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Dear Kitt R M Littlejohn

Re: Invitation to Comment on Lake Pūkaki Hydro Storage and Dam Resilience Works [FTAA-2510-1120]

I am writing to offer my comments on the Lake Pūkaki Hydro Storage and Dam Resilience Works application currently under this expert panel's consideration.

While I make brief mention of the potential environmental impacts of the proposal, the bulk of my comment draws on my long-running inquiries into the environmental benefits gained from an affordable and secure electricity system that helps New Zealand make a successful transition to a low carbon economy. These inquiries are undertaken in accordance with my statutory functions, which include "...with the objective of maintaining and improving the quality of the environment, to review from time to time the system of agencies and processes established by the Government to manage the allocation, use, and preservation of natural and physical resources...".

Environmental impacts

There would, of course, be local environmental impacts from allowing the level of Lake Pūkaki to be lowered as part of Meridian Energy Limited's (Meridian) normal business. These environmental impacts are one of the reasons (but not the main one) why access to contingent storage is so severely restricted. Environmental impacts are both physical (water quality, ecology and biodiversity) and amenity. Lake Pūkaki lies at the foot of one of New Zealand's iconic tourist attractions, Aoraki/ Mount Cook. The natural environment is one of the reasons people come to the area.

I am not an expert in the ecology or amenity of the local area so cannot provide specific comment to the Panel. However, I trust the Panel will seek ecological expertise, local input and tourism sector views on these issues.

If the Panel decides to grant the application, I think the negative environmental externalities should be compensated for as part of this arrangement (I'll return to this idea later).

Electricity system operation and regulation

Contingent storage, including in Lake Pūkaki, exists to manage risks to the electricity system. Meridian's use of that storage is currently controlled by Transpower – the state-owned enterprise (SOE) responsible for owning and operating the national electricity grid that is also contracted by the Electricity Authority to operate the wholesale electricity market. Transpower is charged with managing risks to the electricity sector.

The Meridian proposal is not to add significant new renewable energy generation to the national grid. Rather, it is to move the decision-making power regarding contingent storage use. What the Panel is essentially being asked to decide is as much an electricity system and market issue as it is a local resource management issue.

I find it curious that this proposal has come in front of a Fast-track Approvals Panel. It is not a proposal to allocate a currently unallocated resource. Rather it is essentially a proposal to transfer control of an existing resource allocation from one company to another. Should the threshold for use of the storage sit with the SOE tasked with managing risk and resilience of the electricity system on behalf of the public? Or should it transfer to a publicly listed company which, while it may use the storage to help reduce electricity prices, will primarily be focused on the benefit to its shareholders (one of whom is the New Zealand Government)?

I believe it is critical that the Panel hear from both Transpower (as the current decision-maker) and the Electricity Authority (the market regulator) as the proposal represents a significant change in electricity market management. The Panel should also consider commissioning some independent electricity market advice.

In that vein, I think it is important to draw the Panel's attention to analysis undertaken by Transpower in its 2025 report: *Supporting resource adequacy in a highly renewable, islanded power system*.¹

Transpower's analysis distinguishes between short and long-term impacts of a change in management practices. In the short-term, this Fast-track Approval application is ultimately about attitudes to risk and what value we place on resilience or security of electricity supply as a nation. It is not my role to make recommendations on this issue, although I will suggest an alternative way of thinking about it. In submitting this comment my chief concern is the longer-term impacts of giving Meridian unrestricted access to contingent storage. This could 'crowd out' other generation, leading to increased systemic risk without any affordability benefit. It could ultimately slow the transition towards a fully renewable electricity generation system.

Granting unrestricted access to contingent storage increases systemic risk

As we have seen in recent years, the electricity market has struggled to manage dry year risk. The search for solutions has attracted political attention, first with the Lake Onslow proposal, and more recently the proposal for an LNG import facility. The contingent storage in Lake Pūkaki contributes to dry year risk management. Currently Transpower manages Meridian's access to this contingent storage, triggered by the interaction between national lake levels and a set of electricity risk curves.² It is worth noting that the Lake Pūkaki contingent storage was not accessed during the electricity price spikes of winter 2024.³

Meridian argues that with unconstrained access it can optimise the use of the resource. Transpower's analysis finds that in the short-term market optimisation of that resource would indeed lead to lower national electricity system costs in most years, saving \$38 m per year. However, the risk of high prices could increase during a dry year event combined with unforeseen events, such as significant supply outages, at a potential cost of \$440 m.⁴

¹ <https://static.transpower.co.nz/public/bulk-upload/documents/System%20Operator%20-%20Resource%20Adequacy%20-%20Dec2025.pdf?VersionId=r70FwzZVslmzO5epVjYNb7uJfsWgrTt2>

² <https://static.transpower.co.nz/public/bulk-upload/documents/Energy%20Security%20Outlook%20101.pdf?VersionId=Z3ottBmStz16yAGVZWUxF2K7gP.6SrjW>

³ During winter 2024, Transpower raised the trigger level for contingent storage to provide earlier access given the potential electricity system security risks. In the end the deals with industrial gas users took place, the rains arrived and access was not required.

⁴ This figure does not include the potential longer-term costs of curtailment (e.g. reputational damage).

The net benefit depends on the weight given to security of supply and whether electricity retailers will pass the savings on to consumers.

The impact of unforeseen events

I accept that, through responding to price signals, markets are very good at optimising the use of resources. This is the core of Meridian's argument regarding the use of contingent storage. However, this optimisation is based on the best information available at any one given moment and should include management of predictable risks – for example, dry years. However, markets aren't always good at managing *unforeseen* risks – so-called 'black swan' events. There are several examples of these that we can point to in New Zealand's history:

- The current conflict in Iran.
- The dual oil crises of the 1970s.
- Consecutive dry years (e.g. 1991/1992).
- A drop in domestic gas supply in 2024, which coincided with a dry year.

It is not hard to imagine other black swan events – for example, an earthquake or a dry year combined with an unplanned outage at Huntly Power Station.

While markets tend to optimise resource use more efficiently than governments, when black swan events occur, governments sometimes choose to intervene. Currently, faced with a fuel crisis generated by global conflict, the New Zealand Government is considering doing just that. Generally, markets optimise the use of resources better than governments can. When governments choose to intervene, they usually favour resilience over efficiency. So, the question the Panel needs to answer in this case is: What is the value of resilience (security of electricity supply)?

I would argue it is a policy question that is best answered by government.

For some time, I have been calling for this Government – and indeed its predecessor – to publish an energy strategy that makes this preference transparent. The Panel has no such strategy to draw on to inform its decision-making. An LNG facility should reduce risk within the system although it won't eliminate it altogether – the impact of the Iran/US conflict is a current illustration. However, as I outline in a recent letter to the Minister of Energy,⁵ the Government's recent LNG decision signals a strong preference for security of supply over affordability – a rather more risk averse approach.

Potential dynamic impacts of unlimited access to contingent storage

In the longer term, there is the potential for unforeseen consequences from granting unlimited access to contingent storage at Lake Pūkaki. The Transpower analysis suggests this is because the extra generation available would alter the investment plans of generators.

New Zealand is currently witnessing a sizable investment in building renewable energy generation. Some power generators have recently signalled a risk of building too much generation too quickly and putting downward pressure on prices. Meridian Chief Executive, Mike Roan, set out the risks generators are opening themselves up to if the sector moves "from undersupply to oversupply very quickly".⁶ If Meridian has unrestricted access to contingent storage, why would they (or other generators for that matter) maintain or build as much generation over time?

⁵ <https://pce-letter-to-minister-watts-on-lng-5-march-2026.pdf>, 5 March 2026.

⁶ <https://businessdesk.co.nz/article/markets/meridian-on-pukaki-consent-and-be-dammed>.

The Transpower analysis states:

“... as more low SRMC [short run marginal cost] renewable generation is built and wholesale prices are reduced, incentives to invest in maintaining and fuelling thermal back up generation that provide resilience will reduce ... unrestricted access to contingent storage will bring this forward”.

In other words, Transpower sees the over-riding risk of allowing unrestricted access to contingent storage as the early closure of the Rankine units at Huntly Power Station. This could mean that, in the long term, unrestricted access to contingent storage increases systemic risk without any apparent affordability benefit. I note that this insight only applies in the long-term – in the short-term there are clearly affordability benefits.

If the intention of the Meridan application is purely to reduce electricity prices for a three-year term, this dynamic impact could be avoided. However, there is the risk of setting a precedent for the longer term, which could alter generator investment plans. I note that either way the systemic risk mentioned in the previous section remains.

Alternative way of thinking about this problem: a price rather than quantity trigger

While I cannot answer the question of resilience versus optimisation, I can offer an alternative way of thinking about the problem. Instead of a quantity control as we currently have, it may be more efficient to set a fee to access the contingent storage (as part of the conditions). This fee would – quite literally – place a value on resilience. However, the Panel would need to satisfy itself that there is a lawful basis for such a fee to be imposed.⁷

A trigger price would provide Meridan with certainty of access – and allow the market to optimise the value of the resource. Meanwhile, a trigger price would ensure that contingent storage would only be accessed when it is needed. This could help guard against the long-term dynamic risks of the proposal.

The revenue generated from the trigger fee could be used locally to compensate for the negative amenity and environmental impacts of a lowered lake level. The funds could be targeted at controlling predators and weeds, such as rabbits and wilding pines, both perennial local problems. It could also be used to compensate local ratepayers for the amenity impacts if the Panel chooses to do so.

This does not answer the key question: “What is the value of resilience?”. Again, I cannot answer this policy question. Using a price rather than quantity control would make the value placed on resilience more explicit. If you wish to go down this route, I can offer some rational upper and lower bounds.

In the short-term, the lower bound would be based on the trade-off between affordability and resilience. In the longer term, the fee would ideally be higher than the long-run marginal cost of long duration firm generation (for example, operating the Huntly Rankine units). A fee set at this level would incentivise Meridan and other generators to maintain and build long duration firming generation capacity. In other words, there would be an incentive to keep Huntly Power Station in operation as long as possible and continue to invest in alternatives in the longer term.

As an upper bound, the fee could be set just below the price of demand curtailment, to ensure that it is a last resort before that. This would preserve the current position of contingent storage in this security of supply management approach.

Setting the exact fee would require some advice from the system regulator to operationalise the ideas above. Again, deciding the appropriate place that contingent storage sits between

⁷ A fee has been raised previously in the 2009 report: *Improving Electricity Market Performance Volume Two: Appendices- a preliminary report to the Ministerial Review of Electricity Market Performance by the Electricity Technical Advisory Group and the Ministry of Economic Development.*

these two bounds is really a policy choice on which I can offer no advice. It seems equally inappropriate for this to be decided by a Panel as if it were a local, placed-based issue.

Recommendations

Under the Fast-track Approvals Act you are required to consider the proportionality of benefits and costs of an application. The benefit of Meridian's proposal in terms of short-term affordability – assuming reduced operating costs are passed onto consumers – is clear. Reduced resilience to black swan events is a cost.

As I have noted, it is not appropriate for me to take a position on the trade-off between affordability and resilience. That is a question for the managers and regulators of the electricity market – and perhaps ultimately a political question. My primary concern is to ensure that the Panel is aware of, and considers, the long-term dynamic impacts of unlimited access to contingent storage.

If the Panel favours placing some value on resilience, I recommend replacing the current quantity trigger with a price trigger for access to contingent storage. The advantage of this is that the revenue gathered could be used to offset the negative amenity and environmental impacts of a lower lake level. It could also help guard against potential long-run dynamic impacts.

If the Panel wishes to grant the application as it views the system as under stress in the very short-term, I recommend that, should the application be approved, the consent limits access to contingent storage for a three-year period to avoid setting a precedent. In my view, the costs of this proposal rise if the change creates a long-term precedent, as that would have impacts on New Zealand electricity generators' investment programmes.

In making its decision, I recommend that the Panel consider the views of Transpower and the Electricity Authority as well as engage independent experts with significant electricity market experience.

Yours sincerely



Rt Hon Simon Upton
Parliamentary Commissioner for the Environment
Te Kaitiaki Taiao a Te Whare Pāremata