefits is their role in building a world-leading, efficient and low-cost installation ecosystem (e.g., relative to NZ or the USA). This ecosystem has enabled over 600,000 battery installations in a year following the launch of the cheaper home battery programme.

Flexibility not being fully used

Australia now has a significant flex resource including 5GW of batteries. But the resource is not being tapped to its full extent as pricing signals do not motivate people to say yes to flex.

Pricing signals have become a recent focus. More emphasis has been on developing physical coordination and control mechanisms – dynamic operating envelopes, emergency backstop, etc – to manage operational challenges, and less emphasis on mechanisms for using flex.

Household batteries are mostly being self-managed. People are using timers/apps (either their own choice or via their retailer) to maximise use of their cheaper solar power while roughly 15% of the resource is coordinated by flex coordinators (excluding those managed by retailers).

Australian distribution networks are less constrained than their New Zealand peers, for example, they have more spare capacity (even with all that solar being added to the system). The New Zealand networks will hit limits faster/sooner than Australian networks due a range of factors including lower ADMD (after diversity maximum demand) assumption used in network planning – roughly 2.5kW versus roughly 7kW (though that varies across that country).

Same same, yet different

Australia and New Zealand are on parallel electricity and flex journeys, but the factors behind Australia's journey are different to those here.

From our understanding, the initial policy focus in Australia was climate change and decarbonisation. This focus then shifted to improving energy affordability, and then onto managing the system challenges of the surge in solar and its duck curve. Though the cheaper home batteries programme (responsible for the uptake in battery installations) is a return to the affordability objective as it aims to reduce power costs for everyone not just those installing a battery, but also by making gas power generation more affordable. The pace and direction of progress can, in part, be attributed to state and federal governments, regulators, and the electricity ecosystem – sort of – all being on the journey together.

It's clear we can learn a lot from each other, as long as we consider the local context and facts on the ground.

That's why FlexForum is committed to sharing observations and insights from across the electricity ecosystem, whether local or international, so we can learn, share great ideas and avoid repeating mistakes.

If you want to discuss this further, get in touch