CLUTHA PUMPED HYDRO CONSORTIUM LIMITED

Onslow – New Zealand's Renewable Electricity Bank

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21 July 2026

Electricity Markets Policy
Building, Resources and Markets
Ministry of Business, Innovation and Employment
By email: electricitymarkets@mbie.govt.nz

Submission on the discussion document "A Proposed Reliability Obligation to Manage Dry-Year Risk"

Submitted by: Dr Keith Turner CNZM, Chair, Clutha Pumped Hydro Consortium Limited

This submission may be published in full. The Consortium has no objection to its release.

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Dr Keith Turner CNZM
Chair, Clutha Pumped Hydro Consortium Limited

Dear Sir or Madam

A Proposed Reliability Obligation to Manage Dry-Year Risk

Clutha Pumped Hydro Consortium Limited welcomes the opportunity to make this submission.

We support the objective of the discussion document: ensuring New Zealand secures dependable, long-duration firm energy sources before dry-year conditions emerge, at an efficient cost to consumers. This is a problem worth solving, and we commend officials for confronting it directly.

I want to record why I and my fellow directors have all worked for free for the last year to advance Onslow:

> *The Clutha Pumped Hydro scheme at Lake Onslow draws water from the Clutha Mata-Au and connects to the national grid.*
>
> *Onslow does the heavy lifting for renewable electricity. Onslow will act as a renewable electricity bank for New Zealand.*
>
> *Onslow is the key to New Zealand's future energy security and lower prices*
>
> *It holds 5,400 GWh of storage – this more than doubles New Zealand's controlled hydro storage!*
>
> *Onslow adds 1000MW of very flexible, quick to start, zero carbon generation capacity.*
>
> *Onslow not only fixes NZs dry year storage, but it also enables new solar and wind generators to produce low-cost electricity, unlocking lower prices for Kiwis.*
>
> *With Onslow, New Zealand can get back to where we used to be – with low prices for consumers and industry booming.*
>
> *The dam and enlarged lake is comparable to the Benmore power project, wisely built by our forebears 60 years ago and still going strong.*
>
> *Onslow will last a hundred years, serving generations of Kiwis through lower power prices.*
>
> *We lift water uphill when renewable electricity is abundant and release it when renewable generation falls short.*

Most of the benefits from Onslow go to consumers and a stronger economy.

The shareholders backing Onslow see themselves as guardians of this crucial project for New Zealand. If government or the electricity sector wants the Onslow project back, we are comfortable with that. If it stays private, we accept regulation of its profits will be in New Zealand's national interest.

The Onslow project has been accepted into the Fast Track approvals process and we thank the government for that. The substantive application for planning approvals is being actively prepared.

Our central request

We are not asking MBIE to choose the Consortium's project, to endorse it, or to design a regime around it. Our request is narrower and, we hope, uncontroversial: any reliability obligation should preserve the ability of large, long-duration, physically backed storage to qualify on its merits, if and only if it can deliver dependable dry-year cover at low cost to consumers.

A least-regrets standard follows from this. No adequate option for managing dry-year risk should be foreclosed by the design of the obligation before the system needs it. That standard costs the Crown nothing and forecloses nothing; it simply keeps the option space open while the market and the consenting process do their work.

In practice, neutrality means:

- qualifying cover should be defined by dependable winter energy, duration, deliverability and enforceability — not by technology type;
- the obligation should allow long contract tenors where long-lived assets need them;
- lot sizes and thresholds should not exclude large, indivisible assets by default, any more than they should exclude small modular ones;
- assessment should recognise both capacity and stored energy;
- the rules should guard against double counting, gaming and non-delivery;
- externalities like carbon emissions should be considered;
- the government on behalf of the people should consider impacts on energy sovereignty; and
- every credible source of cover should be assessed by its benefit to consumers, on transparent and technology-neutral terms.

What we do not seek

The Consortium seeks no protection from competing firming investment: if another party can deliver equivalent dependable cover at lower cost, that party should win. It seeks no exemption from the Electricity Industry Participation Code. It seeks no regulatory handicap on any rival technology. Whether the project succeeds commercially is a matter for its investors, who bear that risk. Given neutral rules, the Government should be indifferent to the project's private fortunes — it need not design rules for the project, and it need not design rules against it.

The problem in context

New Zealand's dry-year problem is, at its core, a lack of dependable stored energy over time and the ability to produce that energy at short notice at approximately 1000MW for up to six months. The hydro system generates around 25 TWh a year. Compared with other hydro-rich electricity systems such as Norway, New Zealand's 4 TWh of controlled storage of hydro water is low: when inflows fail, the country holds just weeks of cover, not seasons.

The insurance that has historically filled that gap is coal and NZ gas at Huntly. Replacing or augmenting that insurance requires investment with long build times and long revenue horizons. Current market arrangements have not produced the long-duration contracting layer needed to finance it at scale. That tenor gap has been documented by MBIE, by Frontier Economics and by the OECD.

This consultation should be read in that longer context. The proposed obligation is the latest in a series of attempts, since the 1992 dry-year shortage, to design institutions that manage dry-year risk well.

The most useful contribution officials can make now is to compare real-world alternatives against each other on their merits — not against idealised versions of themselves, nor against a caricatured status quo. We hold our own submission to the same discipline.

Unintended consequences – apply common sense

MBIE and the Ministry for Regulation both frequently highlight that the risk of unintended outcomes from regulation.

Common sense should also be used to assess outcomes. It is easy to bury oneself in detail and arrive at an unworldly outcome.

Some things are already in plain sight. If a rule would drive a different outcome, it is likely the rule is wrong.

I give 4 practical examples:

1. **The system needs the Huntly Rankine units as part of the answer**. Huntly firming offers have kept the Huntly Rankine units in the market. This has markedly improved security of supply in the short term. When used in dry sequences, Huntly should be seen as an enabler of NZ's renewables rich system.

   The Rankines are said to be nearing end of life about 2035. If that life can be extended at reasonable cost, then the operating cost of its continued operation - including both the cost of carbon emissions and the cost of coal fuel – could be a lower cost option for the medium term.

   Until retired, Huntly Rankine units will play a crucial role. Yes, there is a residual risk, but the steps taken since 2024 – including via HFOs - mean that dry year risk has substantially reduced c.f. 2024. There is no need to make bad short-term decisions.

The market cost of carbon emissions, the emissions reduction imperative, and Huntly's age will and should cause its eventual retirement, but until then it is key and HFOs should be relied upon to maintain it.

NZ should plan around this reality for two main reasons:

Firstly, New Zealand will otherwise unnecessarily complicate analysis with the unworldly suggestion that the Huntly baby should be thrown out with the bath water.

Secondly, whenever the transition away from Huntly on coal finishes, it should be planned well in advance. That should start now. Otherwise in the future the NZ electricity market insecurity risks will again raise prices unnecessarily and pressure the then government to default to poorer, shorter term, less secure and more expensive solutions.

2. **LNG is not the answer**. LNG should not be subsidised, nor its cost be spread and its usage increased by being, in effect, forced upon generators or consumers by new rules.

   I am personally unconvinced about the proposed importation of LNG. That is not the primary argument for today.

   What is even clearer is that if LNG proceeds, it should not migrate from a short-term intervention to a longer-term distortion.

   The new rules should not be used to drive increased use of a volatile priced, geo-politically impacted and expensive imported source of fossil fuel climate emissions. That is wrong for environmental, electricity market and energy sovereignty reasons. If that is the effect of this proposal, it should not proceed.

   I would be surprised if the government ordinarily wanted that outcome, but they are in a bind. It is not the fault of the current Minister of Energy. He is trying through this mechanism to avoid the direct levy to consumers for the proposed LNG facility proposed by his predecessor.

   That levy was positioned by critics as a tax on consumers and then dropped. The timing and wording of the discussion paper make me nervous this is a backdoor way of funding the same thing. Simply by moving from a levy to a charge on generators does not change the fact the LNG facility has to be paid for. The cost to consumers would be in the generators charges to consumers rather than a separate levy.

   The bigger point is that allowing greater use of imported LNG to crowd out the alternative market-based investments in renewable electricity would be a very poor outcome, with long term costs for NZ consumers. That would be a misuse of the rules you are seeking feedback on.

Without an LNG distortion, based on my experience, I have no doubt there are renewable sources that can cost effectively be contracted to firm supply in dry years, as well as support intermittent solar and wind generation, while preserving New Zealands electricity sovereignty and low electricity prices.

Other risks such as the infiltration of international gas prices into the NZ gas and/or electricity markets are real. Regulatory attempts to counter those would be complex. They will not work easily because they run counter to normal economic theory where marginal costs drive prices.

3. **The cost or value of dry year risk is growing.** As the economy becomes more reliant on electricity, and electricity more reliant on intermittent wind and solar, the consequences of **both** the dry year risk and inadequate firming of intermittent renewables grow.

   Logically, if dry year risk remained static, but the value or cost of shortage increases, then dry year cover should be improved. This in effect means that more than Huntly is required over time.

   NZ also has to contend with the risk of major plant failure of the Huntly rankine units. Such units rarely last beyond 50 years and there are few examples of such units still running globally. To have NZ's electricity security dependant on old plant would be considered poor industry practice globally.

4. **Siloed consideration of dry year firming divorced from firming intermittent renewables is unwise.** Siloed consideration of dry year firming, which ignores linkages to firming of intermittent renewables, is likely to narrow choices resulting in more expensive and less secure outcomes for consumers across both types of firming.

The pressing need is renewable build, and renewable storage enables it

On any projection of economic growth, population and electrification, New Zealand's pressing need is more renewable generation and dependable firming to support it. Access to firming is one of the binding constraints on financing the next wave of renewable construction, particularly for independent generators and retailers that cannot rely on a vertically integrated portfolio. Grid connection, transmission, consenting, demand uncertainty, cost of capital and locational price risk also matter.

Storage at scale relaxes the firming constraint. CPHC would also be a large buyer of surplus renewable output, improving the revenue case for marginal wind and solar projects. CPHC does not compete with the renewable build the country needs; properly designed, it enables it.

Look overseas

The challenge of firming renewable electricity is being addressed in many countries. The growing importance of pumped hydro is evident from significant investment in China, Scandinavia, wider Europe, the USA and Australia.

There are lessons to be learned from overseas in how well-designed regulation drives the investments needed. I would refer you in particular to Australian analysis in the attached article by Paul Simshauser and Nicholas Ghodes titled *Incomplete markets, pumped hydro storage and the role of policy in Australia's national electricity market*. *Energy Policy, Volume 294, September 2025. https://doi.org/10.1016/j.enpol.2025.114657*

We would welcome the opportunity to discuss this submission with the Electricity Markets team and with the Electricity Authority, the System Operator and the Commerce Commission as the work develops. We have no objection to this submission being published in full.

Yours sincerely,

Privacy of natural persons

Dr Keith Turner CNZM
Chair, Clutha Pumped Hydro Consortium

Dr Keith Turner CNZM (born 1950) is a New Zealand electrical engineer and business executive, a Distinguished Fellow of Engineering New Zealand, and the recipient of the Sir William Pickering Medal for Engineering Leadership. He holds bachelor's, master's and doctoral degrees in engineering from the University of Canterbury, completing his PhD in 1980, and has worked in the electricity industry since 1969. He spent 4 years as Chief Operating Officer of the Electricity Corporation of New Zealand and, from 1999 to 2008, was Chief Executive of Meridian Energy. His subsequent board roles have included Dep Chair of Auckland International Airport, Director of Spark Infrastructure, Chorus and Trustpower and chair of Fisher & Paykel Appliances for 8 years. He chaired Transpower, the operator of New Zealand's national grid, from 2022 to 2025. He served on the Interim Climate Change Committee in 2018. He has held directorships on 5 Australian large electricity companies, including State level entities identifying market impediments and tendering contracts to improve market outcomes. In the 2025 New Year Honours he was appointed a Companion of the New Zealand Order of Merit for services to the electricity industry.