Evolving market resource co-ordination: Tie-breaker provisions

Consultation Questions

Submission Date:	14 August 2025
Organisation:	Ngawha Generation Limited

Question 1: Do you support our proposed tie-breaker solution: dispatch in proportion to offers? Do you have any feedback on any aspect of it or our consideration of it?
No. When considering the options, no consideration has been given to the physical operation of the generation plant, contribution to grid stability, or the optimal economic solution. The paper's reasons for choosing this option are: • Simplicity • Operational certainty • Equity for market participants • These reasons don't align with the Dispatch Objective under Clause 13.57 of the EIPC 2010. Point 23 in the consultation is below. Equity for generators doesn't appear to be an objective for the System Operator but is one reason for the proposed solution. 23. The Code requires the System Operator to schedule and dispatch generation to maximise the gross economic benefits for all purchasers. This requirement is placed by the Dispatch Objective[4] and is subject to the offered capacity of the transmission grid and dispatched resources, achieving the Principal Performance Obligations (**PPOs**) and the needs of restoration. The System Operator may apply further constraints on the dispatch solution to comply and plan to comply with the PPOs. Particularly, the constraints applied should allow the System Operator to ensure transmission assets do not become overloaded, and the system remains in a stable operating state. Ensuring a consistent dispatch solution is important to meeting these criteria and avoiding unexpected system configurations. The paper suggests that tiebreakers currently occur infrequently. Due to the delay in the Special Protection Scheme on the Transmission line to Kaikohe, Ngawha has been notified that constraints will likely happen over hundreds of half hours this summer. Under 42, it also states that clear and predictable tie-breaker rules reduce the need for discretionary SO intervention, improving transparency and market confidence. Given the industry's sophistication, other solutions can also achieve this.

Question 2: If you do not support our proposed tie-breaker solution, which alternative option would you prefer? If so, please describe the alternative and why you prefer it.

- Ngawha supports a two-tiered approach of Option 5, then Option 1, if required.
- Ngawha proposes this approach for the following reasons:

System stability:

- Ngawha agrees with the paper's assessment that this approach (Option 5) can support more efficient outcomes. We agree with prioritising geothermal generation over intermittent sources due to its generator characteristics e.g. contribution to system inertia and generation certainty.
- However, the paper then dismisses this option as it does not provide a standalone solution and its implementation would require complementary solutions, introducing additional complexity. It doesn't state any cost-benefit analysis. It also excludes further considerations, which are below.

Safe Operating environments and precedents set

- Geothermal plants are relatively inflexible generation assets and are designed to operate continuously at consistent generation. Therefore, changing the output frequently or below the minimum operating level is not good industry practice.
- Other geothermal participants have claimed 13.82 (2)(a) in response to dispatch requests, showing this is an industry-wide issue.
- The System Operator has recognised this. On 30 January 2025, the System Operator issued an Upcoming THI_WKM Planned Outage Plan and a Customer Advice Notice—New Permanent Market Nodes (See attached). This plan contained a high-level constraining off generation order, which is:

- If constraining back generation cannot be prioritised by the price stack, (i.e. to much generation priced at $0.00/MWh) NCC may need to constrain off generation using discretion. At a high-level the order of constraining off generation is:
    1. First, Wind / Solar farms
    2. Fast ramping hydro
    3. Thermals to minimum output levels
    4. Process based generators such as co-generation
    5. Lastly, Geothermal that cannot ramp very quickly
        - NCC will discretion off Geothermal generation below their minimum run based on security impact, with considerations given to offer price, generation output, restoration time, resource consents and post-event response.
        - To help us make this assessment, we have engaged with relevant generators for additional plant details.

- To assist with this, the SO issued a CAN with new permanent market node constraints to prevent geothermal generation from being dispatched below their minimum safe operating levels during periods of zero pricing. A solution should be consistent with this approach.

- Under the proposed tie-breaker solution, Ngawha may turn off.

Reinjection of NCGR and emissions

- The reinjection of greenhouse gases (commonly known as NCGR) as part of Ngawha Generation's steady state zero emissions operation relies upon no variation in output. The plant's physical characteristics which allows NCGR to occur, have been tailor-made to reflect steady state running and even fluid extraction to reflect our resource consent limit throughout the year. A reduction in fluid flow throughout plant (due to reduced power output) disrupts this predetermined equilibrium and will lead to a higher level of emissions. Based on historic data, these emissions could be up to 300 g $CO_{2\ eq}$ /kWh during these periods of instability. That being three times higher than the average NZ emissions to date in 2025 (105 g $CO_{2\ eq}$ /kWh), adding to the overall emissions of NZ doesn't align with our climate strategy as a country.

Optimal economic outcome

- Constraining off slow start and/or ramping generation will result in reduced offers in adjacent periods, resulting in higher prices than otherwise would have been the case. This doesn't align with efficient outcomes.
- Ideally, SPD would consider intertemporal optimisation as outlined in 4.8 MRDA refinement. Ngawha agrees that this is not considered at this point, due to complexity and scope requirements; however, implementing option 5 with option 1 is a workable solution, weighing up the costs and benefits. Further investigation into intertemporal optimisation should be considered.

- Overall, Option 5, has not been fully scoped and is dismissed based on its undefined complexity and lack of a standalone solution.

Question 3: Are there alternative options we have not identified which we should consider?

- See Question 2

Question 4: Do you agree with our qualitative assessment that the benefits of the proposal can reasonably be expected to outweigh the costs?

- Ngawha agrees that a solution would be beneficial, and the reasoning outlined in the paper. However, we disagree that enough work has been done to define the benefits and costs of the solutions, and this has led to Option 1 being preferred rather than Option 5.

Question 5: Do you agree it is appropriate to rely on qualitative evaluation of the costs and benefits of the proposed amendments? If not, what information, evidence etc can you provide and/or what methods would you recommend to quantify the costs and benefits?
• In principle, Ngawha agrees that a full cost-benefit analysis is not required to decide. However, further work is necessary to define the benefits of the approaches and the difference in cost of implementing them. In particular, what is the additional cost to implement Option 5 compared to Option 1? • Due to the delay in the Special Protection Scheme on the Transmission line to Kaikohe, Ngawha has been notified that constraints will likely occur over hundreds of half hours this summer. This scenario could be used to provide quantitative evidence.
Question 6: Do you think we should progress a proposal to incorporate information about any tie-breaker solution we decide to adopt into the Policy Statement, to enhance certainty and transparency?
Potentially, however, this should be decided with further consultation.
Any other comments:
• Transpower's current generation pipeline includes over 17GW of applications, of which over 90% is intermittent generation. The potential issues with intermittent generation are well documented, especially over the transition period before affordable storage solutions are available. • Baseload generation will play a pivotal role during the transition, as it provides reliable generation and associated system benefits e.g. inertia. The importance of this has been recognised by the government with the launch of *From the Ground Up: a draft strategy to unlock New Zealand's geothermal potential*. • Implementing new provisions that manage geothermal generation on the same basis as intermittent generation doesn't make sense. • Footnote 1 states that multiple pricing nodes are outside the scope of this consultation. Can we get an explanation of why, given that this is a potential outcome e.g. zero prices across Northland due to constraints.