

4 November 2025

System Operator
By email: system.operator@transpower.co.nz

Security of Supply Forecasting and Information Policy Review

Meridian appreciates the opportunity to provide feedback on the System Operator's consultation paper 'Security of Supply Forecasting and Information Policy (SOSFIP) Review – Draft amendment proposal' (*Consultation Paper*). Meridian's submission is comprised of this letter and an accompanying expert report by Dr Brent Layton, former Chair of the Electricity Authority.

A critical role of the SOSFIP is to set the trigger at which access to contingent storage is enabled. Contingent storage is an important system resource and can contribute to both the security and affordability of New Zealand's electricity system. Meridian's view is that, ultimately, contingent storage should be treated the same as any other resource, with market participants determining its use based on commercial market signals. This would maximise the benefits to consumers. We therefore endorse the suggestion by Dr Layton for the Electricity Authority to undertake a 'first principles' review of contingent storage access conditions with the aim of achieving a 'fuel agnostic' electricity system, as envisioned by the Government Policy Statement on Electricity (GPS).¹

Meridian is also independently pursuing a temporary removal of contingent storage access conditions on Lake Pūkaki via an application through the Fast Track process. This is similarly intended to ensure the country can receive the full benefit of this resource for the next few years until substantial new renewable energy capacity is added to the system.

Until either Meridian's fast track application is approved or a first principles review is completed, however, the SOSFIP will play an important role in ensuring that the current framework facilitates practical access to contingent storage through setting the Contingent Storage Release Boundaries (CSRB). While any constraints on access can only reduce the benefits available to consumers from this resource, the SOSFIP can at least establish settings which make access to contingent storage more feasible and thereby ensure that consumers are able to receive some of this benefit. The System Operator's proposed

¹ Statement of Government Policy to the Electricity Authority under section 17 of the Electricity Industry Act 2010, October 2024, [link](#).

changes to the SOSFIP, while welcome, will not achieve this. Rather, as we set out in our submission, Meridian considers *at a minimum*:

1. The default Alert CSRB buffer should be amended to 373 GWh between April and September and to 153 GWh between October and March (comprising a 103 GWh adjustment for Waiau operating constraints, a seasonal 220 GWh adjustment for the Tekapo shadow constraint, and the 50 GWh base buffer); and
2. The default Emergency CSRB buffer should be amended to 153 GWh (comprising a 103 GWh adjustment for Waiau operating constraints and the 50 GWh base buffer).

In setting these buffers, Meridian's view is that the System Operator should aim to fully address any potential infeasibility rather than rely on ad hoc discretion to enable contingent storage access. However, to that extent that any discretion remains we recommend this is limited to *bringing forward* access to contingent storage. This will provide greater confidence to market participants (leading to consumers seeing greater benefit from this resource) while still ensuring the System Operator can respond to unforeseen circumstances. We set out further details on these matters below.

A fuel agnostic approach to economic dispatch maximises benefits to consumers

Meridian considers that consumers benefit the most when electricity market participants are free to make choices on fuel use in response to commercial market signals. Such a “decentralised approach” was referred to in the GPS as “the best way to deliver the level of reliability that consumers want at the lowest possible cost”.²

Under New Zealand’s electricity market design, cost-reflective market signals are complemented by regulatory incentives to ensure supply security, including provisions for Official Conservation Campaigns (OCC), customer compensation schemes (CCS) and scarcity pricing.³ Together, these create a strong imperative on participants to prudently utilise available energy resources, including hydro storage.

From a market efficiency perspective, requiring that one fuel type be preserved in favour of another can only result in higher costs for consumers. Previous analysis by Meridian found that there is a \$527 million per annum consumer benefit from increasing access to contingent storage versus the current situation of restricted access.⁴ These benefits arise when hydro reservoir operators have confidence they will be able to access contingent storage when it is needed, allowing them to utilise more water during normal market operations, thereby driving down water values, market offers and ultimately consumer prices. In Meridian’s view, a fuel agnostic approach should be a guiding principle in considering any changes to the operation of New Zealand’s power market, including those proposed as part of the current SOSFIP Review.

² Statement of Government Policy to the Electricity Authority under section 17 of the Electricity Industry Act 2010, October 2024, [link](#).

³ Dr Layton discussed these incentives in further detail on page 11 of his report.

⁴ Meridian submission on Security of Supply Forecasting and Information Policy Review: Issues Paper, March 2025, Appendix B, [link](#).

Contingent storage access rules need to be clear, stable, simple and workable

While a fuel agnostic approach should be the goal to maximise consumer benefits, it is currently the case that existing resource consents tie access to water in the lower reaches of Tekapo, Pūkaki and Hāwea to certain security triggers. Given this, the least distortionary way to enable access to these resources is with clear, stable, simple and workable regulatory settings that provide market participants with certainty, allowing them to make trading and investment decisions with confidence.

As we've previously communicated to the SO and others, Meridian's view is that the current SOSFIP does not provide workable access to contingent storage. In particular, the CSRBs are inadequate, relying on the exercise of System Operator discretion to ensure contingent storage can be accessed. As a result, this resource is effectively disregarded by the market and consumers face an additional \$527 million per annum in electricity costs.⁵

The SOSFIP Review provides an opportunity to address this by adopting a new, permanent buffer that ensures practical access to contingent storage and provides clarity and certainty to market participants.

The System Operator's proposal will not provide sufficient certainty to enable a change in market behaviour

We welcome the System Operator's recognition of the need to make a permanent change to the Alert CSRB buffer. We agree it is necessary to increase the buffer from its current level. However, the change to the buffer, as proposed, will not provide Meridian and others with sufficient certainty that access to contingent storage will be feasible and can be relied upon.

Absent being able to rely on access to contingent storage, market participants such as Meridian are forced to take an unduly conservative approach to offering hydro generation in normal market operations as the consequences of ending up needing access to contingent storage but not having it would be financially dire. This comes at a \$527 million per annum cost without any appreciable benefit in terms of security of supply.

We comment on each of the System Operator's proposed adjustments and our alternative recommendations in turn below.

Waiau adjustment

The System Operator has proposed to increase the default Alert CSRB buffer by 90 GWh to account for operating constraints in Lakes Te Anau and Manapouri. This is less than the 150 GWh adjustment adopted in Winter 2024, which the System Operator has explained is due to the additional operating flexibility arising from changes to the Operating Guidelines for Levels of Lakes Manapouri and Te Anau which were Gazetted in May 2025. As we understand it, the System Operator has determined an adjustment of 90 GWh as this is roughly the median level that the Waiau lakes have operated at when below 103 GWh between 1980 and today.⁶

⁵ The view that contingent storage is inaccessible is reinforced by the fact that it has never been used since local rule changes first enabled access.

⁶ 103 GWh being the lower boundary of the top band of the low range, aggregated across both lakes.

We acknowledge the changes to the Operating Guidelines have afforded some increase in operational flexibility in the Waiau. However, it is not clear on what basis the System Operator has determined that a 90 GWh adjustment is now appropriate. This decision appears largely arbitrary.

Meridian's view is a more durable approach would be to adjust the buffer by 103 GWh, being the storage available at the lower boundary of the top band of the low range. In fact, this should be considered a conservative adjustment as:

- While this would reflect that volume of storage in the Waiau that is *largely* unconstrained by the Operating Guidelines, storage in the top band of the low range is still subject to drawdown limits;
- A total Waiau storage volume of 103 GWh is based on both Lakes Manapouri and Te Anau being at the lower threshold of the upper band of their low ranges simultaneously. In practice, it is inevitable that one lake will be higher than the other. This means that even at 103 GWh, one lake will be operating in the lower bands of the low range and subject to additional associated operating constraints; and
- The Waiau catchment experiences highly volatile inflows, with the lakes able to go from empty to full within a matter of days following extreme events. As a result, managing Manapouri and Te Anau lake levels can be very challenging, making it difficult – and in some cases impossible – to coordinate lake drawdown to meet any contingent storage trigger.

For these reasons, 103 GWh should be considered at the lower end of an appropriate buffer adjustment which is intended to account for Waiau operating constraints.

If historical operating levels are to be used as a reference point for setting the buffer, it is important to recognise that operation of these lakes has changed over the last 45 years. To illustrate this, Meridian has analysed the time spent at various storage levels in Lakes Manapouri and Te Anau by decade. The results of this analysis are shown in Figure 1 below.

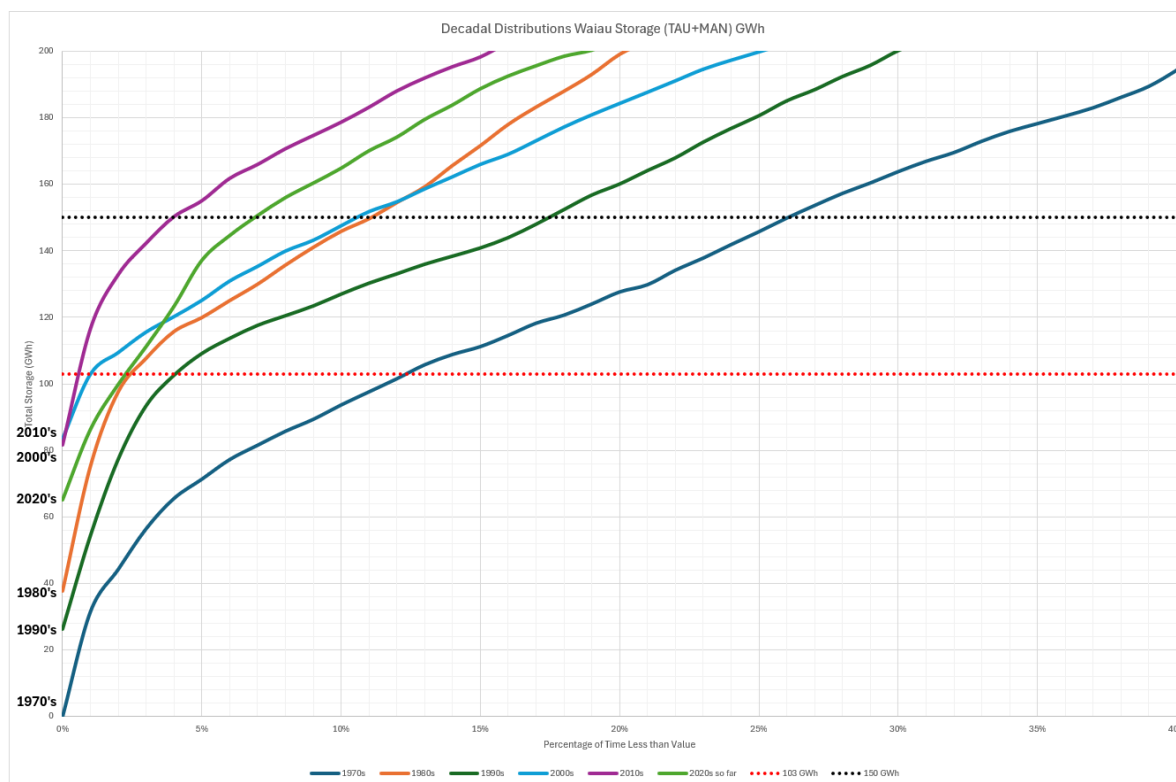


Figure 1: Decadal distributions of Waiau storage

This analysis makes clear that operation of Lakes Manapouri and Te Anau was quite different between the 1970s and 1990s than between the 2000s and 2020s, with the latter period seeing a much more conservative use of low range storage. This is likely driven by a combination of factors including changes in transmission, load, ownership and portfolios, as well as the creation of the electricity market itself.

If the System Operator chooses to use historical operating levels as a basis for determining an adjustment to the Alert CSRB buffer, it should do so on a forward-looking basis, which would mean only drawing on more recent historical usage patterns which are likely to be more reflective of current and future behaviours. Our view is a buffer adjustment of at least 103 GWh would be more reflective of the recent management of the Waiau lakes and ongoing constraints on operations.

Tekapo adjustment

The System Operator has proposed to introduce an adjustment to the Alert CSRB buffer that varies by month to account for the Tekapo shadow constraint. The specific adjustments have been determined by calculating the storage levels that Genesis could draw Lake Tekapo down to in the period from April to September while, in theory, still having reasonable confidence that it will be able to return storage to 220 GWh by 1 October.

However, as illustrated in Figure 22 in the consultation paper (copied below as Figure 2), Genesis has never operated Lake Tekapo at below 220 GWh. This is despite dry years in 2012, 2021 and 2024.



Figure 2: Lake levels at Tekapo since 1992

Genesis’s conservative operation of Lake Tekapo may be partly explained by a general risk aversion aimed at ensuring compliance with its resource consents. However, it is also the case that Genesis, as the owner and operator of the Huntly power station, has commercial incentives to maintain Tekapo lake levels in order to defer wider access to contingent storage and maximise use of its thermal plant as national storage starts to decline. That is, Genesis makes more money during a shortage situation when contingent storage is unavailable as this creates a greater need for generation from Huntly.

Dr Layton similarly identified that the incentives on both Genesis and Contact to access contingent storage could be influenced by their ownership of thermal plants, noting:

“Even if there were no evidence this has happened, a prudent regulator should consider with a critical eye the potential incentives on all parties that may impact its proposals.”⁷

Genesis’s ownership of both the Huntly thermal power plant and its position as operator of Lake Tekapo means in certain situations it will have both the ability and the incentive to operate in such a way that contingent storage remains inaccessible to the wider market. Previous public statements from Genesis suggest they are making a conscious trade-off between the availability of contingent storage and their willingness to maintain fuel stockpiles at Huntly.⁸ These commercial incentives mean the System Operator’s proposed buffer adjustments are likely to be inadequate in accounting for real world behaviour.⁹

The System Operator’s proposal to vary the buffer adjustment by month also adds additional complexity to an already complex framework, making it more difficult for market participants to assess when a contingent storage access boundary might be crossed. This is contrary to the principle that contingent storage access rules should be kept simple.

Based on Genesis’ real-world behaviour and their commercial incentives to hold back access to contingent storage, we consider a fixed 220 GWh adjustment to the Alert CSRB buffer between April and September (as was adopted by the System Operator for Winter

⁷ Review of the Contingent Storage Release Boundaries, Dr Brent Layton, 27 October 2025, p.8

⁸ <https://www.energynews.co.nz/news/electricity/816685/meridian-seeks-unfettered-lake-access-genesis-would-reduce-coal>

⁹ We note that while the trading conduct standard in Part 13.5A of the Electricity Industry Participation Code should in theory discipline such strategic behaviour, in practice it is likely to be very difficult for a regulator, in these circumstances, to confidently assert that this standard has been breached.

2024) is required to account for the Tekapo shadow constraint. Using a fixed buffer adjustment also has the benefit of delivering a simpler contingent storage access regime.

Responding to future consent changes

As noted in the Consultation Paper, there are a number of resource consent processes proposed or underway which might impact on the ability of hydro operators to access contingent storage. The System Operator goes on to suggest that it may be necessary to update the buffer in the future to account for any changes to resource consent conditions or operating limits.

However, Meridian considers that any change to Genesis' resource consent conditions for use of water in Lake Tekapo may not materially alter how they operate that reservoir. This is because their commercial incentives to maximise use of Huntly by deferring access to contingent storage will remain. In addition, the currently proposed amendments to Genesis' consent conditions would still leave them with significant constraints when operating below 220 GWh after 1 October as they would still be required to ensure that the 24-hour rolling lake level does not descend further.¹⁰ This would constrain Genesis to generating to inflows, significantly limiting their flexibility in operating the Tekapo stations. As such, Genesis will continue to be disincentivized to operate below 220 GWh in Lake Tekapo at all times of year, even if their resource consent conditions change as proposed.

Further, Genesis has recently written to Meridian raising a concern that operation of Lake Pūkaki below 518m above mean sea level (amsl) may damage a weir structure below Tekapo B power station. Meridian has commissioned an independent engineering assessment which suggests that, on the contrary, Lake Pūkaki can safely be operated below 518m amsl and that any concerns that Genesis has can be addressed. This evidence has been shared with Genesis but we understand they are not yet convinced. Obviously, to the extent that Genesis remains concerned that operation of Lake Pūkaki below 518m amsl will damage their assets they are likely to take steps to ensure that such operation cannot happen. Given all of the above, Meridian's view is that the System Operator should not assume that changes to Genesis' resource consent conditions at Tekapo will necessarily result in a change to how they operate that lake.

Our overall position on the System Operator's proposed buffer changes

The System Operator has attempted to undertake detailed assessments of the operating constraints in Lake Tekapo and the Waiau and to reflect this in the contingent storage access triggers. The result is relatively small and variable upward adjustments to the Alert CSRB buffer. While Meridian welcomes recognition of the need to increase the buffer, we do not consider these changes will provide the market with sufficient certainty that contingent storage can be accessed when needed.

Contingent storage operators face significant financial consequences if they were to assume that contingent storage will be available and then find out that it is not. As a result, market participants like Meridian require a high degree of confidence that contingent storage will be available before reflecting this in their wholesale market offers. The changes currently proposed by the System Operator do not provide this confidence.

¹⁰ Substantive Fast Track application for replacement resource consents for the Tekapo Power Scheme, Genesis Energy, 25 July 2025, [link](#)

As detailed in our submission on the System Operator's March 2025 Issues Paper, Meridian estimates that the cost to consumers of keeping contingent storage permanently in reserve is \$527 million per annum.¹¹ In addition, there are significant adverse impacts on emissions and hydro spill. In these circumstances, contingent storage effectively becomes an insurance product with a \$500 million per annum premium that will never be called on.

Dr Layton notes in his report the potential impact that better access to contingent storage might have had on events during Winter 2024:

*"Confidence amongst market participants that it was practicable to access contingent hydro storage...would have gone a very long way to alleviating the issues created by the dry year winter in 2024."*¹²

Dr Layton also draws attention to recent analysis by industry experts Energy Link which, like Meridian's analysis, identifies a range of potential benefits from enabling better access to contingent storage, including less hydro spill, lower emissions, and reduced peak prices in winter.¹³ Under the System Operator's current proposals, these benefits will be left on the table. To avoid this, we recommend the additional adjustments set out above are adopted by the System Operator.

Reliance on ad hoc discretion should be minimised

The current SOSFIP sets a default buffer of 50 GWh and includes a simple provision allowing the System Operator to determine a different buffer and make it publicly available. Following the first use of this discretion in Winter 2024, the System Operator developed and published a 'CSRB buffer discretion process' which sets out the timeframes and criteria it will use to determine whether any future change in the buffer is needed.

Such a process seems to establish the System Operator's ability to change the buffer as an operational 'lever' that can be exercised to actively manage access to an important system resource. This approach creates significant uncertainty and, in Meridian's view, is inconsistent with the original intent of this aspect of the security of supply framework.

The buffer was introduced via an Electricity Authority decision in June 2019 which enacted an update to the SOSFIP. As referenced by Dr Layton who was chair of the Authority at that time,¹⁴ the Authority's decision paper noted that "*non-discretionary arrangements* should be in place to enable the access to contingent storage and the starting of an OCC" [emphasis added].¹⁵

Dr Layton also references a joint presentation by the Authority and Transpower announcing the SOSFIP update which notes that "floors and buffers will be transparently documented and *not* subject to regular change" [emphasis in original].¹⁶ Dr Layton goes on to conclude:

¹¹ Meridian submission on Security of Supply Forecasting and Information Policy Review: Issues Paper, March 2025, Appendix B, [link](#).

¹² Review of the Contingent Storage Release Boundaries, Dr Brent Layton, 27 October 2025

¹³ <https://energylink.co.nz/resources/blogs/allowing-hydro-lakes-to-be-lowered-during-dry-spells-does-the-idea-hold-water>

¹⁴ Review of the Contingent Storage Release Boundaries, Dr Brent Layton, 27 October 2025, p.9

¹⁵ Reviews of regulatory settings for official conservation campaigns (OCCs) and the security of supply forecasting and information policy (SOSFIP) - Decision, Electricity Authority, 18 June 2019, [link](#).

¹⁶ Join industry briefing on decisions, Transpower and the Electricity Authority, 4 July 2019, [link](#)

“The Authority, on the face of this evidence, did not contemplate or think that in 2019 it was authorising the System Operator to change buffers at its discretion with or without consultation.”¹⁷

Meridian agrees with Dr Layton that the buffer was not intended to be used as an operational lever. Rather, it was intended to fix an underlying infeasibility arising from the incorporation of contingent storage into the System Operator’s risk modelling. In this sense, the buffer should be viewed more as a “set and forget” value subject to occasional update rather than a means for the System Operator to actively switch on or switch off access to contingent storage whenever it deems it necessary.

In determining a revised buffer, our view is the System Operator’s objective should be to **fully address** any potential infeasibility in the risk management framework in a way that means any need for System Operator discretion is minimised. This would ensure that regulatory settings are workable while simultaneously providing certainty to participants, allowing them to trade with confidence. In order to do so, the buffer should account for all reasons why water may not be used including physical reasons, consenting constraints and commercial incentives.

Dr Layton raised specific concerns that retaining System Operator discretion to amend the buffers is likely inconsistent with wider regulatory and policy objectives:

“The System Operator being able to alter access to contingent hydro storage at its discretion has potentially serious adverse consequences. It is also likely to be inconsistent with the Authority’s statutory objective and produce results contrary to the Government Policy Statement’s expectation that the market should be agnostic in terms of fuel used to generate electricity.”¹⁸

We note that the Electricity Authority, in making a final decision to adopt the SOSFIP as part of the Code, must act in accordance with its objectives under Section 15 of the Electricity Industry Act. It must also, under Section 17 of the same Act, have regard to any Government Policy Statement.

Dr Layton goes on to point out that System Operator discretion can impact not just trading on the wholesale spot market but also, significantly, price discovery and liquidity of hedge markets:

“If prices can be unilaterally changed by the System Operator this creates risks to those trading the market for purposes other than hedging or mandated market making. There is very likely to be a chilling effect on trading in the market by outside parties from Transpower claiming wide discretionary power to alter buffer values. This will be a detriment in efficiency of price discovery and liquidity.”¹⁹

Nevertheless, if the System Operator (and ultimately the Authority) continues to allow for discretion to change the buffers, Meridian’s view is that residual uncertainty would be minimised by specifying explicitly in the SOSFIP that such discretion can only be used to *increase* the buffer.

¹⁷ Review of the Contingent Storage Release Boundaries, Dr Brent Layton, 27 October 2025, p.9

¹⁸ Review of the Contingent Storage Release Boundaries, Dr Brent Layton, 27 October 2025, p.3

¹⁹ Review of the Contingent Storage Release Boundaries, Dr Brent Layton, 27 October 2025, p.10

The CSRB buffer discretion process published by the System Operator makes clear that it currently only intends to use its ability to change the buffer to bring forward access to contingent storage to manage an emerging system risk.²⁰ However, the CSRB buffer discretion process is not a codified part of the risk management framework and can be unilaterally amended by the System Operator at any time.

In contrast, limiting the System Operator through the SOSFIP to only being able to *increase* the buffer would at least provide some assurance that access to contingent storage can only be brought forward and not delayed or revoked, while still allowing the System Operator to respond to any unforeseen security of supply risks that emerge. This would improve certainty for market participants. Meridian considers this could be achieved through a simple change to clause 6.1A(c) of the proposed SOSFIP drafting, as indicated in blue text below:

- (c) the relevant buffer in the following table of 50 GWh unless the **system operator** determines one or more increased ~~different~~ buffers and publishes them ~~it~~: publicly available.

Emergency CSRB buffer

The System Operator is proposing not to make any change to the Emergency CSRB buffer and suggests that consideration of any such change should be undertaken as part of a wider review of the CCS. We disagree. Firstly, we consider that there should be consistency between any change to the Alert CSRB buffer and the Emergency CSRB buffer. This does not necessarily require that identical adjustments be made to both buffers but rather that any operating constraints be treated in a consistent manner when considering what might impact access to the different types of contingent storage.

On this basis, we consider an identical uplift should be made to the Emergency CSRB buffer as to the Alert CSRB buffer with respect to the adjustment to account for Waiau operating constraints. The basis of this adjustment for the Alert CSRB buffer is that the constraints on low range operations in the Waiau are such that it is not possible to drive Lakes Manapouri and Te Anau down towards the bottom of their operating ranges and hold them there in order to allow for the trigger for accessing contingent storage to be met. These constraints exist whether or not access to the first tranche of contingent storage has been triggered. As such there should be consistent treatment of these constraints in any adjustment to the Alert and Emergency CSRB buffers.

The System Operator notes in its consultation paper that it considers Waiau low range storage should be used before the public is requested to voluntarily manage load through an OCC. This is an artificially constructed hierarchy which would treat certain hydro resources differently without any basis in the Code or in resource consents. Such an approach is directly contrary to the GPS' objective of a fuel agnostic sector.

On the Tekapo adjustment, we agree with the System Operator's argument that the Tekapo shadow constraint will likely have been resolved by the time national storage approaches the Emergency CSRB. This is because access to Alert contingent storage will already have been triggered, allowing Genesis to utilise the full range of Lake Tekapo regardless of the time of year. We therefore agree that an adjustment to the Emergency CSRB buffer is not

²⁰ For example, one of the criteria the System Operator uses to make a decision to amend the buffer is that "bringing forward access to contingent storage" can mitigate the identified risk.

required for this reason. However, as we discuss above, Genesis' commercial incentives may also impact the extent to which they are prepared to draw Lake Tekapo down in these circumstances. This remains a matter for the System Operator and the Electricity Authority to consider in making a final decision on adjusting the Emergency CSRB buffer.

Lastly, the System Operator notes in the Consultation Paper that permanent changes that increase the likelihood of an OCC should be considered in conjunction with a review of the CCS to make sure these are providing sufficient incentives to prudently manage hydro storage. Meridian disagrees that these things need to be considered simultaneously. Amending both the Alert and Emergency CSRB buffers is a matter rightfully considered under the SOSFIP Review. Meridian's November 2024 letter to the System Operator included a request to consider changes to both buffers and the System Operator's March 2025 Issues Paper and its subsequent April 2025 Decision Paper both appeared to confirm that a change to the Emergency CSRB buffer was within scope.

As with the Alert CSRB, the SOSFIP should set an Emergency CSRB which provides for a workable and durable regime for contingent storage access. Any implications arising for the appropriateness of current CCS settings can then be considered by the Electricity Authority in light of the changes made.

Meridian's recommended changes to the CSRB buffers

To summarise our recommendations, Meridian considers that *at a minimum*:

1. The default Alert Contingent Storage Release Boundary (CSRB) buffer should be amended to 373 GWh between April and September and to 153 GWh between October and March (comprising a 103 GWh adjustment for Waiau operating constraints, a seasonal 220 GWh adjustment for the Tekapo shadow constraint and the 50 GWh base buffer); and
2. The default Emergency CSRB buffer should be amended to 153 GWh (comprising a 103 GWh adjustment for Waiau operating constraints and the 50 GWh base buffer).

While these changes would give Meridian greater confidence that contingent storage *could* be accessed, this does not mean that contingent storage would be used frequently. As mentioned above, hydro operators would still have strong incentives to prudently manage storage.²¹ Drawing on contingent storage would only occur in situations of persistently low inflows and when the country genuinely requires it.

Previous Meridian modelling demonstrated that, under a scenario of 'eased access' to contingent storage, Lake Pūkaki was only expected to fall below the current controlled storage minimum around 3% of the time.²² This would be entirely consistent with the expected usage of a resource termed 'contingent storage'. It would also ensure that the country is able to benefit from a significant renewable resource which, to date, has never been used and, under current settings, is effectively blocked from supporting New Zealand's efforts to achieve a secure and affordable electricity system.

²¹ These incentives are discussed in further detail by Dr Layton on page 11 of his report.

²² Meridian submission on Security of Supply Forecasting and Information Policy Review: Issues Paper, March 2025, Appendix B, [link](#).

More fundamental changes would deliver greater certainty and additional market benefits

We consider that the adjustments outlined above – to be implemented via the SOSFIP Review – are the minimum changes required to improve certainty for market participants. However, more fundamental changes to the framework for enabling contingent storage access would support greater certainty and consequently realise further consumer benefits in the long term.

Dr Layton drew attention to a number of such options, including:²³

- Access to contingent storage could be at the discretion of the catchment operator;
- Access to contingent storage could be based on a price trigger, such as one tied to the LRMC of a notional gas peaker plant;
- Access to contingent storage could be set at a relatively high level of national hydro storage, such as 1,700 GWh.

Dr Layton suggested, given the importance of this issue to the New Zealand electricity system, that the Electricity Authority should urgently undertake a first principles review of contingent storage access conditions. Meridian agrees with this suggestion.

A first principles review should not assume that contingent storage was a “last resort” but rather test whether a fuel agnostic approach would reduce wholesale prices without any appreciable impact on security of supply. Such a review could indeed be undertaken by the Electricity Authority, as suggested by Dr Layton, or by the Government. Both options would ensure that a broader consumer benefit perspective is adopted.

Relevant to any such review is the fact that Genesis, Mercury, Contact and Meridian have recently entered into contractual arrangements to support the maintenance, operation and fuelling of a Huntly Rankine unit for a 10-year period, including the build-up of physical coal stockpiles. Such market-led arrangements are ultimately most likely to deliver reliability and security at least cost. They also suggest that any remaining restrictions on accessing hydro storage are likely unnecessary and, in fact, costly for consumers. This could also be a matter for a first principles review to consider.

Our responses to the System Operator’s specific consultation questions are attached as Appendix A, including our comments on other proposed changes in the SOSFIP Review.

Dr Layton’s report is attached as Appendix B.

Please contact me if you have any queries regarding this submission. This submission can be published in full.

Nāku noa, nā

Matt Hall

Principal Advisor – Regulatory Affairs and Government Relations

²³ Review of the Contingent Storage Release Boundaries, Dr Brent Layton, 27 October 2025, pp.11-13

Appendix A: Responses to consultation questions

Question 1: Do you support our proposal to amend the SOSFIP?
We support the System Operator undertaking a review of the SOSFIP at this time. Our comments on the System Operator's specific proposals are included in our cover letter and in our responses to the questions below.
Question 2: Are there any other SOSFIP amendment options we should consider? Please explain your preferred option in terms consistent with the Authority's statutory objective in the Electricity Industry Act 2010 and consideration of practicality of the solution to implement it.
Meridian has recently raised with the System Operator that the current approach to deriving the ERCs may underestimate the risk of non-supply. ²⁴ Specifically, in determining when a particular inflow sequence will result in shortage, the System Operator uses the difference between starting storage and minimum storage for that sequence without simulating power system operation at very low lake levels. This approach implicitly assumes all controlled storage (including contingent storage) is equally accessible at all lake levels. However, this is not the case for Lakes Manapouri and Te Anau (which are subject to constraints under the Operating Guidelines) or Lake Pūkaki (which begins to encounter hydraulic constraints at low lake levels). As such, the ERCs likely understate the actual level of risk. While such assumptions may sit outside the SOSFIP itself, this may be an opportune time to consider such additional improvements to the System Operator's risk modelling.
Question 3: Do you have any feedback on our Energy Security Outlook and/or Quarterly Security of Supply Outlook communications? This may include suggestions about how we could make them more useful and accessible in future.
No.
Question 4: Do you agree that introducing an additional ERC and SST scenario using contracted fuel information to our Energy Security Outlooks would better support understanding about forward energy risks, and mitigating actions by participants? This scenario would be in addition to continuing to provide the current physical capability scenario. Please provide your reasons.
There is currently limited visibility of contracted thermal fuel information to the market. Winter 2024 demonstrated the significant market stress that can arise from unsignalled thermal fuel disruptions. Meridian therefore supports the System Operator publishing a contracted thermal fuel scenario as part of its Energy Security Outlook. Such a scenario can provide useful information to the market about the current horizon and quantity of thermal fuel contracts. We note that MBIE is currently consulting on a set of proposals for improving gas market disclosures and the transparency of information. Meridian is supportive of these changes. We think that there are good policy reasons for more information to be made public (such as contracted vs uncontracted volumes, especially those relating to electricity generators who use gas). As MBIE will likely soon hold this information, it is

²⁴ As described in section 2.1.3 of [Electricity Risk Curves 101](#).

important that it is incorporated into scenarios used by the System Operator so that maximum benefits from the information collection are realised.

Question 5: How far into the future do you think any contracted fuel information scenario should be modelled? This could be any duration up to the full length of the physical capability scenario, which is up to 24 months. Please explain your rationale.

In Meridian's view, it makes sense to align the timeframes of these scenarios, while acknowledging that there may be limited fuel contracting over a more distant time horizons.

Question 6: Do you agree with our proposal to replace the current worst-case SST with a time-to SST that is progressively less pessimistic into the future? Note the time-to SST will be used to determine the estimated time-to for Alert, OCC and as part of our CSRB buffer discretion process? Please provide reasons for your answer.

In general, we support the proposed adjustments to the worst-case SST which are likely to result in a more realistic (but still conservative) timeframe for reaching Alert or Emergency levels.

In deriving the SSTs, Meridian notes the System Operator should adjust its historical data set for the impacts of climate change, if it has not done this already.

Question 7: Do you agree with the proposal to update the definition of the Watch curve to ensure Watch is always above the Alert curve, and our preference for Option 1? If not, please provide reasons for your answers.

We agree it makes sense to update the calculation of the Watch curve to ensure it is crossed ahead of the Alert curve. We do not have a preference between Option 1 and Option 2.

Question 8: Do you agree with the proposal to have a minimum time under Alert of 4 weeks to reduce the uncertainty? If not, please provide reasons for your answers.

Yes. As the System Operator has described, this will create greater certainty and avoid flip-flopping between Watch and Alert statuses (with flow on impacts to contingent storage access).

Question 9: Do you agree with the proposal to change our ERCs and SSTs tools and analysis to a 3-hour model (rather than the current day-night model)? If not, please provide reasons for your answers.

Yes. While the difference is marginal, this should provide a better assessment of risk overall.

Question 10: Do you agree with the proposal to enhance our NZGB and Energy Security Outlook reporting for greater alignment by extending the NZGB time horizon, adding additional capacity scenarios to NZGB and including capacity risk assessment (using NZGB) to Energy Security Outlooks? If not, please provide reasons for your answers.

Yes. In particular, providing additional NZGB scenarios to reflect capacity constraints on hydro schemes as they approach their lower operating ranges is likely to provide additional insights on the risks of blocking access to contingent storage. We encourage Transpower to undertake this analysis well ahead of a dry year and to make its analysis and results available to stakeholders.
Question 11: Do you agree with the proposal to expand the systems risks for consideration as part of the quarterly scenario assessments? If not, please provide reasons for your answers.
We agree, although the System Operator should make clear in communicating such scenarios that they represent low-likelihood risks.
Question 12: Do you agree with the proposal to update the Alert CSRB buffer for the access to contingent hydro storage? If not, please provide reasons for your answers.
Meridian welcomes the System Operator's proposal to increase the Alert CSRB buffer but does not consider the changes proposed will be sufficient to give the market certainty that contingent storage will be accessible. Further details, including our recommended changes to the buffers, are included in our cover letter.
Question 13: Do you agree with the proposal for the System Operator to retain the CSRB buffer discretion process? If not, please provide reasons for your answers.
No. Meridian considers that in setting the buffers the System Operator should aim to fully address any potential infeasibility, avoiding the need for ad hoc System Operator discretion to enable access to contingent storage. To extent any ability to use discretion remains, it should be limited to bringing forward access to contingent storage. Further details are included in our cover letter.
Question 14: Do you agree with the objectives of the proposed SOSFIP amendment?
Yes, but to be clear we do not consider the System Operator's proposals relating to the CSRB buffers will meet these objectives. To assess the effectiveness of the proposed adjustments to the CSRB buffers, the System Operator could model whether these settings would have enabled use of contingent storage in any of the recent dry sequences.
Question 15: Do you agree it is appropriate to rely on qualitative evaluation of the costs and benefits of the proposed SOSFIP amendment? If not, what information, evidence etc can you provide and/or what methods would you recommend to quantify the costs and benefits?
Meridian considers that the System Operator should seek to quantify the cost and benefits of amending the SOSFIP. The Code requires that the System Operator undertake a quantitative assessment of costs and benefits "if reasonably possible". Meridian's view is that such an assessment is certainly possible in this case. The SOSFIP is an important part of New Zealand's security framework and decisions on the SOSFIP can have wide-ranging impacts. This is most clearly the case for establishing the triggers which enable access to contingent storage. Meridian has previously provided modelling to the System Operator which demonstrates that the consumer benefit of providing better access to contingent storage is in the realm of \$527 million per annum.²⁵ This reflects the order of magnitude of benefits available. We do not

²⁵ Meridian submission to the SOSFIP Review: Issues Paper, 24 March 2025, [link](#)

consider that these benefits will be realised under the System Operator's current proposal. If the System Operator considers a portion of these benefits will be achieved by its proposal, it should seek to quantify this.

Question 16: Do you agree the benefits of the proposed amendment to the SOSFIP can reasonably be expected to outweigh its costs.

It is not possible to say with any confidence that the benefits of the proposal are likely to outweigh the costs as the System Operator has not attempted to quantify these. We consider that the System Operator's proposal is likely to leave substantial benefits unrealised.

Question 17: Do you agree that the proposed amendment complies with section 32(1) of the Act?

No. In particular, we draw attention to Dr Brent Layton's concerns that retaining System Operator discretion to unilaterally change the CSRB buffers is not consistent with promoting the efficient operation of the futures and forward markets and, as a consequence, the electricity industry. This is contrary to Section 32(1)(c) of the Act which requires that the Code (including matters incorporated by reference in the Code) promote the efficient operation of the electricity industry. Further discussion on this is included in our cover letter and in Dr Layton's accompanying report.

Any other comments:

No.

Appendix B: Expert report from Dr Brent Layton

**Report prepared for
Meridian Energy Limited**

Review of the Contingent Storage Release Boundaries

Dr Brent Layton

27 October 2025

Qualifications and experience of author

I have been involved in the design and regulation of the electricity market since 1994.

I was the chair of the Rules Committee that designed the original market, director of the company that initially ran the market as a multi-lateral contract, chair of the advisory group for the Ministerial Review of the market that produced the Brownlee Reforms in 2010, and chair of the Electricity Authority for 10 years until October 2020.

I have been a director of Transpower and provided economic advice on consenting 17 different generation projects.

Purpose of this report

Meridian has asked me to review the operation of the Contingent Storage Release Boundaries and the current proposals by the System Operator to change how these operate. The report will inform Meridian Energy's submissions on the proposed changes.

Background¹

When "available" hydro storage, including contingent storage, measured in terms of the GWh's of electricity that can be generated from it, falls below a Contingent Storage Release Boundary (CSRB) this triggers the release for use in generation additional or contingent storage in Lakes Hāwea, Pūkaki and Tekapo.

There are two boundaries – an Alert Release Boundary and an Emergency Release Boundary. The Alert Boundary corresponds to the higher of the 4% Electricity Risk Curve (ERC) and a floor value. The Emergency Boundary corresponds to the higher of the 10% ERC and a floor value. If, for example, actual hydro storage reaches the 4% ERC there is an estimated 4% risk of available hydro storage dropping to zero within the next twelve months.²

The floor value is the sum of the amount of contingent storage in the three lakes plus a buffer. The contingent storage that is released by crossing the Alert curve is 618 GWh during summer (between 1 October and 31 March) and 398 GWh during the rest of the year. The extra 220 GWh of contingent storage available in summer, if the Alert Release criteria has been triggered, is available the rest of the year irrespective of the status of hydro storage in the country. This additional contingent storage is in Tekapo.

The additional contingent storage that becomes available once hydro storage drops below the Emergency Release Boundary is 214 GWh. It is all in Lake Pūkaki.

The floor is the sum of the contingent storage and the buffer, which is currently set at a constant 50 GWh. The System Operator believes it has discretion to change the buffer either after consultation or without it.³

Summary

¹ For a fuller description of how access to contingent hydro storage currently operates see Transpower, *Security of Supply 101*, Version 2.0, May 2025, pp. 11-18.

² This description of the meaning of a 4% ERC is taken from Transpower, *Security of Supply 101*, Version 2.0, May 2025, p.13.

³ *Ibid.* pp. 15-18.

The dry winter of 2024 had very large and persistent adverse effects on the economy, and on public and political confidence in the electricity system. Despite this, the current rules for accessing even the first tranche of contingent hydro storage did not come close to being satisfied. The current arrangements are not fit for purpose, which is to provide access to additional hydro storage when the market is materially impacted by dry year stress to alleviate the impact on the economy and consumers.

The System Operator's proposed changes to the Alert level buffer are very unlikely to fully or effectively address the issues with the current regime. The proposed buffers are very unlikely to be fit for purpose, should a moderately serious dry year event occur in the next few years while the industry is adjusting generation capacity and mix and contractual arrangements to the sudden decline in the availability of gas.

The System Operator claims that it has discretion to alter buffers as it sees fit, with or without prior notice and consultation. It proposes to retain in the Security of Supply Forecasting and Information Policy (SOSFIP) this discretionary power but add a requirement that it use its published CSRB buffer discretion process when deciding whether to determine a different buffer.

The System Operator being able to alter access to contingent hydro storage at its discretion has potentially serious adverse consequences. It is also likely to be inconsistent with the Authority's statutory objective and produce results contrary to the Government Policy Statement's expectation that the market should be agnostic in terms of fuel used to generate electricity.

The Authority should urgently undertake a first principles review of access to contingent hydro storage. It should seek to identify the best approach to managing access in terms of providing long-term benefits to consumers by promoting competition in, reliable supply by, and the efficient operation of the electricity industry.

One of the approaches this review should investigate is Contact Energy's (Contact) proposal that access to contingent storage should be "at the discretion of the catchment operator."⁴

As Contact identifies,⁵ there are several and powerful regulatory and market constraints incentivising generators to use contingent water prudently. Allowing catchment operators to manage access to contingent water would likely involve some adjustment to current consents but that is not a reason to discount this option.

Another approach this review should consider is whether the triggers for access should be specified relative to some price metric. Using price, rather than water levels, would tie access to what really matters economically and politically and so is likely to result in more efficient and durable outcomes, and promote competition in providing dry year risk cover.

Conducting a first principles review will take time and dry-year risk remains significant, especially in the near term as the market adapts to the faster than anticipated decline in gas availability. In the interim, the Authority could request the SOSFIP picks up Contact's

⁴ Contact Energy, *Submission on the SOSFIP Review Issues Paper*, March 2025, p.2.

⁵ *Ibid.* pp.4-5.

suggestion that the Alert level trigger should be hydro storage falling below some relatively high level. Contact suggests 1,700 GWh.⁶

Dry winter 2024

The New Zealand electricity system has for a very long time been vulnerable to running short of water to provide the “fuel” for hydro-power stations over winter when demand is at a peak to meet higher household and commercial heating needs.

In the past, increasing generation using fossil-fuels filled the gap between demand and supply when hydro storage fell short of requirements in winter. Since the 1990s the principal fossil-fuel used for this has been natural gas. The cost of this generation was generally higher and spot wholesale prices tended to be elevated in dry year winters, but not exceptionally so, as gas was readily available and using coal at Huntly could supplement gas, if required.

In the 2024 dry year, however, spot wholesale prices were much higher in the July to mid-August period than was usual in winter. From 2018 to 2023 average winter prices were around \$180 per MWh but in early August 2024 the average was around \$800 per MWh.

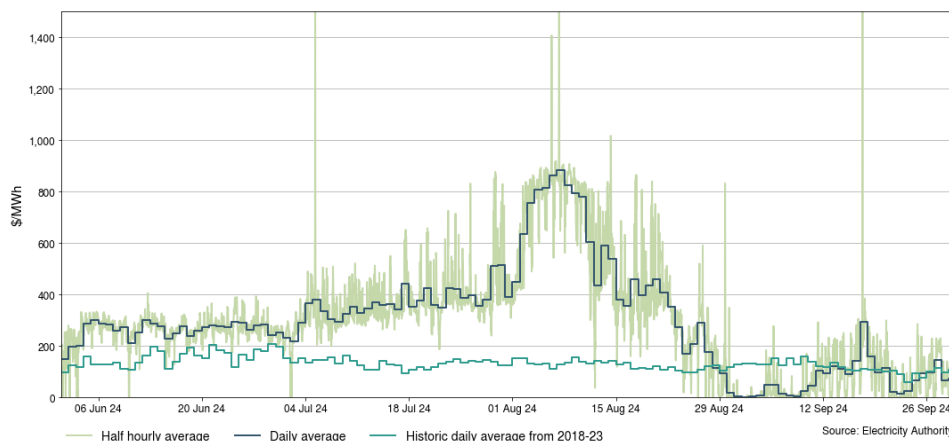


Figure 1: National average of wholesale prices from June-September 2024
Source: Electricity Authority

To investigate these exceptional prices the Electricity Authority undertook a review of the performance of the market in the winter of 2024. A summary of its conclusion is:

In the short term, the high wholesale prices reflected the risk of running out of stored water. As storage declined, many hydro operators raised offer prices to discourage hydro dispatch, to ensure future hydro storage would not run out. However, thermal generators did not have gas to run at full capacity, and increased offer prices to prevent running out of thermal fuels. This fuel shortage resulted in a dramatic price increase.⁷

These unusually high spot prices had very large and persistent adverse effects on the economy, and on public and political confidence in the electricity system:

⁶ *Ibid.*, p.2.

⁷ Electricity Authority, *Review of winter 2024*, April 2025, p.1.

- Contact and Genesis Energy negotiated arrangements to divert gas from producing methanol by Methanex to generate electricity;
- Meridian exercised its options for demand reductions at the Tiwai aluminium smelter that diverted an estimated 330 GWh of electricity from producing aluminium⁸ to supporting electricity demand elsewhere;
- Significant amounts of wood processing capacity were shut down, some temporarily and some permanently;
- The crisis in confidence in the market among politicians was such that an external review of the market by Frontier Economics was commissioned by the Minister; and
- Business organisation and several heads of industrial organisations expressed low confidence in the market.

As serious as the economic consequences above were, it is arguable that the likely impact of the high spot prices in 2024 on futures, forward and other contracted prices will be more significant to the economy in the longer run. To understand why, some explanation of the operation of the electricity market is necessary.

While the wholesale spot market is the most visible, it is effectively a market to assist balancing demand and supply in the very short-term. That this market operates efficiently is essential for the electricity system to function but very little electricity is bought and sold on the basis of the prices in this market alone.

Most commercial and residential consumers, and many industrial users, buy their electricity from a retailer on a fixed price, variable volume contract. Even the larger industrial users, that may buy on the wholesale spot market, usually take hedge contracts for much, or all, of their electricity and so are not fully exposed to spot prices directly.

Electricity futures prices are most usefully thought of as the consensus between buyers and sellers of an acceptable price to fix today for delivery at a later date when the contract matures rather than defer setting the price until later. The high short-term prices in the winter of 2024 will have impacted on futures prices by creating an upward adjustment in expectations of how high spot prices could go in the event of a dry year now that New Zealand also has constrained supplies of gas. Of course, a number of other factors will impact on futures prices so the effect of one event can be hard to identify but that there will have been an impact of this kind is inevitable.

Because of the ability of some parties to arbitrage between futures and forward contracts, movements in prices of both kinds are closely tied to one another. Retailers, who provide most of the contracts to electricity consumers, see forward and futures contract prices as either what they must pay to serve households and businesses, or the opportunity cost of serving them using their own generation.

Sustained elevated forward prices will put upward pressure on the prices paid by households and small businesses and on how vigorous the competition for their business is among alternative retailers. In short, the exceptionally high spot prices in winter 2024

⁸ *Loc. cit.*

will have raised what most consumers can expect to pay when their contracts are renewed. This consequence will adversely impact the cost of electricity for almost all consumers and is likely to continue to do so for some time.

Despite the unusually high prices due to the shortage of water and gas, the requirements to be able to access even the Alert level first tranche of contingent hydro storage as set out in the current SOSFIP did not come close to being met. This can be seen from Figure 2 below.

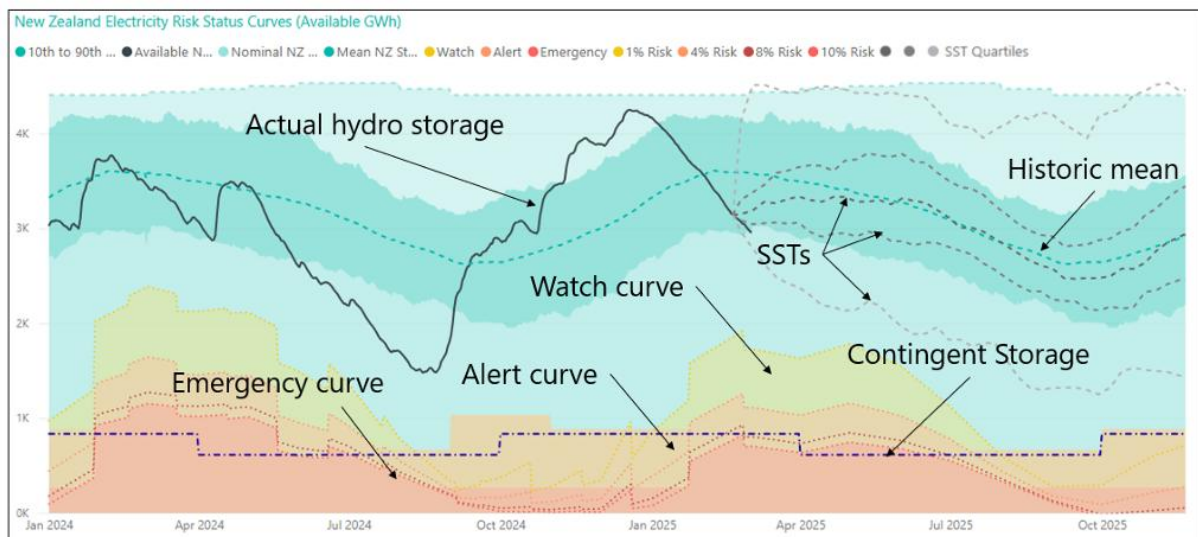


Figure 2: New Zealand ERCs and Simulated Storage Trajectories (SSTs)
Source: Transpower

The Alert level winter contingent reserve of 67 GWh in Lake Hāwea and 331 GWh in Lake Pūkaki would have become available had actual hydro storage in the middle of 2024 crossed into the orange Alert level area but the hydro storage line never got closer than about 700 GWh above it. This occurred around mid-August, at the same time as spot prices peaked.

700 GWh is a lot of electricity; enough to operate 350,000 average households over three months in winter, or approximately two thirds of all the households in Auckland.

Confidence amongst market participants that it was practicable to access contingent hydro storage to be able to generate 618 - 832 GWh would have gone a very long way to alleviating the issues created by the dry year winter in 2024. At the low point in early-mid August there was approximate 700 GWh of storage above the Alert limit.

If access to another 600-800 GWh had of been assured at that point, the market would have seen there was head room in hydro generation alone of roughly 1,300 - 1,500 GWh.

Confidence about access to all fuel supplies, but particularly hydro storage, is very important to pricing. The various offers by generators are a key component in determining wholesale spot prices in New Zealand.⁹ Generators, when making offers for

⁹ The spot price at an offtake node is not necessarily the price of the last offer price accepted to meet demand there. It is the marginal cost of meeting a small increment in demand at the node. This may be higher than any offer in the market if it is necessary to use more expensive electricity to satisfy demand elsewhere in order to

hydro plants with storage capacity, know that if they use water today they cannot use it through the same generation plant tomorrow, or anytime later. There is an opportunity cost to using hydro storage; the value of using it later. This opportunity cost is necessarily determined subjectively. The less certainty a generator has about hydro storage in future, including contingent storage, the higher it is likely to offer now. Confidence about access in future affects offers and can have a very material impact on spot prices.

Historically New Zealand has been able to cruise through winters with minimal impacts on the market with storage around the level of 1,300 to 1,500 GWh of head room. Gas and coal were in much shorter supply than they had been previously but even so, while the situation would have been seen as tight, the extreme reactions to preserve water and gas that generated the high spot prices and reactions to them would have been almost certainly much more muted.

In the biggest security of supply event in the market for nearly 20 years with the consequences outlined above, the rules in the SOSFIP around access to contingent hydro storage were shown to be such that none of it was able to be accessed to alleviate the crisis. The situation did not get close to triggering access under the rules. The current arrangements are not fit for purpose, which is to provide access to additional hydro storage when the market is materially impacted by dry year stress to alleviate the impact on the economy and consumers.

Proposed new Alert CSRB arrangements

In its recent SOSFIP Review Consultation Paper, the System Operator proposes updating the buffer for the Alert CSRB curve to better account for the changes in the operating restrictions at the Tekapo and Te Anau-Manapouri (Waiau) catchments.

It proposes to add 90 GWh to the buffer on account of the restrictions relating to flows in the Waiau. This is less than the 150 GWh Meridian identified as the effect of these restrictions in 2024. The System Operator trimmed the adjustment by 60 GWh on account of a recent agreement to ease these restrictions.

In 2024, Meridian also identified that there is a “shadow” constraint on the use of 220 GWh of storage in Lake Tekapo. Genesis in its submissions confirmed it is very reluctant to use this additional water during winter because, unless it has restored by 1 October the level of the lake so it contains the water capable of generating this additional electricity it is likely to breach its water consent. It would avoid breaching if an Alert level is in force because it is entitled to access this water in this situation in summer but Genesis cannot rely on an Alert level being operational on or after 1 October.

The System Operator proposes a variable adjustment for this “shadow” constraint, starting at 20 GWh in May and rising each month to 210 GWh in September. For other months no change is proposed. Since contingent water is included in the measure of hydro storage, the proposed adjustment is tantamount to saying that in May 200 GWh of the maximum 220 GWh of contingent storage is able to be used but by September only 10 GWh is able to be used. The reality is that since Genesis took over Lake Tekapo from

increase supply at the node due to transmission losses and constraints. The marginal cost at a node includes any increased costs incurred elsewhere necessitated to meet demand at the node.

Meridian in 2011 it has never used any of the last 220 GWh of storage and only in one year – 2019 – has it come close to doing so.¹⁰

The System Operator proposes no other adjustments to the CSRB than these increases in the Alert CSRB curve. It has, for example, not considered whether the commercial incentives of the current operators of the lakes with contingent reserve may potentially impact on how they are managed and whether this should be reflected in the CSRB curves.

Genesis manages Lake Tekapo but is also the major owner of fossil-fuelled generation capacity with its five units at Huntly. Contact manages Lake Hāwea but is also the owner of significant fossil-fuelled plants in Taranaki, the Whirinaki diesel plant and significant geothermal capacity around Taupō. The incentives on both parties to access contingent water could be influenced by their ownership of thermal plants. Even if there were no evidence this has happened, a prudent regulator should consider with a critical eye the potential incentives on all parties that may impact its proposals.

The proposal of the System Operator is to increase the Alert level buffer, and hence the Alert CSRB curve by between 90 and 300 GWh above the existing 50 GWh buffer. The proposed increases during winter range from 200 GWh in June to 300 GWh in September.

Figure 2 above, which has been reproduced from a System Operator document, shows that in the 2024 dry year the minimum gap between the Alert CSRB curve and actual hydro storage was 700 GWh and this occurred in mid-winter. Even if 300 GWh had been added to the buffer in 2024, the Alert CSRB would not have been breached by water storage by the order of some 400 GWh. The adjustment the System Operator proposes would not have been effective in providing access to contingent hydro storage.

The 4% ERC varies from year to year and so does the Alert CSRB as a result of this. However, in winter, the Alert CSRB is effectively determined by the floor, which is set administratively as the amount of contingent hydro storage plus the buffer. The floor does not routinely change from year to year and so from year to year the Alert CSRB is unchanged during winter, when dry year risk is most likely.

The corollary is that, if a similar dry year to what happened in 2024 occurred again in the near future, the proposed changes to the Alert CSRB curve would not allow access to contingent storage in practice. The proposed new arrangements are very unlikely to be fit for purpose and similar economic and reputational outcomes to 2024 are likely.

This is a serious flaw in the System Operator's proposal as the electricity market is on notice that any repeat of the events of 2024 is a serious existential risk to the current market arrangements and the Authority.

System Operator CSRB buffer discretion

The System Operator claims that it has discretion to alter buffers as it sees fit, with or without prior notice and consultation. It proposes to retain in the SOSFIP this

¹⁰ See Transpower, *SOSFIP Review – Consultation Paper*, October 2025, Figure 22.

discretionary power but add a requirement that it use its published CSRB buffer discretion process when deciding whether to determine a different buffer.¹¹

The Electricity Authority undertook a review of the regulatory settings for official conservation campaigns and the SOSFIP in 2018-19. In its Decision Paper published in June 2019 it noted, in the context of discussing a submission by Contact, that its decision was that “**non-discretionary** arrangements should be in place to enable access to contingent storage and the starting of an OCC ...”¹² [Emphasis added]. However, in the previous paragraph it stated “the buffer has been set to 50 GWh (in the SOSFIP), though the system operator can use an alternative figure if it consults on the change and publishes the new buffer.”¹³

In the slides used at a presentation to stakeholders of the decisions given jointly by Transpower and the Authority in July 2019 it is stated that “all floors and buffers will be transparently documented and *not* subject to regular change.”¹⁴ [Emphasis in original].

It appears the Authority contemplated that buffers might be occasionally changed by the System Operator but only occasionally and after consultation and publication. The Authority, on the face of this evidence, did not contemplate or think that in 2019 it was authorising the System Operator to change buffers at its discretion with or without consultation. There are several good reasons why it would not want to do this but, if it did, it should correct this situation and now is the time to do this.

Adverse consequences of buffer discretion

The System Operator being able to alter access to contingent hydro storage at its discretion has potentially serious risks and adverse consequences.

Firstly, as the Brownlee Review of 2009 noted when discussing access to contingent reserves, decisions about important security of supply issues should not be made on an ad hoc basis when decision makers can be under a lot of pressure to avoid power outages.¹⁵ Poor quality decisions could very easily occur in these circumstances.

Secondly, since the Brownlee Review, electricity futures and forward contract trading has become a major element of the market. Any adjustment to the buffers is an adjustment to the prospective future supply of electricity that will impact on the values of these contracts.

While parties using the market for hedging or being required to be market makers may have little choice but to trade, liquidity and efficiency requires that other parties are also attracted to participate in the market.

A key role of the futures market for electricity is efficient price discovery through competitive offering and bidding by participants with different perspectives and information sources. Efficient prices in this context are ones that are neither

¹¹ Ibid., p. 58.

¹² Electricity Authority, Reviews of regulatory settings for official conservation campaigns (OCCs) and the security of supply forecasting and information policy (SOSFIP), June 2019. p.8.

¹³ *Loc.cit.*

¹⁴ Transpower and Electricity Authority, *Joint Industry Briefing on decisions*, July 2019, slide 18.

¹⁵ The following is a link to Volume 1 of the Brownlee Review produced in 2009. See pp.13-22 for discussion of security of supply, including access to contingent reserves.
<https://web.archive.org/web/20100516004445/http://www.med.govt.nz/upload/69725/volume1.pdf>

systematically biased towards being too high or too low and quickly and appropriately respond to all new information relevant to future demand and supply.

It is the openness of the futures market to all potential participants that can meet initial and maintenance margin requirements, irrespective of whether they are involved in generation or use of New Zealand electricity, that is key. Wide participation is also key to supporting market making to maintain liquidity in the market; the ability to trade without shifting prices to inefficient levels. A liquid market is a very significant help to those seeking to manage risk.

If prices can be unilaterally changed by the System Operator this creates risks to those trading the market for purposes other than hedging or mandated market making. There is very likely to be a chilling effect on trading in the market by outside parties from Transpower claiming wide discretionary power to alter buffer values. This will be a detriment in efficiency of price discovery and liquidity.

In short, the System Operator having discretion to unilaterally change buffers as it sees fit is not consistent with promoting the efficient operation of the futures and forward markets and, as a consequence, the electricity industry. The Authority's statutory objective is to, *inter alia*, promote the efficiency of the electricity industry for the long-term benefit of consumers.

Amending the buffers should not be routine or subject to wide discretion. If there is a need to amend them, this would be best done by the Authority using its powers under the Electricity Industry Act 2010. The Authority is best placed to take into account the impact on the market as a whole and weigh up all the benefits and costs – including undermining the attractiveness and efficiency of the futures and other markets - relative to its statutory objective.

Need for first principles review

As was identified above, the proposed amended Alert CSRB curve is unlikely to be fit for purpose. Moreover, the proposal that the System Operator should have full discretion to change buffers, with or without consultation, is difficult to reconcile with the efficient operation of the electricity industry.

Moreover, the System Operator made statements earlier this year that clearly indicate its approach is to ensure contingent storage is always a last resort. "Making it easier to use contingent hydro storage to reduce gas and coal burn may feel like a no-brainer, but it isn't. It is our fuel of last resort. If we use our contingent hydro storage early and it doesn't rain, we can run out of energy later in winter."¹⁶ If left with significant discretion to amend buffers, the System Operator is likely to continue to use this power to pursue this objective.

The SOSFIP is incorporated into the Electricity Industry Participation Code (the Code) by reference. The Electricity Authority makes the decision to do this and its decisions have to be consistent with its statutory objective to promote competition in, reliable supply by, and the efficient operation of the electricity industry for the long-term benefit of consumers.

¹⁶ <https://www.transpower.co.nz/news/access-contingent-storage-clarified-winter-2025-ahead-full-rules-review>

It would be very difficult to reconcile imposing a firm hierarchy on fuel types and sources with this objective, as it would inhibit the efficient operation of the industry. For this reason, the Electricity Authority has always worked on the basis that the Code should be agnostic in relation to fuel-type chosen by participants.

When the Government Policy Statement on Electricity was released in October 2024 the accompanying press release from the Minister endorsed this approach by stating “The GPS outlines our expectation that the Electricity Authority will drive a more competitive, **fuel agnostic**, electricity sector that works in the long-term interests of consumers and avoid excessive prices.”¹⁷ [Emphasis added] The Authority, as an Independent Crown Entity, has to have regard to the GPS.

In view of these issues, and the importance of appropriate access to contingent hydro reserves to the continued existence of the current market, I believe the Authority itself should urgently undertake a first principles review of access conditions.

Contact’s longer-term proposal

One of the approaches this review should investigate is Contact’s proposal that access to contingent storage should be “at the discretion of the catchment operator.”¹⁸

As Contact identifies,¹⁹ there are several and powerful regulatory and market constraints incentivising generators to use contingent water prudently. Allowing catchment operators to manage access to contingent water would likely involve some adjustment to current consents but that is not a reason to discount this option without evaluating it.

The two principal regulatory incentives that would restrain catchment operators from running down their hydro storage in a way that is likely to cause security of supply issues are the Customer Compensation Scheme (CCS) and Scarcity Pricing. Changing the approach to the management of access to contingent storage in SOSFIP need not change these regulatory incentives.

There is also a very strong incentive on catchment operators to avoid taking actions that could trigger severe security of supply issues that reach the stage of triggering settlement between buyers and sellers based on administratively set scarcity prices.

Catchment operators would be obliged to sell to their customers at their contracted prices but acquire the additional electricity to meet their requirements above their own generation and previously contracted quantities at the extremely high scarcity prices of between \$6,500 and \$50,000 per MWh imposed by the Authority.²⁰

Another strong incentive on a catchment operator to not carelessly use contingent storage is its reputation and the damage it would do to its image in the retail market if it was found to have done so.

Allowing the use of contingent storage at the discretion of the catchment operator is very likely to require changes in the consent conditions that currently apply to the three lakes

¹⁷ <https://www.beehive.govt.nz/release/government-releases-plan-affordable-electricity>

¹⁸ Contact Energy, *Submission on the SOSFIP Review Issues Paper*, March 2025, p.6.

¹⁹ *Ibid.* pp.4-5.

²⁰ The scarcity price was set earlier this year at \$21,000/MWh for the first 5% of demand cut off, \$31,000/MWh for the next 15% and \$50,000/MWh for the remaining 80%. The scarcity price for fast instantaneous reserves (FIR) not met has been set at \$7,000/MWh and for sustained instantaneous reserves (SIR) at \$6,500/MWh. For controllable load the default value has been set at \$20,000/MWh.

as these envisage a regulator will define the triggers. However, this is not a reason to discount this option. Consent conditions can be changed, although this may take some time.

To support its application for a three year consent to have eased access to the contingent reserves in Lake Pūkaki fast-tracked, Meridian modelled the effects this would have on the management of the lake and the electricity system more generally. Meridian provided the modelling to the System Operator earlier this year. It has had it peer reviewed by Sapere and proposes to submit slightly refined modelling results with its submission on the SOSFIP consultation paper.

Energy Link has been modelling the New Zealand electricity industry for multiple players, including the Authority, since the market was established in 1996. It very recently published its own modelling of Meridian being granted management decisions over 350 GWh of the current 545 GWh of contingent storage in Lake Pūkaki.²¹

Energy Link's modelling results are consistent with Meridian's modelling results. It found:

- Lakes would be held marginally lower on average.
- There would be significantly less spill in summer – about 30 – 50 GWh per month – or 167 GWh per year; equivalent to the annual demand of Balclutha or Whanganui.
- There is less thermal generation and CO2 emissions.
- Expensive thermal generation is displaced in winter, reducing peak prices.
- The lakes are managed after winter more conservatively than is currently the case “in order to have the lakes filling up through spring and summer in preparation for the following winter period of high demand”.
- Summer prices are higher, which provides a boost to the earnings of solar farms. This would encourage more investment in them.

Together, these factors indicate there are significant potential benefits in enabling better access to contingent storage such as in the manner Contact has proposed, while incentives on hydro generators to prudently manage storage would be preserved.

Price based triggers for access

Another approach this first principles review should consider is whether the triggers for access should be specified relative to some price metric. Using price rather than water levels would tie access to what really matters economically and politically and so is likely to result in more efficient and durable outcomes. An example of the sort of arrangement I have in mind with this suggestion may help. Rather than define the Alert CSRB in terms of whether hydro storage falls below some level, it could be defined in terms of whether average wholesale spot prices over some specified short time period is above a pre-set estimate of the long run marginal cost of a notional gas peaker by some percentage. In other words, if spot prices get above gas peaker costs by some margin, contingent hydro storage can be accessed.

An advantage of this approach is that using price rather than water levels would tie access to what really matters economically and politically and so is likely to result in

²¹ <https://energylink.co.nz/resources/blogs/allowing-hydro-lakes-to-be-lowered-during-dry-spells-does-the-idea-hold-water> .

more efficient and durable outcomes. Another advantage is that it is likely to be able to be implemented if applied to the Alert CSRB without a need to change consent conditions.

It has already been noted that Genesis manages Lake Tekapo but is also the major owner of fossil-fuelled generation capacity with its five units at Huntly. Contact manages Lake Hāwea but is also the owner of significant fossil-fuelled plants in Taranaki, the Whirinaki diesel plant and significant geothermal capacity around Taupō. The incentives on them to access contingent water and use hydro capacity could be influenced by their ownership of thermal plants.

Between them, Genesis and Contact hold a significant share in the thermal generators able to provide dry year back up. One advantage of a price trigger over a trigger based on total hydro storage is that competition concerns arising from the incentives of generators with thermal capacity will be moderated. One of the legs of the statutory objective of the Authority is to promote competition in the electricity industry.

Interim arrangements

Conducting a first principles review will take time and dry-year risk remains significant, especially in the short-term while the market undertakes the investment needed to adjust to the evolving shortage of gas. In the interim, the Authority could request the SOSFIP picks up Contact's suggestion that the Alert level trigger should be hydro storage falling below some relatively high level. Contact suggests 1,700 GWh.²²

In the current situation, in which the market is adjusting to the rapid decline in the relatively ready availability of gas for covering dry year risks, a regime that sets high buffers would seem sensible. The CCS and Scarcity Pricing policies of the Authority are strong incentives on catchment managers to manage hydro reserves prudently.

Practicable access to contingent hydro storage is important to the economy and to the continuation of current market and regulatory arrangements.

Thomas Brent Layton

27 October 2025

²² *Ibid.*, p.2.