

IMPLEMENTATION TIMING OF CHANGES AFFECTING THE HYDRO RISK CURVES

SECURITY
AND
RELIABILITY
COUNCIL

We are seeking updated advice from the SRC on the timing of implementation of possible changes that would affect the hydro risk curves. This paper describes the relative merits of implementation in late-May versus 1 October 2019.

Note: This paper has been prepared for the purpose of the Security and Reliability Council. Content should not be interpreted as representing the views or policy of the Electricity Authority.

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1. Authority seeks SRC view on timing

- 1.1. The Electricity Authority (Authority) is considering approving changes that would alter the hydro risk curves. The SRC considered aspects of those changes at its [24 October 2018 meeting](#) and subsequently advised the Authority that:

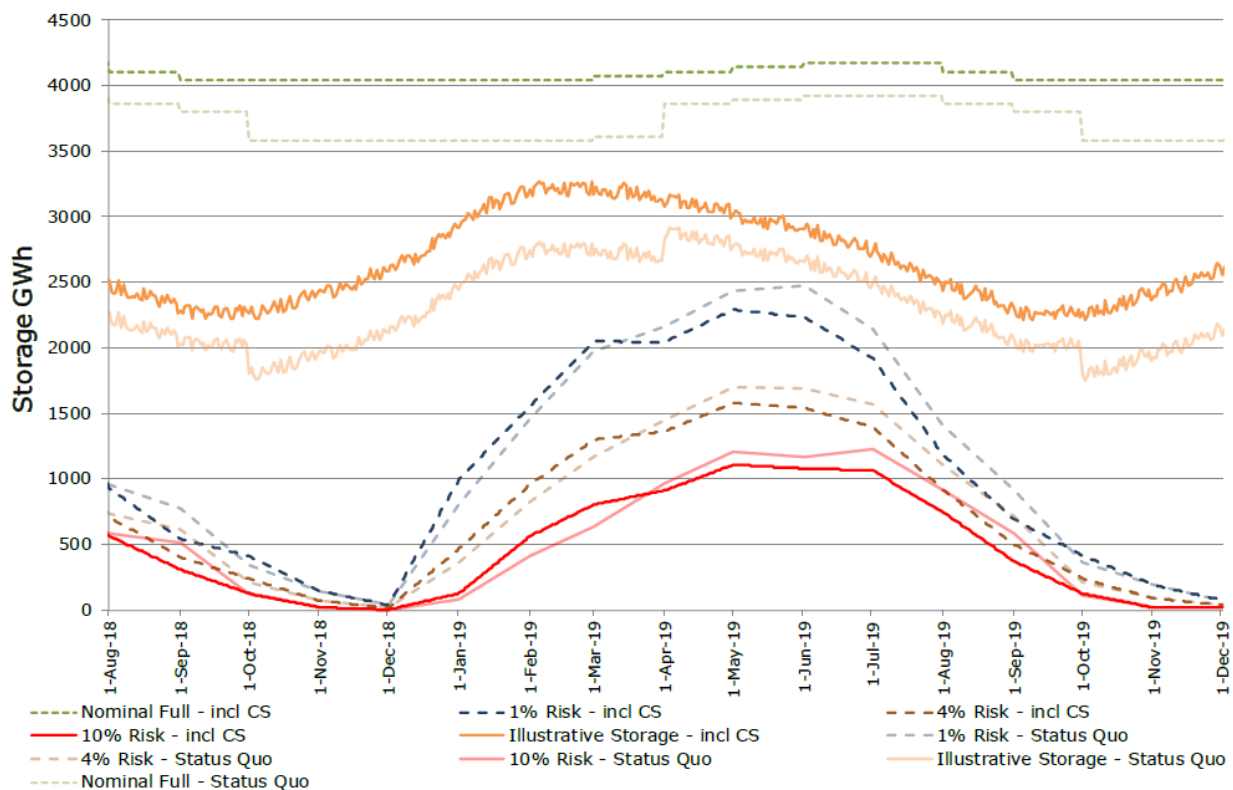
“Implementation of [changes] in late-April should not be too problematic, although any later creates further impact on traders”

- 1.2. Since then, a project delay has ruled out late-April as an option. The Authority seeks the SRC’s advice on the relative merits of implementing changes, assuming the Authority Board approves the changes:

- 1.2.1. in late-May (with the decision announced four weeks beforehand); or
1.2.2. on 1 October 2019 (with the decision announced in early-May)

- 1.3. Figure 1 below illustrates the impact of the possible changes.

Figure 1: Impact of possible changes on the 2019 hydro risk curves



Source: Figure 2 from the system operator's consultation on their review of the SOSFIP

2. Background

- 2.1. The Authority and the system operator recently ran linked consultations on:
 - 2.1.1. contingent storage modelling: a proposal by the system operator to alter its hydro risk curve calculations so that the availability of contingent storage is recognised when assessing the risk of fuel shortage
 - 2.1.2. official conservation campaign triggers: a proposal by the Authority to amend the trigger conditions for starting and stopping official conservation campaigns, including to ensure the triggers are compatible with the treatment of contingent storage
 - 2.1.3. contingent storage access: a proposal by the Authority to amend the mechanism used to trigger resource consent conditions that release availability of contingent storage.
- 2.2. Consultation ran from December to February and attracted submissions from ten parties. If the Authority decides to make changes then implementation steps would include amending Part 9 of the Electricity Industry Participation Code and the security of supply forecasting and information policy (SOSFIP).
- 2.3. The purpose of making such changes would be to enhance efficiency and reliability by:
 - 2.3.1. enhancing risk information – the hydro risk curves are a key source of risk assessment information for the sector. Including contingent storage may improve the transparency and ease of understanding of the HRC charts, and better represent the capabilities of the power system. This may support more effective risk management.
 - 2.3.2. enhancing triggers – improved triggers may make the start and end conditions for official conservation campaigns more robust to changes, and better optimise the timing of official conservation campaigns.
- 2.4. The Authority's consultation paper indicated it would be useful to introduce changes before winter 2019 and sought views on implementation timing:

"How far in advance of the start of winter 2019 (i.e., 1 June 2019) would you need the proposed changes implemented to be of use in your operational decision making for winter 2019?"
- 2.5. This prompted mixed responses:
 - 2.5.1. Contact Energy, Flick, and Meridian Energy favour early implementation
 - 2.5.2. Genesis Energy supports at least one month's notice, and preferably six months
 - 2.5.3. Mercury and Trustpower would prefer implementation in October
 - 2.5.4. Pioneer would prefer a two year notification period.¹

¹ The remaining three submitters did not respond to this question.

- 2.6. At the two extremes of the spectrum, Meridian Energy consider the changes would not be exceptional relative to the normal process of updating hydro risk curve inputs and assumptions, while Trustpower consider the changes could cause a sudden change in perceived risk and will impact forward prices. Pioneer's view is framed in the context of their wider opposition to the customer compensation scheme that accompanies the declaration of an official conservation campaign.

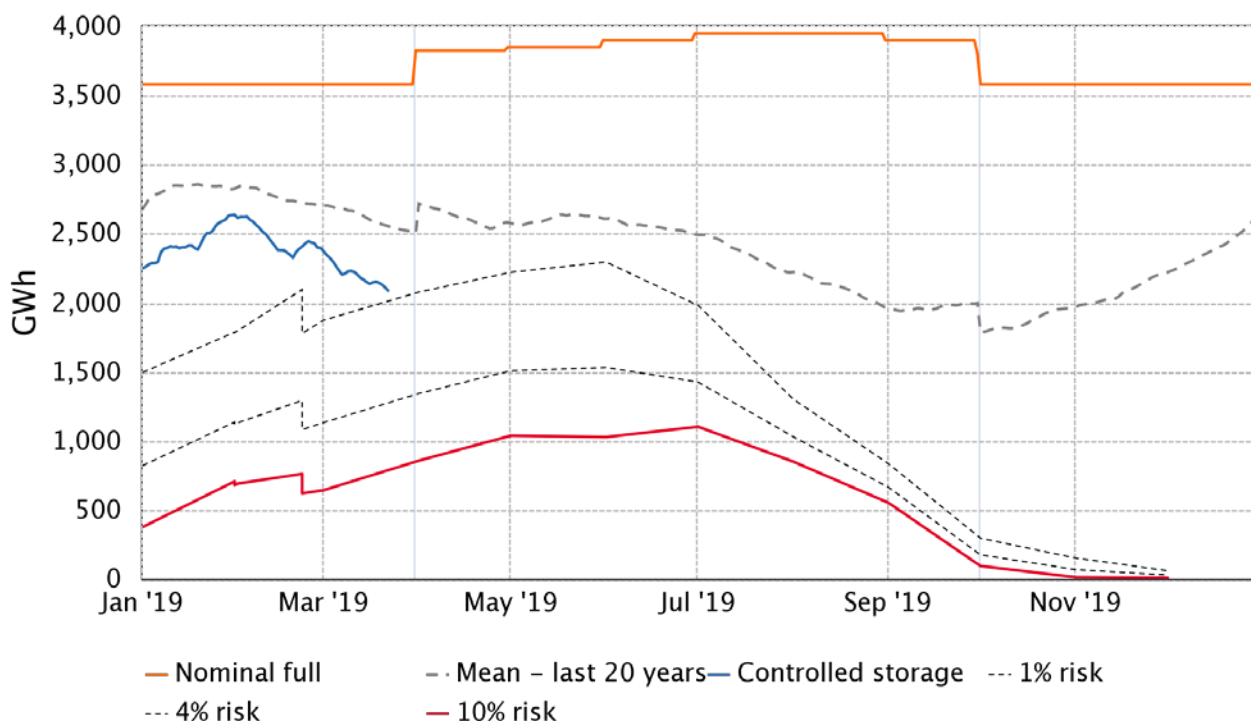
3. Considerations for timing of implementation

- 3.1. Should the Authority decide to amend the official conservation campaign settings, the decision on timing involves weighing up the following considerations.

Implementation in late-May 2019

- 3.2. Enhancing risk management decisions and the timing of official conservation campaigns creates benefits that are most likely to arise during dry winter periods. To the extent changes would improve fuel management incentives, some benefits would be foregone if they are not in place for this winter.
- 3.3. Whether this is a concern depends on how likely it is that this winter will have low hydro supplies. While it is early to form a view on the coming winter, the latest hydro risk curves show storage is currently materially below mean levels.

Figure 2: Hydro risk curves and actual storage as at 21 March 2019



emi.ea.govt.nz/r/m435q

- 3.4. Downsides from implementing ahead of winter could arise if this harmed confidence in the predictability of rulemaking, and the risk of this impact is higher if the change has a material and unexpected adverse impact on participants. The impact is illustrated in Figure 1.
- 3.5. Of relevance to this consideration:
 - 3.5.1. The possibility of changes has been signalled by:
 - 3.5.1.1. The project to review the possible changes has been on the Authority's published work programme since the 2017/18 year.
 - 3.5.1.2. The Authority has recently consulted on changes, including the desirability of implementing ahead of winter.
 - 3.5.2. There is inherent volatility in hydro risk curve forecasts, and in actual hydrology. The hydro risk curves for 2019 have had five significant revisions since they were first published in March 2018. The 10% hydro risk curve on 1 July 2019 has moved from as little as 871 GWh (on 22 March 2018) to as much as 1,224 GWh (on 11 December 2018). The possible changes could reduce the height of the 10% hydro risk curve on 1 July 2019 by ~200 GWh and simultaneously increase actual storage by ~240 GWh.

Implementation of changes on 1 October 2019

- 3.6. Deferring changes until after the winter would provide a longer lead time for traders to analyse the impact and to respond by adjusting their risk management settings, including fuel management, hedging positions and any other operational steps.
- 3.7. This could support confidence that potentially value-shifting rule changes will not be made without providing a reasonable lead time between the final decision and the implementation date.
- 3.8. A possible downside to this approach is that an amended methodology would have been decided and publicised but not implemented. This could cause some confusion as to which methodology is being used and could expose the Authority and the system operator to ongoing pressure to bring forward changes, especially if the winter 2019 is particularly dry.

Summary of key advantages and disadvantages

3.9. The key advantage and disadvantage of each option is summarised below in Table 1.

Table 1: Summary of key advantages and disadvantages

Option	Key Advantage	Key Disadvantage
Before winter	Opportunity to improve winter 2019 risk management	Arguably has potential to harm confidence in predictability of rule making
After winter	Provides long lead time for traders to adjust their positions	Existence of dual methodologies may cause confusion

4. Questions for the SRC's consideration

4.1. The SRC may wish to consider the following questions.

- Q1. Does the SRC have a preference for seeing any possible changes to the hydro curves be implemented in late-May or on 1 October 2019?
- Q2. What further information, if any, does the SRC wish to have provided to it by the secretariat?
- Q3. What advice, if any, does the SRC wish to provide to the Authority?