

How rooftop solar, batteries and EVs can be 'orchestrated' to meet energy demand



By [Karen Barlow](#)
September 2 2023

The latest projections from the Australian Energy Market Operator (AEMO) are being described as a reality check for everyone.

The most dire warning pried out of the 10-year reliability outlook is there could be east coast summer energy shortages. Blackouts by another name. And this bell is sounded just as Australia is being prepared for a hot, dry, and potentially catastrophic latter half of the year.

It is not as dire as what is being made out, according to Tim Buckley, the director of the independent think tank [Climate Energy Finance](#).

"What AEMO seems to be doing is spreading alarm, and to some degree, I would argue misinformation," he told *The Canberra Times*. "There are two charts in there. Figure one and figure two. And they're diametrically opposed."

"Figure one says there's massive reliability problems. Figure two says there's no reliability problems anywhere in the next decade in any of the states except for Victoria in 2028. Now, no reliability problems anywhere in Australia, except for one year in Victoria five years from now."



Electric vehicles being charged in Canberra.

That and Australia has generally reliable power. The last major Australian blackout in 2016 was caused by a once-in-a-100-year storm with wind gusts of 260 kilometre per hour knocking over power lines in South Australia.

"And so it didn't matter whether it was coal, solar or wind, you couldn't get the generation to the consumers because the grid had been smashed," Mr Buckley said.

So a summer of blackouts is not definite by any means.

The main thrust of AEMO's 10-year outlook for the National Electricity Market is that Australia is not getting cracking on the renewable energy transition as fast as it should.

Mr Buckley said "orchestration" of consumer-led energy resources such as rooftop solar, behind-the-meter household batteries, and electric vehicles can help to increase reliability and meet power needs.

Essentially, he said it could be 10 million or so Australian homes using power in a coordinated, orchestrated way to provide either increased demand or reduced demand on a centrally-controlled basis.

The main thing would be for peak load shaving, a quick reduction in power consumption for likely a short period of time to avoid a spike in consumption.

"Actually run it when it's sunny. That's like really bloody obvious. That's called orchestration," Mr Buckley said.

"And if a cloud goes over, the charging could stop and it could reverse. That would be orchestration. Now doing it on one car doesn't change a lot, but fast forward 20 years we have 20 million cars in Australia."



Generic photo of Williamsdale solar farm.

The AEMO report notes Australia's rapid take-up of EVs, roof-top solar, and other electrification. This could go further as it assumes that EVs will reach cost parity against internal combustion engine cars within three years.

It estimates that EV charging could add up to 21 per cent to residential electricity consumption by 2033 while overall household consumption will leap 31 per cent over the next 10 years.

"Emerging policy support for electric vehicles (EVs) and gas substitution demonstrates the potential for more significant use of electricity instead of other energy forms across Australia's economy," the report states.

Mr Buckley said AEMO does not model or value orchestration as it does not have control over it, but he said it is not a negative and needs to be pursued through market and regulatory support.

"So AEMO's just painted it as a problem. It's actually the perfect part of the solution," he said.

"Energy demand is going to go up because of electric vehicles because we're going to stop spending \$30 billion a year importing oil and diesel into our country."

"Let's actually use domestic zero emissions, low-cost energy solutions to replace really expensive, high emissions, imported fossil fuels from states, Saudi Arabia, and so on. Let's think about it as a positive."

Responding to the AEMO outlook on Thursday, the Prime Minister insisted the government was delivering renewable energy and working to fix the energy grid.

"The energy grid was built for a time when solar panels power pocket calculators, not households and businesses and industries. And what we're doing is making sure that it's upgraded," he told reporters in Hobart.

The director of Climate Energy Finance said orchestration is a simple solution that would significantly reduce reliance on coal-fired power that just needs a push.

"We need AEMO and the alphabet soup of Australian regulators to actually be part of the solution in accelerating and simplifying the rules modernising the rules and acknowledging where the grid is going not we're not trying to defend where it's been," he said.

<https://www.canberratimes.com.au/story/8330437/our-new-need-to-orchestrate-energy-to-make-music-of-the-power-grid/?cspt=1693790137|51e1c5220961efaedd6ae74f6926f3a9>