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Tasmania's 'Battery of the Nation' energy plan faces challenge from cheap large-scale batteries

Tas Country Hour / By Hugh Hogan

Posted 2d ago

Tasmania has an extensive system of hydro electricity dams throughout the state. *(Supplied: Hydro Tasmania)*

Tasmania wants to help power the nation by sending hydro-generated electricity to the mainland via an undersea cable, but the dropping cost of large-scale batteries has raised questions about the multi-billion-dollar project.

Key points:

- The Australian Energy Market Operator announced it would be recalculating the costs for building the future energy grid, incorporating the Battery of the Nation pumped hydro and Marinus undersea cable projects
- Some analysts now think utility-scale batteries would be more cost effective and should be used to balance the- energy grid in the future
- The Tasmanian State-owned companies said pumped hydro is still the cheapest option for the National Energy Grid

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The Battery of the Nation project is a plan, by the state-owned company Hydro Tasmania, to build pumped hydro infrastructure in Tasmania.

Pumped hydro acts like a big battery, by pumping water uphill when electricity is freely available, and releasing the water downhill through a turbine to generate electricity when the power is needed.

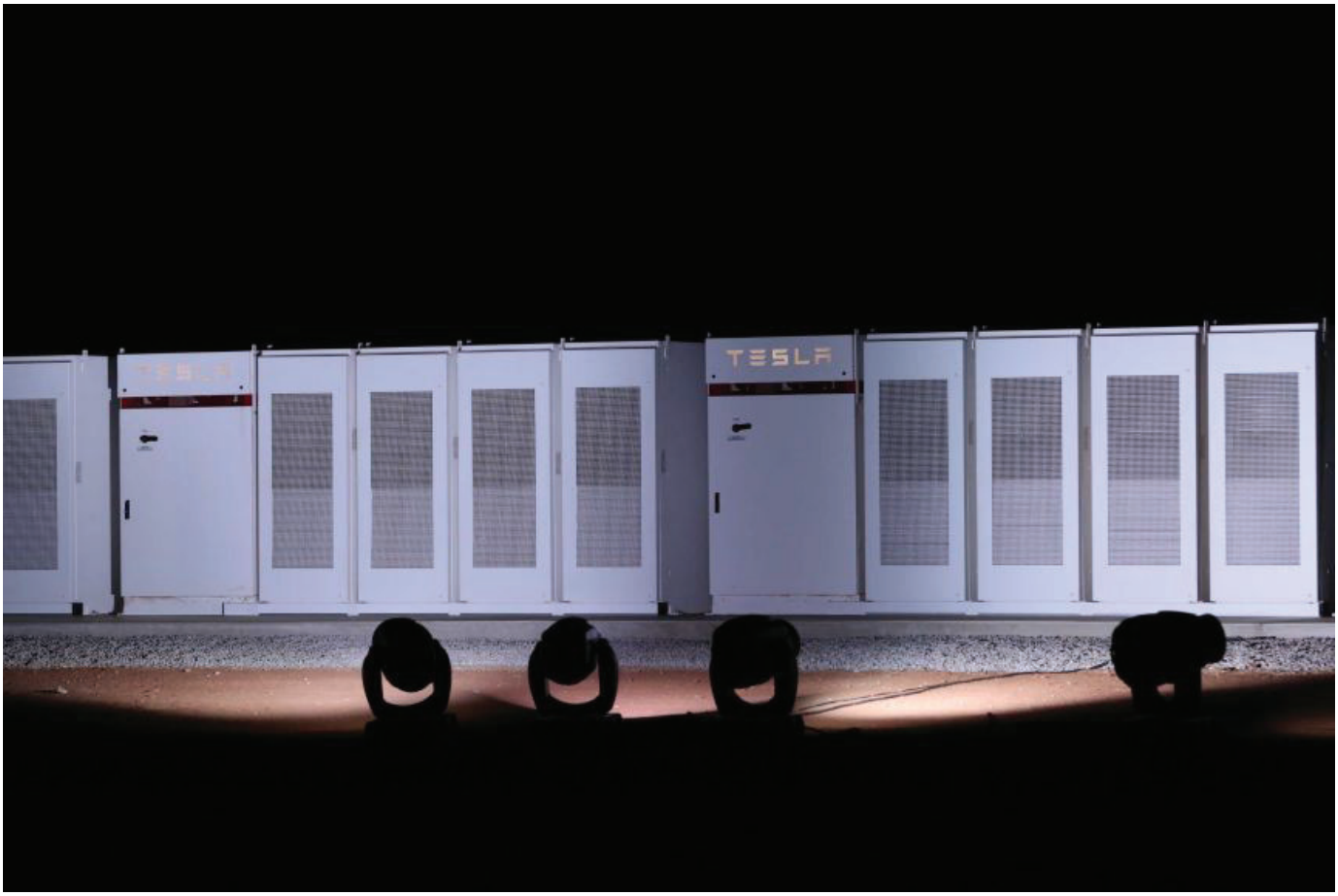
As more and more of Australia's energy generation comes from intermittent sources such as wind and solar, batteries and pumped hydro would be used to balance the system — by soaking up electricity when there is a power oversupply and releasing it again when the power is needed.

The Battery of the Nation project relies on a second development, Project Marinus, by state-owned TasNetworks.

Project Marinus aims to build a second undersea power cable between Tasmania and Victoria.

There is already one undersea power cable between the two states, but it cannot transfer enough power to support a development the size of Battery of the Nation.

The $4.5-billion combined cost of the two projects is risky, say analysts who think more batteries are the best option for the future energy grid.



The Australian Energy Market Operator said large-scale batteries were 30-40 cheaper than original estimates. *(ABC News: Andrew Burch)*

Shifting Market

The Australian Energy Market Operator (AEMO) is expected to make significant changes to its draft 2020 Integrated System Plan, which is the roadmap for building the future energy grid.

An email to stakeholders from the market operator conceded that the costs for building major infrastructure would need to be updated in the final report due later this year.

> "Feedback received included that transmission costs were likely to rise in coming years, costs for batteries were too high, and costs for pumped hydro developments were too low," AEMO wrote to stakeholders on April 27.

The email went on to break down the changes, and said the cost for building transmission lines was 30 per cent higher than original estimates, pumped hydro costs were 50 per cent more expensive and large-scale batteries were 30 to 40 per cent cheaper.

Analyst John Devereaux, from Goanna Energy, said the updated modelling from the market operator was evidence that the market was changing too quickly to be committing to multi-billion-dollar projects like Battery of the Nation and Project Marinus.

"We're not convinced that projects like Marinus are in the best interest of consumers in today's very uncertain market," he said.

"Once you've spent the money, you're committed to the asset for 40 years."

Mr Devereaux said investing in batteries would be a cheaper and less risky way to balance the grid in the future.

"If the whole market changes, consumers could be paying for something for 40 years that they might only use for five or 10, or even zero," Mr Devereaux said.

Hydro Tasmania's Tarraleah power station was one of the first hydro-electric schemes in Australia. *(ABC News: Kieran Jones)*

Cheapest Option

Hydro Tasmania said its estimated $1 billion price tag for building pumped hydro in Tasmania would not need to be adjusted under the changes outlined by the AEMO.

"We're not expecting that those 50 per cent increases will apply to our sites because we've been able to provide more accurate information," Chris Gwynne, program director for Battery of the Nation, said.

"These sites here in Tasmania are different, we are far more advanced in our studies."

The state-owned company said it had selected three potential pumped hydro sites in Tasmania on existing infrastructure that did not have the same costs associated with less developed projects on the mainland.

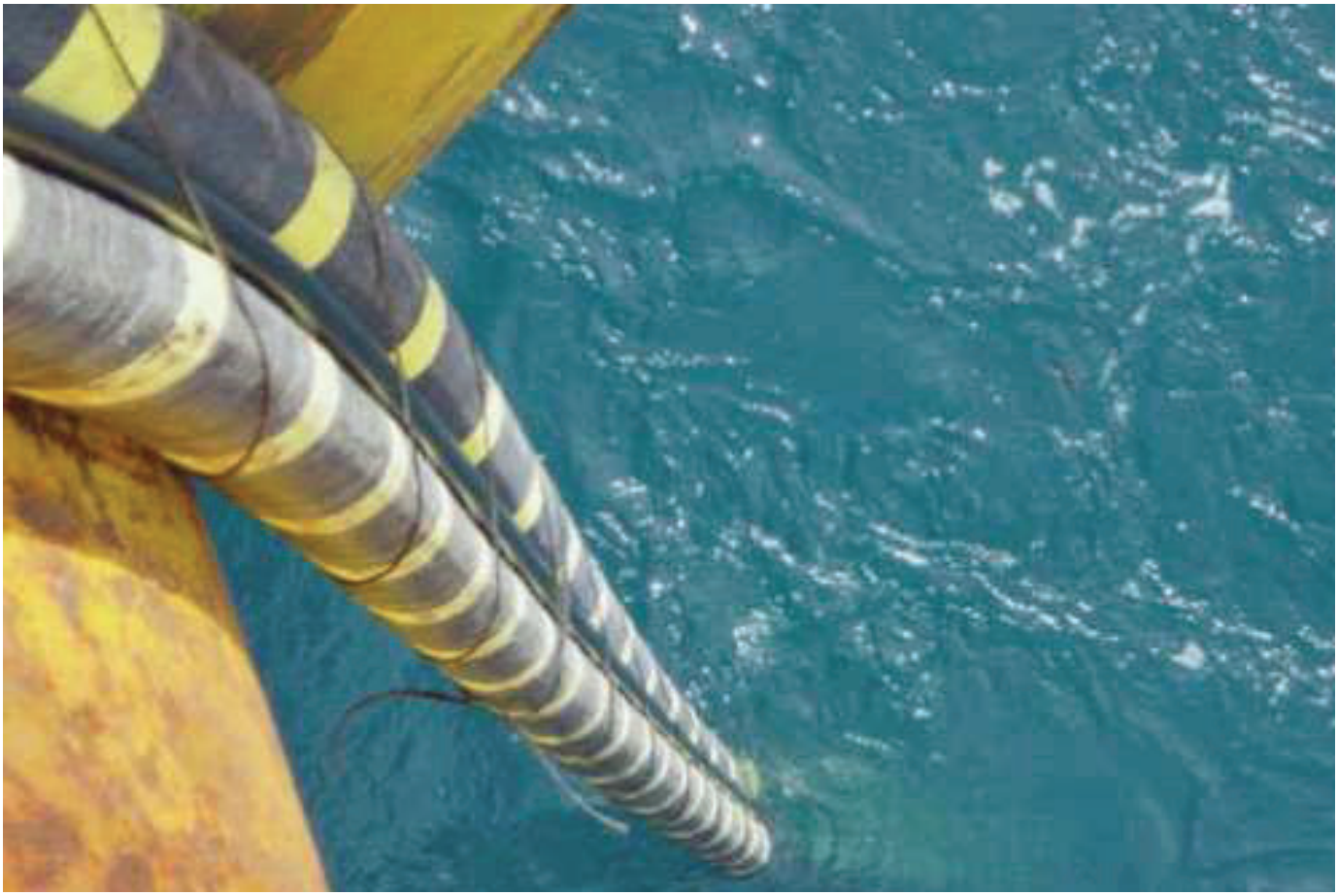
"It's more than likely this will strengthen the Tasmanian pumped-hydro development options relative to the other options to the market," he said.

Chris Gwynne said the project was vital because Australia's energy grid would become more reliant on wind and solar generation, and these weather reliant generators had spikes and lulls in production that did not always match up with demand from energy consumers.

When there was an oversupply of wind and solar generation in the system, the pumped hydro development would pump water up hill, to be released when the market needed it, he said.

Mr Gwynne said pumped hydro provided longer power supply than batteries, which could only work for several hours at a time.

"Batteries will provide short-term stability ... what it won't be able to supply is the longer support in the system, and that's essentially where the value of pumped hydro comes in," he said.



The BassLink cable already supplies power across Bass Strait. Project Marinus aims to build a second cable with three times the capacity. *(ABC News)*

Plugging in the Battery

Bess Clark, general manager for Project Marinus, said the $3.5 billion project was so far advanced it would not be subject to the full 30 per cent increase in transmission costs outlined by AEMO.

"So that's actually good news for Marinus and for Tasmania because it means that our costs are not quite as high as some of the other projects," she said.

But Ms Clark did concede the project would incur some increases.

"While some of those costs might go up, we are still lower than the alternative on mainland Australia," she said.

"Marinus Link is clearly a part of the future energy mix in Australia and it needs to be progressed so that it can be ready when the nation needs it."

Both companies said the combined projects, with an estimated cost of $4.5 billion, would help pull Tasmania out of an expected recession caused by the pandemic.