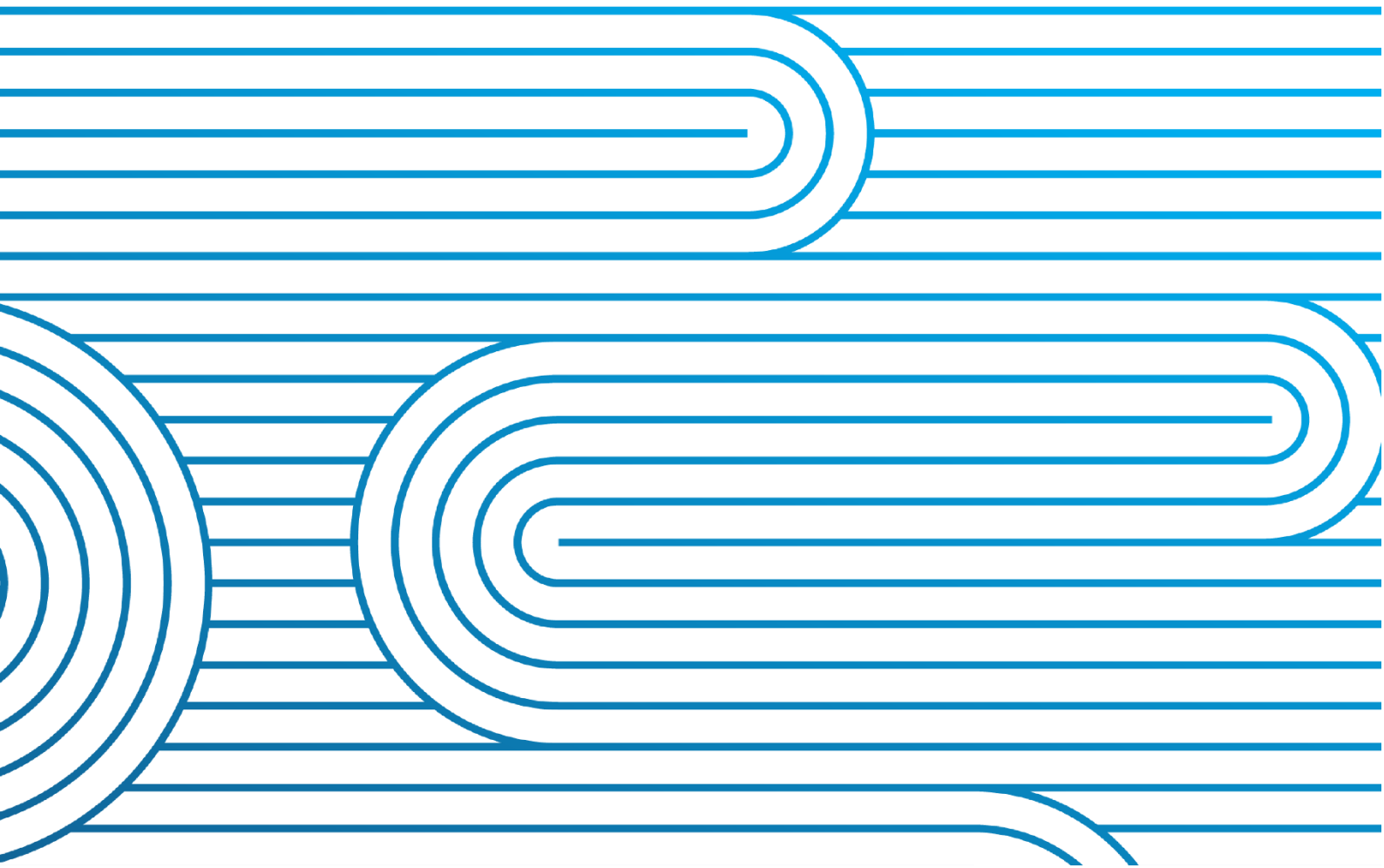


Security of Supply Forecasting and Information Policy and Emergency Management Policy Review

**Summary of Submissions and Recommendations –
May 2022**

Transpower New Zealand Limited



IMPORTANT

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1 Purpose

1.1 Review of SOSFIP & EMP

1. The Security of Supply Forecasting and Information Policy (SOSFIP) and Emergency Management Policy (EMP)¹ are Transpower system operator policy documents, incorporated by reference into the Code. It is the role of Transpower as the system operator to operate the policy, and the role of the Electricity Authority (Authority) to direct and approve the policy as it forms part of the market design. The policies describe how the system operator prepares and publishes information to assist market participants in managing security of supply risks.
2. Sustained low hydro inflows coupled with a 20% reduction in gas production in the autumn of 2021 resulted in a period of elevated wholesale electricity prices. There was a high level of industry and media commentary at the time and concern expressed that the Electricity Risk Curves (ERCs) were not accurately estimating the availability of gas for thermal generation. In response to this concern, the Authority commissioned MartinJenkins to undertake an operational review of the 2021 dry year event.
3. Further to recommendations made by MartinJenkins, the Authority and the system operator initiated a review of the settings of the SOSFIP and EMP risk policies. The system operator published a consultation paper on 29 March 2022² proposing several changes be made to the SOSFIP and EMP. Submissions closed on the consultation paper on 26 April 2022.
4. The system operator proposed updates to the SOSFIP and EMP to reduce uncertainty and subjectivity, in particular:
 - a. potential updates in assumptions around gas reallocation used to inform the ERCs to better reflect prevailing conditions in the gas and electricity market. Three options were included in the consultation.
 - b. reviewing the assumptions used to determine electricity demand response in the ERCs.
 - c. clarifying that medium demand forecast be used in determining the ERCs.
 - d. simplifying reporting by removing the current watch and alert curves but retaining the percentage risk curves.
 - e. Including a 'worst case time to an OCC' metric in daily security of supply reporting once daily reporting is triggered.
 - f. clarifying when the triggers for the system operator to produce daily security of supply reporting are met.
 - g. encouraging proactive information disclosure to the system operator.
5. This paper sets out the system operator's consideration of issues raised in submissions and its recommendations to the Authority on changes to the SOSFIP and EMP.

¹ The current SOSFIP and EMP can be found at <https://www.transpower.co.nz/system-operator/security-supply/security-supply-forecasting-and-information-policy> and <https://www.transpower.co.nz/system-operator/security-supply/emergency-management-policy>

² The consultation paper can be found at [SOSFIP and EMP consultation 2022.pdf \(transpower.co.nz\)](https://www.transpower.co.nz/system-operator/consultation/2022/sosfip-and-emp-consultation-2022.pdf)

2 Feedback received

6. The system operator received feedback from 10 parties and organisations, which is available on our website.³

Electricity Generators/Retailers	Gas stakeholders	Electricity consumer representatives
<ul style="list-style-type: none"> • Contact • Genesis • Manawa • Mercury • Meridian • Nova 	<ul style="list-style-type: none"> • Firstgas Group • OMV • Gas Industry Company (GIC) 	<ul style="list-style-type: none"> • Major Electricity Users Group (MEUG)

2.1 Summary of the main submission points and themes

7. Submitters provided feedback on the following key themes. The main points raised in submissions and the system operator's responses are set out in section 3 below.
- a. Gas reallocation used to inform the ERCs.
 - b. OCC trigger.
 - c. Electricity demand response used to inform the ERCs.
 - d. Demand forecast used in the ERC calculation.
 - e. Watch and Alert curves.
 - f. Review of the EMP triggers for daily security of supply reporting.
 - g. Proactive information disclosure to the system operator.

³ <https://www.transpower.co.nz/system-operator/security-supply/security-supply-forecasting-and-information-policy>

3 Summary of feedback and system operator’s response

8. This section provides a summary of the points raised in stakeholder feedback, and the system operator’s responses.

3.1 Gas reallocation used to inform the ERCs

9. The ERC modelling currently assumes a degree of gas reallocation from industrial gas users to electricity generation if there is insufficient gas available to fuel thermal generators available to make offers in the wholesale electricity market. The system operator considered three options for the treatment of gas available for electricity generation in ERC modelling:
- a. Option 1 – the status quo, gas reallocation includes gas that is assessed by the system operator to be available, based on historical observations or other accessible information.
 - b. Option 2 – gas reallocation includes gas that can respond in the short-term to electricity market signals (Type 1) or gas that can respond in a longer timeframe subject to a formal agreement (Type 2). Type 2 would be subject to a threshold of increasing electricity generation by at least 15 GWh/125 TJ per month under a single or multiple agreements.
 - c. Option 3 – only gas contracted for generation that has a formal agreement is included in the ERC calculation.

Submitters’ views:

10. There were mixed views on the preferred option, in terms of both the option parameters and the assessment of benefits and dis-benefits:
- a. Contact, Firstgas, and Nova preferred Option 1.
 - b. MEUG also preferred Option 1 but with greater subjectivity made available to the system operator to assess available gas.
 - c. Genesis, Manawa, Mercury and OMV preferred Option 2.
 - d. GIC preferred Option 3.
 - e. Meridian had no strong preference, but disliked Option 3.
11. Submitters favouring Option 1 questioned whether:
- a. contract disclosure obligations required to support both Options 2 and 3 would have net benefits
 - b. changes to the status quo relating to gas reallocation is appropriate for the SOSFIP, a document incorporated by reference into the Code.

MEUG noted that no evidence had been provided that the status quo had failed or that there is an observable decrease in the willingness of participants and other parties to act in good faith. Conversely, Genesis and OMV felt that the status quo tended to overestimate the quantity of gas that could be reallocated.

12. Submitters favouring Option 2 felt that the status quo did not provide an accurate and visible picture of the level of electricity system risk in respect of gas availability. In their view, Option 2 provided the best balance between accurate risk reporting and commercial discretion for participants.
13. Submitters other than Nova generally agreed that a 15 GWh/125 TJ per month materiality threshold for Type 2 gas reallocation should be applied but asked for more information on how the threshold was determined.

14. For Option 2, Genesis and Nova felt that Type 1 and Type 2 responses should not include other thermal fuels because other fuels such as coal and diesel were generally not supply constrained. Contact and Mercury supported including other thermal fuels for consistency reasons. Six submitters did not express a preference.
15. GIC preferred Option 3 arguing that the current lack of contractual arrangements to support electricity security of supply can cause instability and uncertainty for the gas sector in dry years.

System operator's response:

16. The 2021 dry year and the subsequent review commissioned by the Authority (MartinJenkins report) highlighted several opportunities for improvement. One of those was reducing subjectivity in the ERC methodology wherever possible and in particular the assumptions of gas availability for electricity generation. The system operator agreed with this finding and considers the assumption of gas reallocation for increased electricity generation is the area of subjectivity with the largest potential impact on the ERCs. The Authority have also indicated to the system operator that it requires that the SOSFIP be updated to better reflect prevailing conditions when assuming the amount of gas available in the ERCs. In regards to the gas reallocation options presented in the system operator's consultation paper, both Option 2 and Option 3 require less subjectivity relating to gas assumptions compared to Option 1 (Status quo).
17. Both Option 2 and Option 3 recognise that not all gas made available for electricity generation has the same likelihood of materialising and takes this into consideration, requiring formal agreements to be in place before including in the ERC calculations. Option 3 goes further in requiring these agreements on all gas for electricity generation whereas Option 2 is limited to gas reallocated for electricity generation. Therefore, Option 3 will require a lot more information to be disclosed and processed by the system operator and will result in ERCs that require updates more frequently as gas supply agreements change.
18. 15GWh per month corresponds to an adjustment of ~20MW base load generation increase (or demand reduction if also applicable for demand response). Nova questioned whether this threshold should be larger (e.g. 75-100GWh). While making this threshold larger would reduce the amount of Type 2 demand response that would need to be disclosed and therefore the obligations on parties to disclose, we consider an ~20MW base load increase in generation or reduction in demand (especially if demand response becomes more prevalent) could have compounding effects. Therefore we consider a 15GWh threshold provides an appropriate balance between practicality and impact (especially if these impacts compound).
19. We agree that coal and diesel supply for electricity generation are currently less constrained than gas and potential changes to the current treatment of these other thermal fuels (coal and diesel) in the ERC calculation are not warranted.
20. The system operator will refer the issue to the Authority of whether enabling Code provisions for Options 2 (and Option 3) are more suitable for the main body of the Code, as opposed to the current SOSFIP.

System operator's recommendation to the Authority:

Recommendation 1 (R1) – The system operator recommends Option 2 be implemented – ERC calculations use only gas reallocation for increased electricity generation that is:

- a. Type 1 response – reallocation of gas that can turn off/on or up/down within 4 weeks or less in response to wholesale electricity market signals.
- b. Type 2 response:
 - i. Has a formal agreement in place that indicates the quantity of the response and under what circumstances it would be activated.

- ii. Will increase electricity generation by at least 15 GWh/125 TJ per month under a single or multiple agreements.
- c. The system operator recommends additional ERC scenarios be presented once a quarter that show the impact on the ERCs if no Type 2 response agreement were reached and/or if plausible large Type 2 response agreements were reached.
- d. The system operator does not recommend other thermal fuels such as coal and diesel be included in Type 1 and Type 2 responses.

The Authority should determine whether such changes are more appropriate for the SOSFIP or the Code.

3.2 OCC trigger

21. The OCC trigger is currently based on the 10% likelihood of hydro storage running out. The system operator proposed the OCC trigger calculation is not changed under any of the options described in section 3.1 above.

Submitters' views:

22. Five submitters agreed that the OCC trigger should not change and four did not comment. Genesis felt that there should be more nuanced OCC triggers to manage energy shortages, e.g. regional OCCs.

System operator's response:

- 23. The Authority reviewed the OCC trigger in 2018/19. At that time, the Authority decided to retain the trigger for the start of an OCC based on the 10% likelihood of hydro storage running out.⁴
- 24. As noted in the consultation paper⁵, the system operator does not consider any changes are necessary to the OCC trigger as a result of Option 2 for gas reallocation used to inform the ERCs.
- 25. The OCC trigger is prescribed in Part 9 of the Code, therefore changing it requires the Authority to consult on a change and amend the Code.

System operator's recommendation to the Authority:

Recommendation 2 (R2) – The system operator recommends no changes be made to the OCC trigger, unless the Authority has reasons for changing the trigger not related to Option 2 for gas reallocation used to inform the ERCs.

3.3 Electricity demand response used to inform the ERCs

- 26. The ECR modelling currently assumes a 2% reduction in electricity demand in response to the high prices expected during a dry year event. The system operator considered three options for the treatment of demand response in ERC modelling, similar to those considered for gas reallocation:
 - a. Option 1 – the status quo, no change to current treatment of demand response.
 - b. Option 2 – Include only demand response that is likely to respond in the short-term to electricity market signals (Type 1) without the need of formal agreements and demand response that is less likely to respond in the short-term to electricity market signals would

⁴ Refer to the Authority industry briefing at <https://www.ea.govt.nz/assets/dms-assets/25/25522OCC-presentation.pdf>

⁵ The consultation paper can be found at [SOSFIP and EMP consultation 2022.pdf \(transpower.co.nz\)](https://www.transpower.co.nz/SOSFIP_and_EMP_consultation_2022.pdf)

be subject to a formal agreement (Type 2). Type 2 demand response characteristically would be more material in size and duration.

- c. Option 3 – Include only quantities of demand response subject to a formal agreement.

Submitters' views:

27. There were mixed views on the preferred option:

- a. Contact, Firstgas, Meridian and MEUG preferred Option 1 stating that the system operator should continue to exercise its judgement in assessing demand response based on observed recent history and publicly available information.
- b. Genesis and Mercury preferred Option 2 on the basis that the same principles ought to apply to both generation and demand response.
- c. Four submitters expressed no preference.

System operator's response:

28. MartinJenkins recommended the system operator reduce subjectivity in the assumption of gas availability for electricity generation. The system operator considers the same risk principles that are applied to gas reallocation for increased electricity generation ought to also be applied to electricity demand response. There are no compelling reasons to use different risk principles.

29. While subjectivity of assumptions on electricity demand response are currently less material to the ERCs (compared to those on gas reallocation), these could become more material in the future as loads such as data centres, electrification of industrial load, or potentially green hydrogen plants are added and can provide demand response. Thus the system operator considers "future-proofing" the ERC assumptions on electricity demand response as a reasonable approach.

System operator's recommendation to the Authority:

Recommendation 3 (R3) – The system operator recommends Option 2 be implemented – include only demand response that is likely to respond in the short-term to electricity market signals (Type 1) without the need for any pre-existing formal agreement and demand response that is less likely to respond in the short-term but could be more material (Type 2) which would be included subject to evidence of a formal agreement.

3.4 Demand forecast used in the ERC calculation

30. Calculating the ERCs requires a demand forecast. Most forecasts provided come with a range (e.g. high, medium, low). The SOSFIP leaves it to the system operator's discretion which forecast is used. The system operator currently uses a medium-high demand forecast and proposed the SOSFIP be updated to specify the system operator must use a medium demand forecast (the difference being 0.2% in 2022)

Submitters' views:

- 31. Submitters broadly supported the use of the medium demand forecast in the ERC calculation – seven submitters agreed and three did not express a view.
- 32. Four submitters agreed the SOSFIP be updated to specify the system operator must use a medium demand forecast in the ERC calculation.
- 33. Two submitters felt that the demand forecast used should not be mandated in the SOSFIP as it would inhibit the system operator from using its discretion in abnormal situations.
- 34. Four submitters did not express a view.

System operator's response:

35. The system operator agrees that the demand forecast used in the ERC calculation should be standardised as the medium forecast.
36. Consistent with the proposed treatment of gas reallocation and demand response, the system operator supports greater transparency and reduced subjectivity in the calculated demand forecast used to inform the ERCs. This is achieved by the SOSFIP specifying the level of demand forecast the system operator should use in the ERC calculation.

System operator's recommendation to the Authority:

Recommendation 4 (R4) – The system operator recommends the SOSFIP specify the medium demand forecast as the forecast to be used by the system operator in the ERC calculation.

3.5 Watch and Alert curves

37. The MartinJenkins review identified that participants and stakeholders find the two sets of risk curves (Watch and Alert status curves, and percentage curves) confusing and often ignored the Watch and Alert curves. MartinJenkins recommended rationalising the curves to one set.
38. The system operator proposed calculating and publishing only the percentage risk curves and removing the Watch and Alert curves. The watch and alert risk meter positions would be aligned with the 1 and 4 percentage risk curves respectively.

Submitters' views:

39. Contact, Genesis, Manawa, Mercury, Meridian and Nova supported rationalising the two sets of curves into one set. Two submitters did not express a view.
40. Firstgas disagreed with the proposal and suggested the system operator should instead implement a simplified version of the risk status curves and give no prominence to the percentage risk curves. Firstgas argued that the risk percentage curves were widely misunderstood because the risk quantified by the curves is highly abstract.
41. MEUG suggested the status quo was a better option because in its view the Watch and Alert curves are intuitively and conceptually better than the percentage curves and more understandable to consumers.

System operator's response:

42. The Authority and the MartinJenkins report identified that participants and stakeholders find the two sets of curves (status curves and percentage curves) confusing and often ignored the status curves. MartinJenkins recommended rationalising the curves to one set. The system operator preference is for the percentage risk curves for the reasons outlined in the consultation paper.
43. The Firstgas suggestion of a simplified set of risk status curves is outside the scope of the current consultation. The Authority may consider this as part of a wider review of the security of supply arrangements, if needed.

System operator's recommendation to the Authority:

Recommendation 5 (R5) – The system operator recommends calculating and publishing only the percentage risk curves and removing the Watch and Alert curves. The watch and alert risk meter positions would be aligned with the 1 and 4 percentage risk curves respectively.

3.6 Review of the EMP – triggers for daily security of supply reporting

44. The system operator proposed to update the increased reporting section of the EMP to make the obligations clearer. Increased (daily) reporting would only be made on the first business day the risk status has changed to Watch status. Once increased reporting has begun, to prevent it from starting and stopping frequently, it must:
- a. continue for a minimum of 5 working days or,
 - b. until hydro storage level is 100GWh above the trigger for the Watch status
45. The system operator proposed to include estimates of the time to the 4%, and Emergency risk curve from the level of storage at the time of publishing the ERCs in the daily reporting.

Submitters' views:

46. Six submitters supported the increased reporting proposal and three did not comment.
47. Firstgas thought obligations of this type should not be included in the EMP. In addition, Firstgas felt that the system operator should make daily reporting available at all times.
48. Four submitters supported the proposal to include an estimated length of time to the 4%, and Emergency risk curve and five did not comment. Nova felt the time estimates would create a misleading sense of urgency.

System operator's response:

49. The system operator does not see any reason to exclude obligations it places on itself (as opposed to third parties) in the EMP or SOSFIP.
50. Firstgas's suggestion that the system operator make daily reporting available at all times would put Transpower in breach of its terms and conditions with NZX. NZX are the only provider of the hydro data needed to provide the reporting.
51. To address Nova's concerns, the system operator will clearly indicate that this is a worst-case estimate.

System operator's recommendation to the Authority:

Recommendation 6 (R6) - The system operator recommends the increased reporting section of the EMP be updated to make the obligations clearer. Increased (daily) reporting would only be made on the first business day the risk status has changed to Watch status. Once increased reporting has begun it must:

- a. continue for a minimum of 5 working days or,
- b. until hydro storage level is 100GWh above the trigger for the Watch status

The system operator recommends estimates of the time to the 4%, and Emergency risk curve from the level of storage at the time of publishing the ERCs be included in the daily reporting.

3.7 Proactive information disclosure to the system operator

52. The system operator currently provides a list of assumptions used in its ERC assumptions document. Some of these assumptions are based on information provided by participants or best known by participants.
53. The system operator proposed to include a requirement in the SOSFIP for electricity market participants to inform the system operator of changes that may have an impact on assumptions in the ERC assumptions document. It is accepted that this will not capture gas producers who are beyond the legislative scope of the Code.

Submitters' views:

54. Two submitters supported the proposal and four did not comment.
55. Contact, MEUG and Nova questioned whether it was lawful to include third-party obligations in the SOSFIP, being a document incorporated by reference into the Code.
56. Contact and Genesis felt that participants already had an obligation to make information publicly available under Clause 13.2A of the Code. In addition, the Authority recently added a detailed set of wholesale information disclosure obligations to the Code in 2021 under clauses 13.2A to 13.2L.

System operator's response:

57. The system operator wishes to include all valuable information in the assumptions document and looking to improve the inputs into the ERC modelling it does.
58. Clauses 13.2A to 13.2L refer to information that affects market outcomes and is not directly security related. The information sought is directly impacting the ERC calculations and is not necessarily covered by Clause 13.2A to 13.2L.
59. The system operator will refer the issue of whether it was appropriate to include third-party obligations in the SOSFIP to the Authority.

System operator's recommendation to the Authority:

Recommendation 7 (R7) - The system operator recommends including a requirement in the SOSFIP for electricity market participants to inform the system operator of changes that may have an impact on assumptions in the ERC assumption document.

The Authority should determine whether such changes are more appropriate for the SOSFIP or the Code.