

2024 amendments to the System Operator Rolling Outage Plan

Decision paper

19 August 2024

Executive summary

The Electricity Authority Te Mana Hiko (Authority) wants to enable a secure and resilient, accessible, and efficient energy system that protects domestic and small business consumers and improves long-term outcomes for all consumers and New Zealand.

Consumers expect a reliable, secure electricity system that is responsive to shocks. This is why security of supply is a key priority for the Authority and we prepare for all eventualities.

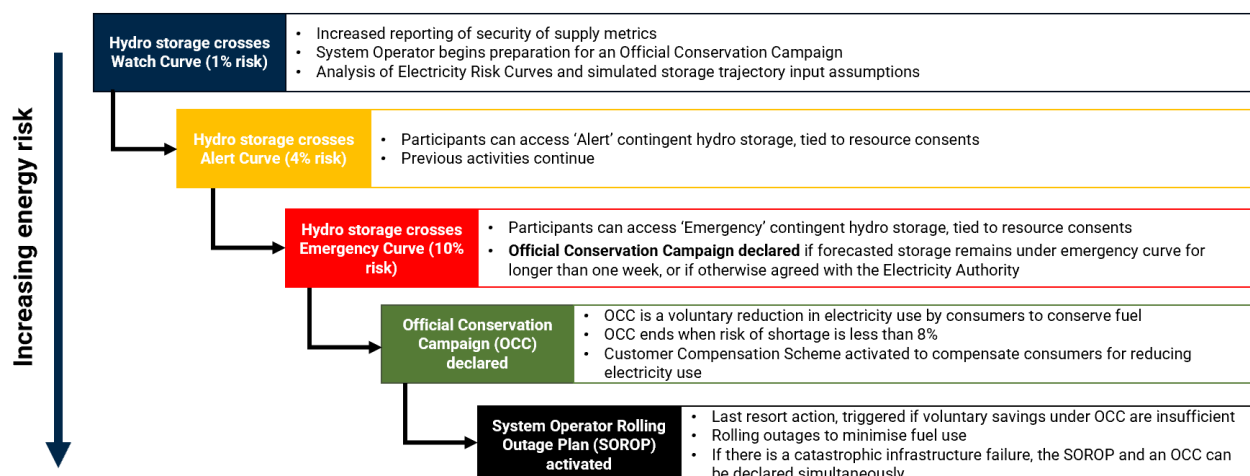
Shocks that have the potential to interrupt electricity supply for periods of time do happen. When these types of events occur, consumers need confidence that the system, and those that operate it, have plans in place to respond in a way that protects consumer’s interests. For example, large-scale weather events can take out infrastructure and extended droughts can drastically reduce electricity generation from hydro generators.

Transpower is contracted by the Authority to be the system operator. The system operator co-ordinates electricity supply and demand to make sure the lights stay on at the lowest possible cost. This includes planning to make sure consumers still can get power when supply is limited due to a rare event.

The System Operator Rolling Outage Plan (SOROP) is developed by the system operator, alongside distributors and large industrial consumers, to be used if a rare event occurs ie, a significant transmission failure or an extended period of fuel shortage for electricity generation (for example, a severe dry period resulting in very low hydro storage). It sets out how rolling outages (ie, temporary planned outages of a consumer’s supply) are conducted as an emergency response to conserve fuel and avoid unplanned outages.

A mature and comprehensive framework is in place for security of supply, including regular monitoring (primarily through the Electricity Risk Curves), along with an escalating series of actions in response to an energy shortage. These activities are guided by system operation documents (such as the Security of Supply Forecasting and Information Policy) and the Code itself.

This process is outlined in the diagram below:



The SOROP is the last resort action for managing critical energy shortages. In the case of a dry year event, hydro storage levels would need to cross the emergency risk curve and an Official Conversation Campaign (OCC) declared. For the SOROP to be activated, the system operator must then forecast that the OCC will not achieve the desired energy savings.

The system operator has not needed to use rolling outages since the electricity market began in 1996 and the SOROP has not been activated since originally put in place in 2010. The June 2024 Northland transmission outage did not result in rolling outages due to the efforts of distributors and voluntary demand reduction from consumers.

Hydro storage in New Zealand is currently lower than typical for this time of year due to low-hydro inflows and high demand for generation due to limited gas supplies. Despite lower storage levels, it is important to note that hydro storage has not yet crossed the Watch Curve of the Electricity Risk Curve. The Authority and the system operator are monitoring hydro-storage levels closely and are progressing a range of initiatives to minimise any impact on consumers.

Current low storage levels and recent interruptions to supply emphasises the need for effective plans and procedures in place to maintain security of supply should a more significant event occur.

The aim of the SOROP is to minimise impacts on individual consumers, while at the same time meeting the energy saving targets. This is achieved by ensuring that the length of time a group of consumers is without power is as short as possible.

The SOROP provides for distributors to work with retailers and consumers to minimise the impact of planned outages – particularly on consumer groups with specific needs such as medically dependent consumers. The Authority expects that the needs of vulnerable consumers would be included in Participant Rolling Outage Plans. We know that distributors are best placed to assess the needs of their local communities and plan their rolling outages accordingly. This approach is an extension of the communication work developed and practiced by industry through the annual pan-industry exercises.

Rolling outages have historically been implemented through the managed disconnection of distribution feeders. This disconnects small groups of consumers simultaneously, but those consumers connected to the same feeder as a critical service (eg, a hospital) may avoid disconnection.

As technology improves, we expect innovation to unlock the ability to manage rolling outages to a much finer degree of control, potentially using the ability to remotely manage individual consumer connections through their smart meters. This would ensure a more equitable distribution of rolling outages and enable the management the needs of medically dependant and vulnerable consumers. This may be a number of years away, but we encourage industry participants to continue innovating for the long-term benefit of consumers.

The Authority has approved changes to the SOROP under Part 7 of the Code. The system operator conducted a review of the SOROP in 2022 and in May 2024 proposed changes to improve the plan and bolster it to respond to increasing challenges faced by the electricity system. The changes to the SOROP include:

- more specific thresholds for declaration of a supply shortage
- inputs used to determine a supply shortage declaration have been updated to match the change to the thresholds
- supply shortage declarations have been split into declarations for shortages of electricity supply and shortages of transmission capacity

- energy savings targets are now aligned with the objective to avoid extended periods of unplanned outages over the 35 days following the start of rolling outages, and energy savings targets are updated weekly on a rolling basis
- more specific requirements for participant rolling outage plans, including:
 - provision for a rolling weekly planned outage list that must be provided to the system operator and updated daily.
 - provision of a weekly half-hourly Grid Exit Point level demand forecast from specified participants.
 - improved co-ordination with the system operator.

The Authority considers the proposal supports the Authority's main statutory objective to *"promote competition in, reliable supply by, and the efficient operation of, the electricity industry for the long-term benefit of consumers"*.

The amended SOROP will come into effect on 1 September 2024.

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1. Purpose

- 1.1. This paper sets out the Electricity Authority Te Mana Hiko's (Authority) decision to accept the system operator's amendments to the System Operator Rolling Outage Plan (SOROP) and to give the amendment legal effect under Part 7 of the Electricity Industry Participation Code 2010 (the Code).

2. Background

- 2.1. The Authority is working to ensure consumers have trust and confidence in their energy supply. The electricity system needs to be reliable, secure, and responsive to shocks.
- 2.2. As high-levels renewable electricity generation are commissioned and enter operation, the ways in which we manage security of supply will need to evolve. This is why the Authority is actively undertaking work to ensure near term security of supply, through the [Potential Solutions for Peak Electricity Capacity](#) workstream, and longer-term work through the [Future Security and Resilience programme](#).
- 2.3. Transpower is contracted by the Authority to be the system operator. The system operator co-ordinates electricity supply and demand to make sure the lights stay on at the lowest possible cost. This includes planning to make sure consumers still can get power when supply is limited due to a rare event.
- 2.4. The SOROP is developed by the system operator to be used in the case of such an event ie, a significant transmission failure or a severe extended dry period resulting in very low hydro storage.
- 2.5. The [Northland transmission outage](#) in June 2024 did not result in rolling outages due to the efforts of distributors and voluntary demand reduction from consumers.
- 2.6. Current hydro storage levels are lower typical for this time of the year. Although storage is still above the Watch Curve of the Electricity Risk Curves, the Authority is watching the situation closely and is progressing a range of initiatives to minimise any impact on consumers, including working with the system operator to release contingent hydro storage.
- 2.7. Low hydro-inflows and infrastructure disruptions emphasise the need for effective plans and procedures in place to maintain security of supply should more significant measures be required.

The SOROP forms part of the framework for managing security of supply

- 2.8. The SOROP is a system operation document and is incorporated by reference into the Code by the Authority. The preparation and publication of this document is a requirement of Part 9 of the Code. The current version came into effect in 2016.
- 2.9. A mature and comprehensive framework is in place for security of supply, including regular monitoring (primarily through the Electricity Risk Curves), along with an escalating series of actions in response to an energy shortage. These activities are guided by system operation documents (such as the Security of Supply Forecasting and Information Policy) and the Code itself.

- 2.10. The SOROP is the last resort action for managing critical energy shortages. The SOROP provides for the management and coordination of planned rolling outages by the system operator as an emergency measure during energy shortages. Rolling outages are used to prevent future unplanned outages by reducing load to conserve fuel for electricity generation.
- 2.11. For example, rolling outages may be used in circumstances where there is a significant transmission infrastructure failure for an extended period (a shortage of transmission capacity), or a severe dry period (a shortage of electricity supply) meant that an Official Conservation Campaign does not achieve the necessary energy savings.
- 2.12. The SOROP includes the requirement for specified participants¹ to develop Participant Rolling Outage Plans (PROPS). PROPS include information about how rolling outages would be conducted and monitored.
- 2.13. All consumers benefit from well planned and coordinated rolling outages. Good planning and coordination helps to mitigate periods of no or low power supply for all consumers, but particularly for those who have additional needs (such as medically dependent consumers). It also helps consumers who operate specialised equipment (such as manufacturers) to plan their operations around the rolling outages.
- 2.14. The system operator has not needed to use rolling outages for many years and, to date, the situation has not occurred that would have required the system operator to use the current SOROP.

Technology is evolving, which may enable more targeted rolling outages in future

- 2.15. Rolling outages have historically been implemented through the managed disconnection of distribution feeders. This disconnects small groups of consumers simultaneously, but those consumers connected to the same feeder as a critical service (eg, a hospital) may avoid disconnection.
- 2.16. As technology improves, we would expect innovation to unlock the ability to manage rolling outages to a much finer degree of control, perhaps using the ability to remotely manage individual consumer connections through the smart meters. This would ensure a more equitable distribution of rolling outages and enable the management of the needs of medically dependant and vulnerable consumers. This may be a number of years away, but we encourage industry participants to continue innovating for the long-term benefit of consumers.

Process for considering amendments to system operation documents

- 2.17. As a system operation document, Part 7 of the Code sets out requirements and process to be followed when amending the SOROP.
- 2.18. On 1 August 2023, new requirements for changes to system operation documents came into force. These new requirements consolidated and aligned the provisions across the Code and are set out in clauses 7.13 to 7.22.

¹ Includes electricity distribution businesses and direct connect participants but not retailers and line owners (other than distributors).

- 2.19. The Authority is now required to give consent to the system operator before consultation on a proposal under clause 7.16. The purpose of this consent is to identify any issues with the material or planned consultation process that may prevent the proposal from being given legal effect as part of the Code by the Authority under the Electricity Industry Act 2010 (the Act).
- 2.20. Clause 7.21 sets out the process for approving proposed amendments to a system operation document. Subclause 7.21(1) sets out requirements for the content of a report the system operator must provide to the Authority after consultation.
- 2.21. Subclause 7.21(2) sets out what the Authority may do after receiving the report. The Authority may:
- (a) approve the proposed amendments
 - (b) require further consultation before resubmitting the proposed amendments for approval
 - (c) decline to approve the proposed amendments.
- 2.22. The Code does not explicitly set out any matters the Authority must consider in deciding whether to approve a proposal. The Authority is therefore guided by its main statutory objective, which is “*to promote competition in, reliable supply by, and the efficient operation of the electricity industry for the long-term benefit of consumers.*”² .
- 2.23. If the Authority approves an amendment to the SOROP, it must issue a notice in accordance with section 131B of the Act to give the amendment legal effect.

3. Review of the SOROP

The system operator has identified several issues with the SOROP

- 3.1. In 2022, the system operator conducted a review, including industry engagement, which identified a range of areas where the SOROP could be refreshed and improved. While the SOROP was due for a review (having been in place since 2016), the system operator also noted the review was driven, in part, due to heightened winter energy risk from increasing demand.³
- 3.2. From its review, the system operator identified the following key issues:
- (a) the determination of when a declaration of a supply shortage is to be made is not well specified and not able to be implemented without subjectivity
 - (b) the timeframe for notification of declaration of a supply shortage is lengthy and may lead to a requirement for larger energy savings targets than would otherwise be needed
 - (c) the thresholds for declaration of a supply shortage are not set out separately for each type of supply shortage (transmission and supply)

² The Authority also has an additional objective to “*protect the interests of domestic consumers and small business consumers in relation to the supply of electricity to those consumers*”, but this applies only to the Authority’s activities in relation to the dealings of industry participants with domestic consumers and small business consumers

³ Section 3.1, SOROP Proposal Paper, Transpower May 2024.

- (d) both the objectives and calculations for energy savings targets are not defined
 - (e) the requirements for PROPs are inadequate to allow the System Operator to closely coordinate with participants during supply shortages.
- 3.3. The system operator view is that these issues undermine the extent to which the SOROP can support the reliable supply by, and the efficient operation of, the electricity industry for the long-term benefit of consumers.

Consultation

- 3.4. In January 2024, the Authority gave consent to the system operator to consult on a proposal to amend SOROP, under clause 7.16 of the Code.
- 3.5. On 7 February 2024, the system operator released a consultation document setting out the identified issues, and proposed amendments to the SOROP. Consultation was open for four weeks. A cross-submission process was held for two weeks in March 2024.
- 3.6. In its consultation paper, the system operator proposed several amendments to the SOROP:
- (a) separating supply shortages declarations into two types of declarations (shortages of electricity supply and shortages of transmission capacity), making the thresholds for declaration of a supply shortage more specific, and updating the inputs used to match the new thresholds
 - (b) energy savings targets are proposed to be aligned with the SOROP's objective to avoid extended periods of unplanned outages over the 35 days following the start of rolling outages and are updated weekly
 - (c) more specific requirements for rolling outage plans, including:
 - Provision for a rolling weekly planned outage list
 - Provision of a weekly half-hourly GXP level demand forecast from specified participants
 - Improved co-ordination with the system operator.
 - (d) timeframes for declaration of supply shortage and notification of savings targets have been reduced so that initial savings targets will be lower.
- 3.7. Further information on the identified issues and proposals that were consulted on can be found in the system operator's [consultation document](#).

Key themes from submissions

- 3.8. The system operator received 10 submissions and five cross-submissions. Eight of these submissions (and three cross-submissions) were from electricity distributors and two submissions (and two cross-submissions) from consumers/consumer groups.
- 3.9. In general, submitters were supportive of updating the SOROP and supported most of the system operator's proposals. The system operator stated that where there was not support for the proposals, the submitters tended to seek greater clarity on the proposal.

- 3.10. An overview of the key themes is provided in section 4.1 of the system operator’s proposal to the Authority (attached as appendix A). A detailed summary of submissions can be found in appendices 1 and 2 of the proposal.
- 3.11. Submitter feedback has informed the system operator’s final proposal.

4. Decision

The Authority has received the system operator’s final proposal

- 4.1. On 31 May 2024, the Authority received the final proposal to amend the SOROP from the system operator. Minor changes were made in response to submitter feedback between the version consulted on and the final version. The final proposal:
- (a) Makes the thresholds for declaration of a supply shortage more specific
 - (b) Inputs used to determine a supply shortage declaration are updated to match the change to the thresholds
 - (c) Supply shortage declarations are separated into declarations for shortages of electricity supply and shortages of transmission capacity
 - (d) Energy savings targets are aligned with the objective to avoid extended periods of unplanned outages over the 35 days following the start of rolling outages and are updated weekly, on a rolling basis
 - (e) More specific requirements for PROPs are added, including:
 - Provision for a rolling weekly planned outage list
 - Provision of a weekly half-hourly GXP level demand forecast from specified participants
 - Improved co-ordination with the system operator.
- 4.2. The Authority considers this proposal provides sufficient information on the proposal, process, and consultation to meet the requirements of subclause 7.21(1) of the Code which set out the content of the report to the Authority.

The Authority approves the proposed amendments to the SOROP

- 4.3. The Authority has a long-term plan to ensure security of supply in New Zealand’s electricity system, so consumers and industry can have confidence it will deliver what they need and have the right information and tools to make good decisions about their energy use, now and into the future.
- 4.4. This is being supported by a significant work programme to improve the framework in place for security of supply. The SOROP is just one of several components in this framework – and one of the last mechanisms to be activated in response to an event. We are also making complementary changes to other mechanisms:
- (a) Improvements to the Electricity Risk Curves (ERCs) to ensure that these accurately reflect hydro risk, and in turn, have accurate triggers for declaring an Official Conservation Campaign (OCC). An OCC is a prerequisite before an electricity supply shortage can be declared under the SOROP

- (b) Increasing access to thermal fuel information by the Authority and system operator. This will inform the Authority's monitoring role, including ERC validation. It is also intended to improve to the system operator's access to thermal fuel information.
 - (c) The [Northland Inquiry](#) will help to inform how we improve management of events that could lead to a Transmission Capacity shortage under the SOROP.
- 4.5. The Authority has considered the SOROP proposal in the context of this broader work programme, and considers it is well aligned with our desired outcomes.

Consistency with the Authority's main statutory objective

- 4.6. The SOROP primarily engages the reliable supply and efficient operation limbs of the Authority's main statutory objective.
- 4.7. Reducing the uncertainty around triggers for rolling outages, determining savings targets and obligations on specified participants will improve the effectiveness of the SOROP. This helps to ensure that robust arrangements for management of high-risk, very low likelihood events are in place, supporting the reliable supply limb.
- 4.8. It also supports the efficient operation of the electricity industry by putting in place clear rules and obligations, reducing the system operator's need to apply subjective judgement. Clearer obligations and triggers will also reduce the transaction costs for the system operator and specified participants if a supply shortage is declared.
- 4.9. There will be some costs for specified participants in updating their PROPs in response to the new requirements – however this is unlikely to be material compared to the benefits of the proposal.
- 4.10. The proposal does not materially relate to the competition limb of the Authority's statutory purpose.
- 4.11. The Authority's additional objective with regards to consumers is not engaged, as the proposal does not relate to dealings between participants and domestic and small business consumers.

Further consultation is not required

- 4.12. The Authority is satisfied that the proposal has had adequate consultation, and that further consultation is not required. The system operator noted three broad types of changes it made post-consultation (page 9 of the proposal document):
- (a) Drafting tidy-ups
 - (b) Making the requirements in the SOROP clearer
 - (c) Further limiting the scope of need for the system operator to make subjective judgements in the application of the SOROP.
- 4.13. The Authority agrees with this classification and considers these changes are consistent with the intent of the proposals consulted on, with changes made to improve the clarity of obligations or to revert changes back to what is in the existing SOROP.

Incorporation by reference

- 4.14. The Authority considers the requirements of section 131B of the Act are met enabling the Authority to give legal effect to the amendments as part of the Code.
- 4.15. The amended SOROP represents an enhancement to the existing framework for the SOROP and as the same general character as the original material, it meets the requirements of the Act.
- 4.16. The Authority has issued a *Gazette* notice stating that the amended SOROP is given legal effect as part of the Code.

5. Next steps

- 5.1. The amended SOROP will come into force on 1 September 2024.

6. Attachments

- 6.1. The following appendices are attached to this paper:

Appendix A System Operator Rolling Outage Plan proposal document

Appendix B Amended System Operator Rolling Outage Plan

Appendix A System Operator Rolling Outage Plan Proposal Document

System Operator Rolling Outage Plan Review

Proposal – May 2024

Transpower New Zealand Limited

Keeping the energy flowing



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IMPORTANT

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1 Purpose

1. This paper presents our proposals to amend the System Operator Rolling Outage Plan (**SOROP**) that is incorporated by reference in the Electricity Industry Participant Code 2010 (**the Code**) under clause 9.3.¹
2. The paper explains the process undertaken for consultation on the draft proposals, key feedback received, our consideration of that feedback, and the changes we have made to our proposals.
3. The proposal paper is accompanied by:
 - a summary of submissions and response document (Appendices 1 and 2);
 - the proposed new SOROP with the proposed changes tracked (Appendix 3); and
 - the proposed new SOROP in Word format.

2 Background: What is the SOROP

4. The SOROP is one of our key security of supply planning and policy documents.
5. The SOROP is intended to provide for the management and co-ordination of planned outages as an emergency measure during energy shortages (clause 9.1 of the Code/clause 1.2 of the SOROP) where there is an extended period of capacity or energy shortages, such as might be possible in a severe dry period.
6. The SOROP outlines when and how rolling outages can be triggered, including how electricity distribution businesses (**EDBs**) and direct connects would initiate rolling outages through their Participant Rolling Outage Plans (**PROPs**). Rolling outages can be used to help avoid large unplanned outages in the future by reducing load to conserve fuel, including water held in hydro storage lakes.
7. The circumstances that would trigger the activation of the plan have not been observed in many years, and not since the SOROP was originally developed in 2010.

¹ <https://static.transpower.co.nz/public/bulk-upload/documents/system%20operator%20rolling%20outage%20plan.pdf?VersionId=kOJ6w7yYGXU4cna.fTDEn0Rwo4MibfuW>

3 Why we undertook the review of SOROP

8. The SOROP is one of our key security of supply planning and policy documents. It was incorporated into the Code effective from 19 June 2016, replacing the plan issued by the Electricity Commission on 30 September 2010.
9. The SOROP has not been amended or updated since that time which is nearly 8 years ago.
10. We conducted a desktop exercise with some industry participants in 2022 that identified areas where the plan could be refreshed and improved. As a result, we committed to review the SOROP in 2023/24² with a focus on:
 - the trigger for declaring a supply shortage;
 - what sets the savings targets;
 - the aim of those savings targets; and
 - the conditions for revoking the declaration of a supply shortage.
11. We also committed that we would look at the information participants should provide in their PROPs with the intention to make the requirements clearer.

3.1 Heightened winter energy risk

12. Our view on the importance of reviewing the SOROP is also shaped, in part, by heightened winter energy risk.
13. Winter-peak demand is increasing, and there is an increasingly tight supply-demand balance to meet current energy needs.
14. We have been fortunate to have healthy levels of rainfall and hydro storage during the last two winters to offset constraints on thermal generation availability, including material unplanned outages in winter 2023 at Huntly and Stratford power stations. Had these coincided with drier conditions the outcome for households, businesses, and communities could have been very different. Unplanned outages and retirements of existing ageing thermal plant heightens the risk to security of supply.
15. Based on our review and consultation on the SOROP, we do not consider the current SOROP is fit for purpose.
16. We consider that there is significant uncertainty around how to determine when to declare a supply shortage, and the size of the energy savings targets, which hampers the extent to which the SOROP can support the reliable supply by, and the efficient operation of, the electricity industry for the long-term benefit of consumers.
17. We also consider that the potential need for rolling outages would be best met through clearer rules set out in advance which minimise the need for us, in our role as the system operator, to apply subjective or potentially arbitrary judgement during a potential outage event.

² [News from Transpower, Reviewing the System Operator Rolling Outage Plan \(SOROP\) - June 2023](#)

3.2 Requirements for amendment of the SOROP

18. We must submit any proposed amendments to the SOROP to the Electricity Authority (**Authority**) for approval (clause 7.13 of the Code). The requirements for proposals to amend or replace system operation documents are contained in clauses 7.13-7.22 of the Code.
19. The Authority must consent to the consultation before the system operator consults on a proposal to amend a system operation document (clause 7.16).
20. We are required to consult “with affected participants or persons that represent the interests of those persons likely to be affected by the proposed amendment” before submitting the proposed amendments to the Authority (clause 7.20 of the Code).
21. Before the Authority can amend the Code to incorporate the proposed amendments to the SOROP, it will need to consult, unless it is satisfied on reasonable grounds that: “(a) the nature of the amendment is technical and non-controversial; or (b) there is widespread support for the amendment among the people likely to be affected by it; or (c) there has been adequate prior consultation (for instance, by or through an advisory group) so that all relevant views have been considered” (section 39 of the Electricity Industry Act).

4 Consultation process

22. We received the Authority’s consent to consult in January 2024, and undertook consultation in February-March 2024. The consultation period was 4 weeks, followed by a 2-week period for cross-submissions. A late submission was received when cross-submissions were due, so we provided another week for submitters/cross-submitters to respond to the late submission. No additional cross-submissions were received in response.
23. Transpower received 10 submissions (and 5 cross-submissions): 8 submissions (and 3 cross-submissions) from electricity distributors and 2 submissions (and 2 cross-submissions) from consumers/consumer groups. The submissions/cross-submissions are available on our website.³ We thank all submitters for their participation in the consultation process and appreciate the feedback we received.

Electricity distributors	Consumers/consumer groups
Alpine Energy	MEUG (submission + x-submission)
Clarus (late submission/20 March)	NZ Steel (submission + x-submission)
Northpower (late submission/14 March)	
Orion	
Powerco (x-submission only)	
Top Energy	
Vector (submission + x-submission)	
WEL Networks	
Wellington Electricity (WE*) (submission + x-submission)	

4.1 Summary of the main submission points and themes

24. Submissions were supportive of updating the SOROP and generally supported our specific drafting proposals. We agree with MEUG (cross-submission): “It is encouraging to see support from several EDBs and large direct connects for the System Operator’s proposed amendments to the SOROP.” For example:
- Alpine: “We support the intent of the consultation and the proposed changes.”
 - MEUG: “We support the System Operator’s drivers for this work – to simplify and update the System Operator Rolling Outage Plan (SOROP) and to clarify the obligations on participants.”
 - NZ Steel: “We understand the need to have a SOROP support mechanism for the conservation campaign regime and other situations that may arise. We support the initiative to update the current PROP mechanism and in general consider most of the improvements proposed are sensible.”

³ <https://www.transpower.co.nz/system-operator/information-industry/invitation-comment/SOROP>

- Orion: “We agree that the electricity industry needs to be prepared in case rolling outages are ever required.”
 - Vector: “Vector agrees the SOROP is due for a review, and we are generally supportive of most of the changes proposed in the consultation paper.”
25. The areas where there wasn’t full support for our proposals were largely due to submitters wanting greater clarity around the approach we would adopt. Where there wasn’t consensus there was still majority support.

4.1.1 The main concerns that were raised

26. The main areas where there was some disagreement, or some of the support was qualified (partial), consist of the following:
- Question 1: WE* “... disagree with the assessment regarding the change in notification timeframes and the responsibility for EDBs to provide 30-min GXP demand forecasts which we are currently not funded to produce.” (Alpine Energy, Orion, Top Energy & WEL Network supported our proposal.)
 - Question 2: WE* consider “Some of Transpower’s proposed amendments are not practical to implement (the notification times are too short) and will add costs that networks aren’t funded to provide (half hour GXP demand forecasts).”
 - Question 8: WE* disagreed (MEUG, NZ Steel, Orion, Top Energy & WEL Network agreed) with the proposal to reduce the notification period from 14 days to 7.
 - Question 9: Vector disagreed (Orion, Top Energy, WEL Network & WE* agreed) with the proposal for calculation of savings targets. Various other submissions sought clarification on how the calculations would be made.
 - Question 13: WE* disagreed with the GXP level demand forecast (Top Energy and WEL agreed with the proposal).
 - Question 14: Orion disagreed with the priority order in the Table in 6.8 of the SOROP for disconnection of demand (Top Energy, WEL Network & WE* agreed it should remain unchanged).
 - Question 17: Vector disagreed with providing for variation of savings targets based on economic grounds.
27. Stakeholders also proposed a range of additional amendments e.g. Question 3 Alpine Energy is “... seeking clarity from the system operator on what they consider an “extended period” to be, given the multiple uses of the term across the proposed changes.” Clarus provided an extensive range of drafting comments (see Appendix).

4.2 We have considered the feedback and made changes

28. We have carefully considered the feedback received in submissions and cross-submissions.
29. We have made several changes in response to stakeholder feedback which largely fall into the categories of:

- (i) drafting tidy-ups;
 - (ii) making the requirements in the SOROP clearer; and
 - (iii) further limiting the scope or need for the system operator to make subjective judgements in the application of the SOROP e.g. we have removed discretion for the system operator to agree to variations in savings targets on economic grounds and provided better clarity around the operational basis on which variations can be sought.
30. In addition, we are now proposing that the notification periods will stay at 14 days for the advanced notice on declaration of a supply shortage (to align with the EDB Default Distribution Agreement (**DDA**) for planned outages) and 9 days for notice on savings targets (new or revised targets). We had proposed to reduce these to 7 days in our consultation paper.
31. We acknowledge the merit of the shortened notice periods is a matter of judgement and, as WE* commented, there is no guarantee that a shorter notice period would translate to a lower savings target but could result in additional negative impact to customers. We may review any opportunities to shorten this timeframe in the future.

5 Our proposals for amending SOROP

32. We propose a number of significant changes to the SOROP, compared to the 2016 version:
- The thresholds for declaration of a supply shortage are more specific.
 - Inputs used to determine a supply shortage declaration are updated to match the change to the thresholds.
 - Supply shortage declarations are split into declarations for shortages of electricity supply and shortages of transmission capacity.
 - Energy savings targets are aligned with the objective to avoid extended periods of unplanned outages over the next 35 days and are updated weekly, on a rolling basis.
 - More specific requirements for rolling outage plans are added, including:
 - Provision for a rolling weekly planned outage list.
 - Provision of a weekly half-hourly GXP level demand forecast from specified participants.
 - Improved co-ordination with the system operator.
33. We consider that the nature of the proposals are such that the amendments are technical and non-controversial; and/or there is widespread support for the amendment among the people likely to be affected by it (section 39(3)(a) and (b) of the Electricity Industry Act).
34. We also consider that the consultation we have undertaken is such that it is open for the Authority to decide “there has been adequate prior consultation (for instance, by or through an advisory group) so that all relevant views have been considered” (section 39(3)(c) of the Electricity Industry Act).

5.1 Main changes we are proposing

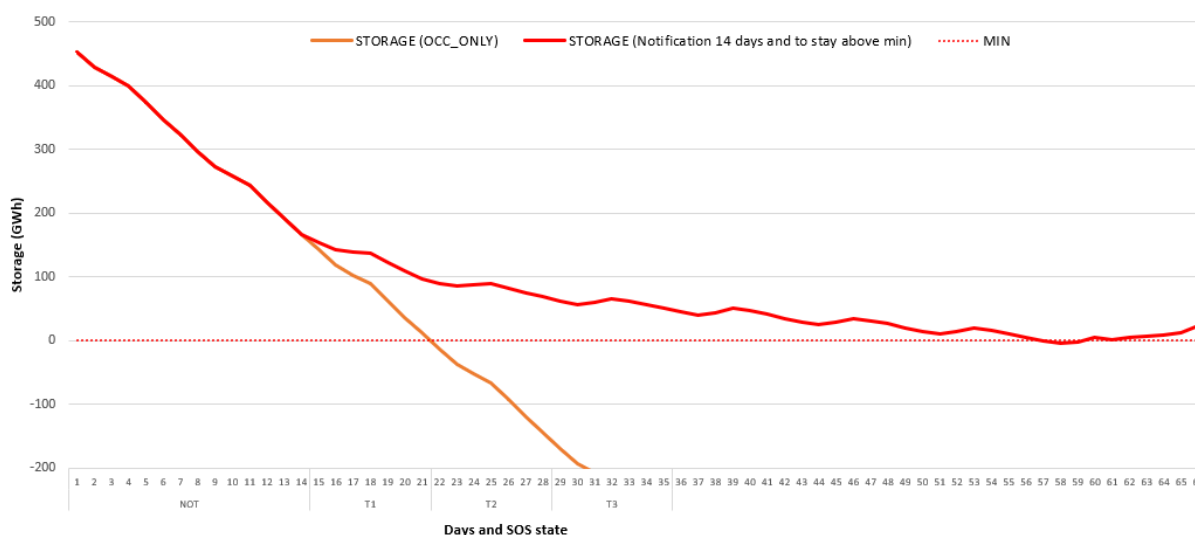
5.1.1 Thresholds for supply shortage declarations

35. We propose splitting a declaration of a supply shortage into a declaration for a shortage of electricity supply and a declaration for a shortage of transmission capacity, with slightly different triggers for each.
36. A shortage of transmission capacity could arise with little or no warning. All that is required is for the modelling to show an extended period of unplanned outages at any GXP within the next 35 days.
37. A shortage of electricity supply will be a developing event with some warning time. In this case the System Operator needs to have first commenced an official conservation campaign (**OCC**) in order that the voluntary savings effect can be seen, and its effect measured before resorting to compulsory cuts to supply.
38. Once the OCC has commenced and the modelling shows an extended periods of unplanned outages at any GXP within the next 35 days then the System Operator will declare a supply shortage for a shortage of electricity supply.
39. While the current SOROP could permit these separate declarations it is not explicit and the triggers for each are not specified.

40. One of the key reasons for changing the triggers for the current SOROP is to be specific and clear around when a supply shortage would be declared. The results from application of the triggers need to be consistent and repeatable, not subjective. Our proposal is specific and uses modelling to assess when forecast demand is expected to exceed forecast supply with inputs as specified in clause 3.6.
41. We propose the declaration of a supply shortage be made when either:
- i. an official conservation campaign has commenced; and
 - ii. an extended period of unplanned **outages** at any **GXP** is forecast to occur within the next 35 days under current modelling forecasts. This is a shortage of electricity supply.
- or
- iii. if an extended period of unplanned **outages** at any **GXP** is forecast to occur within the next 35 days under current modelling forecasts. This is a shortage of capacity.
42. The modelling looks out 35 days to ensure we are looking out well beyond any notification timeframe and far enough to see any extended period of unplanned outages beyond when an official conservation campaign may commence. We tested a 28-day timeframe and our modelling suggested this may be too short a timeframe to see developing events. 35 days led to better visibility.
43. We propose to update the inputs used to determine to a supply shortage declaration to accommodate the methodology outlined for declaration of a supply shortage. At a minimum, the inputs need to run out for 35 days. We propose using hydro inflows forecasts for the next five weeks assuming minimal inflows (1 percentile daily inflows) beyond that in the next seven days forecast.
44. That is, use any forecast rain and resulting inflows for the next seven days, and beyond that use worse case assumptions of 1 percentile inflows for each week. The proposal allows for a worst-case scenario, should it eventuate. This compares with the current methodology of using past hydro inflow sequences, which are unlikely to be worst case or representative of the current situation.
45. We propose that:
- forecast generation will be used for wind, solar, geothermal, thermal, and run of river using weather and climate forecasts. This better accounts for increasing quantities of wind and solar generation;
 - expected generation availability will be based on the planned outage co-ordination process information; and
 - a 35-day demand forecast will be used. This forecast will be adjusted to allow for any expected decrease in demand if an official conservation campaign or commercial arrangements are expected to have reduced some demand (supply shortage due to shortage of electricity supply).
46. The change in clause 3.7 from deficit to shortfall aligns with definitions under real time pricing.

5.1.2 Directions

47. Energy savings targets are aligned with the declaration of a supply shortage and are set to avoid extended periods of unplanned outages at any GXP within the next 35 days. That is, our modelling will determine what level of savings are required, allowing for the notification timeframe before savings start.
48. The graph below shows how this would work:



49. In this example without savings, hydro storage falls to zero around day 22, this is represented by the orange line. Theoretically, this is the point at which extended periods of unplanned outages would occur as supply is insufficient to meet demand. With savings applying from day 14, represented by the red line, extended periods of unplanned outages do not occur as hydro storage is not zero. Note that storage continues to decline before eventually picking up again. The level of savings is calculated for the red line trajectory using our modelling.
50. We propose that energy savings targets would be based on the System Operator's forecast of specified participants' consumption for the next 35 days, not on the equivalent period from the previous year. This change is to allow for any step changes in participant demand in the previous year. With increased electrification we need to provide for changes in demand. For example, a 10% reduction compared to last year would require a larger actual reduction in load in areas with higher demand growth and vice-versa.
51. As we propose using a 35-day forecast of specified participants electricity consumption for setting savings targets rather than the equivalent period from last year we consider that participants should be provided the opportunity to provide feedback on that forecast if they have information that suggests it may be inaccurate. Specified participants may provide feedback by email to the System Operator on their 35-day forecast of electricity consumption within 48 hours of receipt of any demand forecast if they believe the forecast is inaccurate.
52. Savings targets may be amended if participant feedback indicates a need to amend savings for that participant.
53. Energy savings targets are to be updated weekly, on a rolling basis.
54. The System Operator will generally set the same energy savings target in percentage terms for all specified participants in the affected region.

5.1.3 Criteria, methodologies and principles to be provided for in PROPs

55. We are proposing that specified participants, upon notification of their savings targets, must provide a rolling seven-day planned outage list, updated daily. The list is to include daily outage and restoration times, and half hourly daily demand forecast information for each GXP.
56. The aim of this is twofold:
- to assist co-ordination of the rolling outages. Rather than having over 30 different organisations undertaking rolling outages independently which may lead to undesirable outcomes for system security it would be better these rolling outages be reviewed and co-ordinated by the System Operator. Some PORPs already have this requirement, but it is not in all plans. Examples are below:

Schedules of estimated load shedding, restoration times and quantities are to be forwarded to the Security Coordinator seven days before the planned outage.

will provide the System Operator with daily, rolling week-ahead forecast of half-hourly load at each GXP, taking into account the impact of the planned rolling outages.

- Improve forecast and schedule information being sent to the market and used in security assessment. If GXP demand information includes changes with rolling outages being implemented, then the schedules being published to the market will be more accurate allowing for market co-ordination and System Operator assessment of system security impacts.
57. The system operator may stipulate restrictions on the planned start or end times of rolling outages, should they need to be changed. If the system security assessment shows adverse effects from any of the proposed rolling outages, then the System Operator would wish to change those rolling outage times to improve the system security outcomes.

5.1.4 Communications

58. All contact details requirements are proposed to be combined under one clause. All PROPs are proposed to include contact information for the System Operator. This proposal is just to reduce the areas where contact information is required and condense into one clause and ensure participants have System Operator contact information, especially as this may be required to co-ordinate the start and end times for rolling outages.
59. Specified participants must redact contact information in their plans before publishing on their website but must include this information in the version sent to the System Operator for approval. This is merely for clarification and to ensure that PROPs sent to the System Operator for approval have full contact information.
60. We have added a proposal that the System Operator may request additional information to monitor specified participants performance against savings targets. This is just to ensure that if any additional information is found to be required to assess performance, then it can be.

5.1.5 Prioritisation of demand to be disconnected by distributors

61. Transpower has not proposed changes to the table in clause 6.8 of the priority order in which each distributor should disconnect demand on its network for rolling outages.
62. The table is a guide only and based on information contained in section 13 of the National Civil Defence Emergency Management Plan 2015. Transpower does not instruct which loads must be disconnected and does not consider, in its role as System Operator, that it has any particular advantage over electricity distributors in making judgment about who should get disconnected first.
63. Distributors can and should make pragmatic decisions about disconnection based on their particular circumstances and knowledge of local communities.
64. Based on our understanding of the Authority's interpretation of its statutory objective,⁴ Transpower, in its role as System Operator, does not have "dealings ... with domestic consumers and small business consumers". Nevertheless, the Authority's new "consumer protection" objective may impact stakeholder views on this matter, including how distributors administer outages.
65. We are proposing to add clarity that distributors are not required to provide feeder level information and information on automatic under-frequency load shedding (AUFLS) and interruptible load is not required. This information is not required by the System Operator from PROPs.
66. We haven't proposed any change to the requirement to provide information on the arrangements in place between the distributor and retailers for identifying and managing health and safety issues affecting consumers on the distributor's network. There are various arrangements between parties around who holds this information and who undertakes various notification activities.

5.1.6 Energy savings targets for specified participants

67. We have proposed removing the requirements for directly connected parties to provide a full or partial information plan with their participant rolling outage plan.
68. Full information plans may have been used to set different savings levels for directly connected parties compared to electricity distributors within the same affected region. However, during a developing event whether different savings targets should be set is best based on information at the time rather than communicated through a participant rolling outage plan that may be a couple of years old.
69. The provision to provide feedback on forecast demand (used to set savings targets) is in the proposed clause 4.1(b) while the provision to provide feedback on savings targets is in the proposed clause 4.2(d).
70. Providing a full or partial information plan thus has no relevance and only creates an unnecessary administrative overhead, and for this reason we propose deleting this requirement.

⁴ <https://www.ea.govt.nz/projects/all/distribution-pricing/consultation/targeted-reform-of-distribution-pricing/>

71. We have proposed a clarification that all specified participants within a region are likely to be set the same energy savings targets in percentage terms, notwithstanding the provision for the system operator to amend savings targets should there be a circumstance that justifies it.



6 Regulatory statement for the proposed amendments

6.1 Objectives of the proposed amendment

72. The objective of the proposed amendment is to ensure the SOROP remains fit for purpose in its intended role to provide for the management and co-ordination of planned outages as an emergency measure during energy shortages (clause 9.1 of the Code/clause 1.2 of the SOROP) where there is an extended period of capacity or energy shortages, such as might be possible in a severe dry winter.
73. The proposal ensures a robust set of SOROP requirements which will:
 - address the significant uncertainty around how to determine when to declare a supply shortage, and the size of the energy savings targets; and
 - provide clear rules set out in advance and which minimise the need for use, in our role as the system operator, to apply subjective or potentially arbitrary judgement during a potential outage event.

6.2 The proposed amendments

74. The drafting of the proposed amendments are shown in the track-change version of the SOROP included Appendix 3 of this proposal paper.

6.3 The proposed amendment's benefits are expected to outweigh the costs

75. Assessing the effect of proposed amendments is complex and not easily quantifiable. We consider that a full quantitative analysis of the costs and benefits of the proposal is not practical in this case.
76. We have therefore largely assessed the benefits of our proposed amendments relative to the status quo on a qualitative basis, at both a macro-level assessing the heightened risk of outages, and at a micro-level assessing each component of the proposal. This is consistent with the approach we adopted when we developed the 2016 version of the SOROP. The analysis suggests that the proposal's benefits outweigh the costs. No submitters objected to this approach.
77. We consider there is significant uncertainty around how to determine when to declare a supply shortage, and the size of the energy savings targets, which hampers the extent to which the SOROP can support the reliable supply by, and the efficient operation of, the

electricity industry for the long-term benefit of consumers. We consider that our proposed amendments will provide significant benefits of certainty and clarity around the application of the SOROP which will lead to a better determination of what to do and when to do it.

78. The changes (and consultation/approval process) should mean there is a commonly agreed approach in the SOROP which minimises the extent to which we have to make subjective or potentially arbitrary judgements which might be reasonable in the circumstances, but not necessarily the best approach compared to if these decisions are made well in advance and documented in the SOROP.

6.4 The proposed option is preferred to other options

79. In developing our proposed option, we compared it against the current SOROP (the status quo option) and other variants and options for amending the SOROP.
80. For example, we considered different options for when rolling outages would be triggered e.g. reference to minimum storage levels such as 50% electricity risk curve (**ERC**).
81. The preferred option is based on our experience and expertise in the role of system operator.

6.5 The proposed amendment complies with section 32(1) of the Act

82. The Authority's main objective under section 15(1) of the Act is to promote competition in, reliable supply by, and efficient operation of, the electricity industry for the long-term benefit of consumers. The Authority's additional objective under section 15(2) of the Act is to protect the interests of domestic and small business consumers in relation to their supply of electricity. The additional objective only applies, however, to the Authority's activities in relation to the dealings between participants and domestic and small business consumers, under section 32(3).
83. Section 32(1) of the Act provides that the Code may contain any provisions that are consistent with the Authority's objectives and are necessary or desirable to promote one or all of the matters listed in section 32(1).
84. The submitters that explicitly commented (Northpower, Orion, Top Energy, WEL Network & WE*) agreed that the proposed amendment (as it stood at the time of the consultation) complies with section 32(1) of the Act. We consider that the proposed amendment complies with section 32(1) of the Act because it is necessary and desirable to promote, for the long-term benefit of consumers:

- **reliable supply by, and the efficient operation of, the electricity industry:** As noted above, we consider that there is significant uncertainty around how to determine when to declare a supply shortage, and the size of the energy savings targets.

We also consider that the potential need for rolling outages would be best met through clear rules set out in advance and which minimise the need for use, in our role as the system operator, to apply subjective or potentially arbitrary judgement during a potential outage event.

Appendix 1: Summary and response to consultation questions

Question	Agreement/ support	Comments	Transpower response
General/other		NZ Steel: "We also understand the drivers for the consultation paper written principally for EDB participants, however, caution a one-size-fits-all approach cannot be readily translated to the industrial sector, nor across that sector. Direct-connect sites each have specific characteristics as to load and operational dynamics."	We acknowledge that direct connect (industrial) customers will each have specific load characteristics. Where these characteristics impact on a direct connect's capability to achieve savings targets, this should be reflected in its PROP, which needs to be approved by the system operator.
		NZ Steel: "The rigidity as to interpretation, implementation and operation that comes from the SOROP being indirectly part of the Code is of concern. We support the System Operator having flexibility in working with large consumers re savings targets (Section 6.20). However, if the rigidity that comes with the Code is required relating to other requirements (examples below), then greater clarity and specifics will be needed in the SOROP provisions than the current document being consulted on."	Some of these concerns may be best addressed through the participant's PROP.
		NZ Steel: "We are implementing an Equivalence regime for AUFLS. Please confirm the requirements under Section 6.16(c) are excluded for such arrangements."	Participants will continue to be required to meet their Code obligations as per clause 6.16 of the SOROP. If an equivalence arrangement meets the Code obligations for providing AUFLS then this is included.
Question 1 Do you agree with our assessment of the problems with the SOROP?	Agree: Northpower, Orion, Top Energy & WEL Network, WE* Electricity (partially).	WE*: "we disagree with the assessment regarding the change in notification timeframes and the responsibility for EDBs to provide 30-min GXP demand forecasts which we are currently not funded to produce."	Our response is provided in response to question 13 below regarding the notification timeframes and provision of 30 min GXP demand forecasts.

Question	Agreement/ support	Comments	Transpower response
<p>Question 2 Do you support our proposal to amend the SOROP?</p>	<p>Support: Alpine Energy, Northpower, Orion, Top Energy, WEL Network & WE* (partial).</p>	<p>WE*: "We support the need to amend the SOROP, but we disagree with some of the methods proposed in this consultation paper. Some of Transpower's proposed amendments are not practical to implement (the notification times are too short) and will add costs that networks aren't funded to provide (half hour GXP demand forecasts)."</p>	<p>Our response is provided in response to question 13 below regarding the notification timeframes and provision of 30 min GXP demand forecasts.</p>
<p>Question 3 Are there any other 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.</p>		<p>Alpine Energy: "We are seeking clarity from the system operator on what they consider an "extended period" to be, given the multiple uses of the term across the proposed changes. It is used in the glossary concerning a developing event "An example of a developing event is an extended period of low hydro inflows", a supply shortage "to ensure supply demand for extended periods of time" and then the thresholds for supply shortage declarations uses the term for three different situations. We are concerned about the subjective nature of this term and believe it creates uncertainty about when declarations may be used. We accept that some description is necessary for the system operator regarding the duration of outages given the complexity of different events. Equally, we must have a level of confidence in the mechanism within the plan."</p> <p>Clarus: "The SOROP should be clearer up front about what class and size of participant can have obligations under the SOROP. We recommend creating a new section 1A called 'Participants with obligations under this plan'."</p>	<p>The use of "extended period" aligns with the system operator's Emergency Management Policy (EMP)⁵ where Rolling Outages may only be used in an extended emergency. They are not for management of short-term power system conditions. In addition, the proposal is that the declaration of a supply shortage for a shortage of electricity supply would only be made after an official conservation campaign has commenced. In practice, an extended period is likely to be beyond a week.</p> <p>Clause 6.1 sets out the criteria, methodology and principles to be followed by specified participants whether they have a PROP or not. Specified participants are defined in the Code.</p>

⁵ https://static.transpower.co.nz/public/bulk-upload/documents/Emergency%20Management%20Policy.pdf?VersionId=PUO9BF196DdxR_swOFJ61vYBVMxS6M,y

Question	Agreement/ support	Comments	Transpower response
		<p>Clarus: "The system operator's proposed 35-day forecast uses first percentile hydro inflows on each day for days 8-35 and describes this as a "worst-case scenario". But taking the worst 'day 8' plus the worst 'day 9' (and so on) builds a sequence without historical precedent – it is worse than worst-case. While some conservatism is warranted, this seems too conservative."</p>	<p>We have changed this input assumption to use 1 percentile weekly inflows. Weekly lines up with the weekly review of savings targets.</p>
		<p>Clarus: "The proposed 35-day forecast uses zero GWh of stored hydro as the proxy for unplanned outages (in energy shortage situations, not capacity shortages). But we know that the present-day power system would have unplanned outages happening earlier than that. There is no single theoretical exact amount, as it is highly dependent on the distribution of water in hydro lakes. In the SOSFIP, the system operator sets 50 GWh as the buffer against a similar kind of risk. We recommend the system operator should use an identical buffer for an energy-based 35-day forecast in the SOROP."</p>	<p>The example on page 23 of the consultation paper is an example to show how the modelling would work. The modelling determines when unplanned outages will occur at any GXP over the next 35 days. We agree this may not necessarily be at zero storage. The example given is representative.</p>
		<p>Clarus: "The system operator should rewrite the SOROP to give themselves the option to specify a capacity savings target as a MW limit."</p>	<p>This is provided for in the SOROP under clause 4.19(c) and the definition for capacity savings target which specifies a MW limit.</p>
		<p>Clarus: "Referring to a capacity shortage as a "shortage of transmission capacity" is a misnomer because a shortage of generation capacity is also a trigger. We recommend removing 'transmission' from this proposed definition."</p>	<p>We agree with this comment, as we have mentioned a shortage of generation capacity as a trigger for a capacity shortage. We have adopted Clarus' recommended minor drafting change.</p>
		<p>Clarus: ""Defined terms should use similar wording where possible. There are misalignments between 'capacity savings target' versus 'energy savings target', and 'developing event' versus 'immediate event'."</p>	<p>We have reviewed for consistency and didn't identify any examples that needed changing. The examples Clarus provided are of terms that are clearly defined</p>

Question	Agreement/ support	Comments	Transpower response
			in the SOROP and for which the different terms have a specific purpose.
		<p>Clarus: "The proposed definition of 'outage' is very similar to 'rolling outages'. It is not clear what distinction the system operator is attempting to make, if any. If the system operator's intention is to distinguish unplanned outages from rolling outages, then the system operator should redraft 'outage' to be 'unplanned outage' and delete "by specified participants" from within that definition (as it carries some intentionality)."</p>	<p>Noted. The definition of "outage" as used in the SOROP is to distinguish from "outage" as defined in Part 12 of the code. We have redrafted to remove "by specified participants".</p>
		<p>Clarus: "The definition of "savings target" should simply refer to the two relevant defined terms (capacity savings target and energy savings target) as these are an exhaustive list of savings targets."</p>	<p>Savings target refers to a target contained within a direction. The definitions for capacity savings and energy savings do not.</p>
		<p>Clarus: "The system operator proposes that, once a new SOROP is published, PROPs would need to be updated within two years of each PROP's last update. However, clause 9.13(1)(a) of the Code creates a continuous obligation on specified participants that their PROP must be consistent with the SOROP (clause 9.8(1)(a) of the Code). ... Ideally, the system operator would set a schedule for 6-18 months for provision of updated PROPs, in descending order of load (ie largest loads first, as a proxy for risk)."</p>	<p>We do not want to create an unnecessary administrative overhead due to updating the SOROP, both for participants and ourselves in reviewing updated PROPs. Therefore, we are proposing to update these as and when they normally come due for review. Note that should updated PROPs be required sooner than the 2 years review then the system operator may request a new PROP from specified participants.</p>

		MEUG: "We note that the term extended period(s) is used numerous times in the amended SOROP, but the term is not defined. Clarification would be useful."	Please see above response to Alpine Energy in relation to question 3.
		MEUG: "Under 4.1(c) its states that "a savings target will typically be an energy savings target per week". We are comfortable with the per week requirement but note a minimum is not set in the proposed SOROP. This could potentially be problematic."	How savings targets are to be met is an element of a participant's PROP and is best dealt with there
		MEUG: "Term capacity saving ... There has been no change to this term. However, we note that for some facilities these savings target expressed as a maximum instantaneous demand (in MW) during a period could be challenging to achieve and restart in a reasonable time."	We consider that how capacity targets are to be met is an element of a participant's PROP and is best dealt with there.
		MEUG "Use of term forecast ... We note that there could be issues with the term forecast regarding non-conforming loads. Clause 4.1(b) provides for the ability to challenge the "forecast" if it is inaccurate. However, if the week before (or a week in August) was a low production period for any variety of reasons, but the next week (during the rolling outage) the facility was planning normal or even high production/energy, it is possible the facility will be asked to provide more saving than is fair based on an alternative metric (e.g. annual average load)"	<p>Participants with non-conforming loads should ensure their load bids are updated and extend out for 2 weeks. In that way the system operator's savings targets calculated for the week out will use such updated information.</p> <p>Please note clause 6.16(a) relating to updating bids to account for obligations to comply with directions. Until such directions are given, bids should not account for that and should be based on expected consumption without outages.</p> <p>The August date is only provided as a month to use to demonstrate capability of achieving savings targets.</p>
		MEUG: "Clarification is needed with each direct connect on how they are to manage any AUFLS or Interruptible Load (IL) obligations during an event. There may be some unintended consequences for the electricity system if	All participants must continue to meet their AUFLS obligations during an event. Clause 6.16(c) contains these provisions. I/L offers should be updated to

		requirements are not clearly managed. We believe that this matter is best discussed on an individual basis to determine the exact requirements, rather than trying to address it through the drafting of the SOROP.”	account for any load that is not able to be offered as IL, 6.16(a) contains this provision.
		MEUG: “We encourage the System Operator to develop a template or specified format for participants to provide the required weekly information and ensure that this reporting can be done online if possible. This will make the process easier and more consistent.”	We intend to develop a template PROP for participants to refer following approval of a new SOROP. We will develop this additional template as MEUG have suggested.
		MEUG: “We do not believe that it will always be feasible for industrial participants to meet energy savings targets in 5% increments, due to operational constraints and conditions (i.e. turn down capacity of equipment). The energy savings targets disclosed should reflect the saving targets possible for the specific site, where they differ from 5% increments.”	The 5% increments in clause 6.12(b)(i) are only to demonstrate how the participant could meet such savings targets. Savings targets would not necessarily be instructed in 5% increments. If operational restrictions are such that different targets are more sensible, then the savings targets possible for the specific site should be given in the closest amount to that 5% increment. We have clarified this in the proposed SOROP. In addition, we have changed the provision in clause 4.2(d) to include operational reasons or restrictions as feedback to proposed energy savings targets from any participant.
		Northpower: “... Northpower would prefer to maintain the supply to the CBD as opposed to Dairy Farms (reverse order of 4 and 5)”	Please see our response under question 14 below.
		WE*: “The two changes we disagree with (notification timeframe changes and the half hour GXP demand forecasts) should stay the same as they are now.”	Please see our responses to questions 8 and 13.

		Top Energy: "Yes, as long as SO communications clearly state the applicable status."	Our procedure document for this communication will capture this clarification following approval of a new SOROP.
Question 4 Do you agree with splitting the declaration of a supply shortage into a shortage of electricity supply and a shortage of transmission capacity. Is this split clear?	Agree: Northpower, Orion, Top Energy, WEL Network & WE*.	WE*: "We suggest it can be clarified that a supply shortage is a developing event (e.g. a dry year), whilst a transmission capacity shortage could be either an immediate event or a developing event rather than just an immediate event. For example, transmission capacity might be sufficient in summer, but if an extended outage continues into winter, there could be a long-term forecast for a shortage of transmission capacity."	A supply shortage can be either a developing event or an immediate event. A shortage of transmission capacity is one of the categories of a supply shortage; the other being a shortage of electricity supply. We have relabelled transmission capacity as just capacity (please see our response to Clarus under question 3 above).
		WE*: "we have some reservations about the process changes proposed by Transpower (notification timeframe changes and the half hour GXP demand forecasts)."	Transpower's response is covered under question 8 below.
Question 5 Do you agree with the proposed change to this method of when to declare a supply shortage?	Agree: Northpower, Orion, Top Energy, WEL Network & WE*.		
Question 6 Do you agree with our proposal to use the current inflow forecast, assuming 1% daily inflows beyond 7 days, as one of the inputs in determining when to declare a supply shortage?	Agree: Northpower, Top Energy, WEL Network & WE*.		

<p>Question 7 Do you agree with using a demand forecast as described above over the next 35 days in determining whether to declare a supply shortage?</p>	<p>Agree: Northpower, Top Energy, WEL Network & WE*.</p>	<p>WE*: "We disagree with the proposal to reduce the notification period. This is a large reduction in time from the current setup and reduces the time for Wellington Electricity to notify retailers, to then notify the end customers. We believe that 7 days is not sufficient to notify the public. EDBs don't have the functionality to directly communicate with consumers. We rely on retailers to pass notifications on. This necessitates a longer process.</p> <p>"We also disagree that reducing the notification period will guarantee a reduction to the savings target, even though it will allow for a greater timeframe for rainfall to increase lake levels. Whilst Transpower may assess that it is more likely that the savings target will be lower if savings start earlier, we see no guarantee in this. Transpower could still require Wellington Electricity to have 20 or 25% savings – and with a reduced timeframe to notify retailers/ major customers, we anticipate this to cause significantly more distress to customers.</p> <p>"We recommend that the notification timeframe align with the DDA for planned outages – this is for 10 business days, or 14 days and not change to notification time. This will maintain a standardised notification window for customers of any loss of power they may experience, as a planned outage."</p>	<p>We have reverted to the 14 days notification in the current SOROP to align with the EDB DDA for planned outages. We may review any opportunities to shorten this timeframe in the future.</p>
<p>Question 8 Do you agree with the proposal to lower the notification period for declaration of a supply shortage from 14 days to 7 days? If not, what timeframe would</p>	<p>Agree: MEUG, Northpower, NZ Steel, Orion, Top Energy & WEI Network.</p> <p>Disagree: WE*.</p>	<p>MEUG: "We recommend that the System Operator clarify with each direct connect how they will account for existing demand response agreements as part of a participant's savings target."</p>	<p>This should be contained within each participant's PROP, where the participant describes how they intend to meet energy savings targets and capacity savings targets.</p>

you suggest as appropriate?			
Question 9 Do you agree with the proposal for the calculation of savings targets?	Agree: Northpower, Orion, Top Energy, WEL Network & WE*. Disagree: Vector	MEUG: "We do not believe that it will always be feasible for industrial participants to meet energy savings targets in 5% increments, due to operational constraints and conditions (i.e. turn down capacity of equipment). The energy savings targets disclosed should reflect the saving targets possible for the specific site, where they differ from 5% increments."	See our response to MEUG in relation to question 3.
		WE*: "Transpower have stated in Section 4.1.A (b) that the same energy savings target will be given to participants "within the same region". We ask Transpower to clarify how this "region" is defined – is it by Grid Zone, or EDB area of supply. In the Wellington grid zone there are 3 EDBs and it is unclear if each EDB will have the same savings target. This is the same unclarity for direct connect customers within a region/ grid zone."	Because of the variety of scenarios in which shortages may occur, we consider it is preferable to allow the system operator discretion to decide the appropriate region that is appropriate for the scenario being faced. The region will be the area where rolling outages will assist in alleviating the supply shortage.
		Vector: "We believe the proposed new clause 4.2(d) is too broad and lacks any specific criteria the system operator should apply when it considers amending the savings targets for a specified participant based on that specified participant's feedback. We are concerned about the ability of participants, especially major consumers, to lobby for lower savings targets compared with residential consumers."	We agree with Vector and added criteria to this clause. Note that clause 6.20 has also been amended (see response to question 17 further below).
		Northpower: "We would agree, with 35 days, however this would always need a seasonable adjustment."	The forecasting for the next 35-days would be based on the relevant time of the year.

<p>Question 10 Do you agree with using a forecast of specified participants consumption over the next 35 days in setting savings targets rather than last year's demand?</p>	<p>Agree: Northpower, Orion, Top Energy, WEL Network & WE*.</p>	<p>Top Energy: "in our case we have geothermal generation on our network, and its availability at any given time should be taking into account in forecasting, as that may affect the load data used to forecast."</p>	<p>Our forecasting will use forecast generation and demand. If a participant believes their 35-day forecast electricity consumption is inaccurate then they should provide feedback as provided for under the proposed clause 4.1(b).</p>
		<p>WEL Network: "... how would you account for embedded generation variability within a distribution network?"</p>	<p>Embedded generation variability may be difficult to forecast as it is now. If the GXP is non-conforming, then bids would be used. If the embedded generation is offered then we would be forecasting gross load before any embedded generation, if not we may need participant feedback (as provided under 4.1(b)) to inform the forecast.</p>
<p>Question 11 Do you agree with the proposal to provide for participant feedback on the demand forecast within 48 hours if a participant believes it is wrong?</p>	<p>Agree: Northpower, Orion, Top Energy, WEL Network & WE*.</p>	<p>WE*: "We agree with keeping the notification of savings targets in line with the initial notification to give more certainty to customers. As described above, we do not agree with the 7-day timeframe for initial notification."</p>	<p>Please see our response to question 8 above.</p>
<p>Question 12 Do you agree with lowering the notification of savings targets from 9 days to 7 days?</p>	<p>Agree: Northpower, Orion, Top Energy, WEL Network, WEL Network & WE* (partial).</p>	<p>Northpower: "...we can only provide suggested PROPs as each event will act differently to another. The half hourly GXP demand would need to be modelled using specific dates and time"</p>	<p>We note Northpower's currently approved PROP is sufficient with regards to the information sought.</p>
<p>Question 13 Do you agree with the proposal to add the requirement for Participant Rolling Outage Plans to provide a seven-day planned</p>	<p>Agree: Top Energy, WE* (partial/agreed with the provision of the 7 day outage and restoration plan but disagreed with the</p>	<p>Orion: "It is not clear to us why the System Operator requires this information. We consider that this will present considerable logistical difficulties with hundreds of feeders and the rotation of feeders to lessen the impact on customers. This may be able to be achieved at a high level but as we see it, the important point is that we do not</p>	<p>With regards to the provision of a rolling seven days planned outage list, updated daily, this information is crucial to ensuring system security during rolling outages. With potentially over 30 participants all conducting rolling outages the start and end of these need to be co-ordinated to ensure there are no</p>

<p>outage list with daily outage and restoration times and half hourly GXP level demand upon notification of savings targets?</p>	<p>GXP level demand forecast).</p> <p>Disagree: Northpower & Vector (partial/don't consider that specified participants should be required to provide half-hourly GXP level demand forecast information).</p>	<p>exceed 25MW per 5 minutes and achieve our savings targets at the GXPs.”</p>	<p>adverse effects on the power system. The provision of this information is already contained in a number of participant PROPs. This information would only be required once savings targets are notified following declaration of a supply shortage.</p> <p>With regards to the provision of half hourly GXP level demand forecast information for conforming GXPs for the week ahead, this information is essential for 2 reasons:</p> <ol style="list-style-type: none"> 1. Assist the system operator to conduct studies and assess system security for the next 7 days. 2. Ensure accuracy in forward market schedules to enable market participants to plan and respond accordingly. <p>The system operator will not know exactly where rolling outages will be carried out and to what extent. The savings targets are provided at a regional, not GXP level. How EDBs implement rolling outages is their decision. The system operator therefore cannot forecast such information, but the demand level information is essential to assess system security and request changes if required. The information is also essential, so forward market schedules reflect the demand expected. This in turn enables market participants to plan and schedule generation and load accordingly.</p>
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		<p>Vector (cross-submission): "We consider that the System Operator is best placed to be responsible for providing specified participants with weekly forecasts of electricity consumption, demand, and savings targets."</p>	<p>We can do this for unadjusted forecasts, but only participants have the knowledge of when, where and for how long they are applying rolling outages to provide us with adjusted forecasts. We do not have this information.</p>
		<p>WEL Network: "WEL models PROP feeders to ensure equity based on feeder priority and savings targets -these may vary and therefore may be difficult to provide accurately 7 days in advance."</p>	<p>Provision of outage start, and end times and GXP demand level information should be reasonable endeavours noting that things may change as circumstances change. We have added this clarification to the proposed SOROP.</p> <p>For the GXP demand level information this could be done by taking the information Transpower provides (which will be GXP level information without rolling outages) and deducting the expected demand reduction taking into account timing and extent of outages per GXP.</p>
		<p>WE*: "... we disagree with the requirement for EDBs to provide half hourly GXP level demand forecast upon notification of savings targets. This is because we do not have the capability to provide this data. The change would require substantial investment in monitoring equipment and forecast calculations that would require an increase in funding through regulatory allowances.</p> <p>"While there is progress within the industry through other workstreams to provide a greater transparency of data, WELL believes until there is greater direction for this large investment, this requirement cannot be mandated. Transpower's own demand forecasting and Wellington Electricity's feedback on the energy savings targets should</p>	<p>We do not foresee the need to invest in monitoring equipment or forecast calculations, other than what should already be in place to provide reporting to the system operator as required under section 6.5 of WE*'s PROP. Please also see our response immediately above regarding the high-level nature of the information sought.</p>

		<p>be sufficient for Transpower to be certain of the forecasted demand.</p>	
		<p>Powerco (cross-submission): “Wellington Electricity’s submission sheds light on the challenges and costs associated with the proposed requirement for EDBs to provide half-hourly GXP level demand forecasts upon notification of savings targets (question 13). Like Wellington Electricity, Powerco lacks readily available tools to meet this requirement. Introducing such capabilities could entail significant expenses for Powerco in terms of development, maintenance, and ongoing use.”</p>	<p>The Powerco PROP (clause 7.1) states that “Powerco shall provide the System Operator with a daily week-a-head forecast of half hourly load, at each GXP, during any period in which rolling outages are scheduled.” This is sufficient.</p>
		<p>Vector: “It is not entirely clear from the document, but it appears that the system operator will provide specified participants with a forecast electricity consumption when it first notifies savings targets.</p> <p>“The proposed new clause 6.2B seems to suggest that specified participants are then responsible for providing weekly demand forecast information from that point onwards.</p> <p>...</p> <p>“We suggest this process is further clarified and that the system operator continues to be responsible for providing specified participants with weekly forecasts of electricity consumption and demand. This should be done as part of the weekly updates of the savings targets by the system operator. This data should be published, for transparency.</p> <p>“Using the same forecasting model and inputs for all specified participants rather than a fragmented approach will provide more robust and consistent outcomes. This</p>	<p>The system operator will use a 35-day demand forecast in setting or resetting savings targets. This information will be updated regularly in case savings targets need to be reset. This information will certainly be provided to participants as participants may provide feedback on their 35-day forecast if they believe it is inaccurate. This forecast will be without rolling outages applied.</p> <p>Once savings targets have been notified then participants must provide half hourly GXP level demand information for the week ahead, with provision for rolling outages. This is because the system operator will not know at which GXPs, what times and to what extent the participant plans to take rolling outages. This is not forecastable by the system operator, but it is very important information for security analysis and market scheduling.</p> <p>We agree with Vector that a consistent approach would be ideal, however the system operator cannot forecast a response that it does not have any</p>

		would be particularly relevant during a developing event and an official conservation campaign has commenced which would increasingly complicate forecasting electricity consumption and demand accurately.”	information about. It can, and will, provide 35-day ahead forecasts as used in setting savings targets.
		Northpower: “This Priority order will differ between EDBs, for example Northpower would prefer to maintain the supply to the CBD as opposed to Dairy Farms (reverse the order of 4 and 5)”	This table is a guideline only and how EDBs take rolling outages and the priorities they assign is their decision. This decision making can be explained in their PROP. We have added some clarity around this table including removing the reference to “...disconnecting load in accordance with this table.”
		Orion: “... the reference to communication networks in priority 2 presents difficulties. Communication networks are for the most part embedded in our low voltage network in priority 6 (ie embedded in our residential feeders).”	We can see there is a need to add greater clarity to specify this table is to be used as a guideline only. How EDBs undertake rolling outages and the priorities they assign is their decision. This decision making is best explained in each PROP. We have added some clarity around this table being used as a guideline only. This includes removing the reference to “...disconnecting load in accordance with this table.”
		NZ Steel “Section 6.12(b) specifics relating to August load may be relevant for a winter peak EDB but has no particular significance for our operations. “Section 6.12(b)(i) specifies 5% increments in load. This would be difficult to achieve with any consistency (if at all).”	Please see our response to question 3 above.

<p>Question 14 Do you agree the priority order in the Table in 6.8 of the SOROP for disconnection of demand should remain unchanged?</p>	<p>Agree: Top Energy, WEL Network & WE*. Disagree: Northpower (partially), Orion</p>	<p>Vector: "Vector strongly opposes the second part of the proposed new clause 6.20 where the system operator may vary or amend the energy savings targets for any specified participant based on economic reasons ..."</p>	<p>We agree that it would not be appropriate for the system operator to make judgements about energy savings based on economic factors and that the discretion should be limited to operational matters. We have amended the proposal accordingly.</p>
<p>Question 15 Do you agree with the proposal to not change the requirement to provide information on the arrangements in place between the distributor and retailers?</p>	<p>Agree: Northpower, Orion, Top Energy, WEL Network & WE*.</p>		
<p>Question 16 Do you agree with this clarification in clause 6.12(b)? If not, would you suggest anything different or would you prefer what's in the current SOROP which does not specify any time of year or month?</p>	<p>Agree: Northpower, Orion, Top Energy, WEL Network & WE*.</p>		
<p>Question 17 Do you agree with the proposal to remove the provision for directly connected consumers to provide a full information plan</p>	<p>Agree: Northpower, NZ Steel, Orion, WEL Network & Top Energy. Disagree: Vector disagreed with the</p>		

<p>given participants (which includes directly connected consumers) can provide feedback on their demand forecast and on their savings targets?</p>	<p>second part of this proposal around varying savings targets on economic reasons (we infer they agreed with the proposal to remove the full information plan).</p>		
<p>Question 18 Do you support our proposed transitional arrangements under which specified participants would not have to bring forward their proposed amendments/update of their Participant Rolling Outage Plans?</p>	<p>Agree: Northpower, Orion, Top Energy, WEL Network & WE*.</p>	<p>WE*: "... the reduction in notification time and requirements to provide demand forecasts will incur more costs to EDBs than benefits. As the assumed benefits in reducing the notification timeframe will not guarantee a reduction in energy savings target, we cannot justify its required change. As described above, providing GXP half hourly forecast data is not something WELL has the capability to do and may incur a duplication of effort and costs to customers if we are not the best participant to provide this data."</p>	<p>Any effort required to provide demand forecasts would only be required in the unlikely event of a supply shortage being declared and savings targets notified. In the event a supply shortage were declared there are likely to be many activities participants do not normally carry out. Our responses to the notification time and demand forecasts are in questions 8 and 13 above.</p>
<p>Question 19 Do you agree with the objectives of the proposed amendment?</p>	<p>Agree: Northpower, Orion, Top Energy, WEL Network & WE*.</p>		
<p>Question 20 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</p>	<p>Other: Top Energy: "Do not have sufficient information on hand to comment." WEL Network: "Not enough information to comment."</p>		

provide and/or what methods would you recommend to quantify the costs and benefits?			
Question 21 Do you agree the benefits of the proposed amendments to the SOROP can reasonably be expected to outweigh its costs?	<p>Agree: Orion & WE* (partial)</p> <p>Other: Top Energy: "Do not have sufficient information on hand to comment."</p> <p>WEL Network: "Not enough information to comment."</p>		
Question 22 Do you agree that the proposed amendment complies with section 32(1) of the Act?	<p>Agree: Northpower, Orion, Top Energy. WEL Network & WE*.</p>		

Appendix 2: Summary and response to Clarus' drafting commentary.

Clause	Comments (Clarus)	Transpower response
Clause 3.5	The clause chapeau should be specific that the clause relates only to energy shortages and not capacity shortages.	No change needed. The clause is explicit that "The system operator will make a supply shortage declaration for a shortage of electricity supply if ... "
Clauses 3.5(b), 3.5A, 3.5B and 4.1(a)	The words "extended period of unplanned outages" attracted comments from several submitters who would prefer greater specificity from the system operator. This would be preferable, though it is not obvious that it will be possible to have meaningful specificity (especially if the system operator needs flexibility to adapt to the particular circumstances of this unprecedented situation).	We do not consider any change is needed. Please see the response to question 3 earlier.
Clause 3.6(d)	The word 'profiled' may mean different things to different readers. We suggest replacing this with the more generic 'forecast' as that is fundamentally what it is and the system operator hasn't been specific about its methodology.	Agreed. We have changed term profiled to forecast. It will be a forecast of the generation types in clause 3.6(d) that is used.
Clause 4.1(a)	The context suggests the system operator means the target savings will be set to the minimum sufficient to avoid unplanned outages, but isn't explicit about this in the drafting. If it is the system operator's intention to set the smallest savings target necessary that avoids unplanned outages, this should be made explicit.	We have made it explicit that energy savings targets will be set to avoid an extended period of unplanned outages and won't be set larger than necessary.
Clause 4.1(a)	The defined term "savings target" should be in bold font.	Agreed. We have made this change.
Clause 4.1(b)	More specificity about the system operator's forecasts is needed. Will the system operator's demand forecasts be net load at GXP only? In which case, it will be necessary to share what the system operator assumes about generation behind the GXP.	The forecasting will use any known information (such as the savings being achieved by the official conservation campaign) but excludes unknown information (such as when and where rolling outages are being taken). To include rolling outages in savings targets would be double counting.

Clause	Comments (Clarus)	Transpower response
	<p>Will electricity generated and consumed 'behind the meter' always be disregarded? Clause 4.1(b) Will the system operator's demand forecasts be inclusive or exclusive of official conservation campaign savings?</p> <p>Will they be inclusive or exclusive of rolling outage savings? Will the system operator's methodology for forecasting vary depending on whether it is setting an energy savings target or a capacity savings target? Gross consumption may be more appropriate in an energy shortage, whereas net demand at the GXP may be more appropriate in a capacity shortage.</p>	<p>Energy savings targets are a percentage of participants consumption in MWh whereas capacity savings targets are in MW during a period.</p>
Clause 4.1(b)	<p>This clause has sandwiched a sentence for specified participants between two sentences for the system operator. This is suboptimal drafting.</p>	<p>Agreed. This clause has been reordered</p>
Clause 4.1(b)	<p>The defined terms "specified participant" and "electricity" should be entirely in bold font.</p>	<p>Agreed. We have corrected this.</p>
Clause 4.1(b)	<p>The proposed new sentence in this clause seems to be intended to create an obligation on specified participants to review the system operator's forecast and give feedback within 48 hours if they believe it is inaccurate. However, the wording does not achieve this. The actual effect of the wording is ambiguous. It could be read as a limitation on specified participants' ability to provide feedback on the system operator's forecast (limiting it to a 48-hour window). Or it could be read as creating no enforceable obligation or limitation.</p>	<p>There is no obligation created. We have stated that participants <i>may</i> provide feedback if they believe the forecast is inaccurate. The only limitation is to provide feedback within 48 hours of receipt.</p>
Clauses 4.6 and 5.1	<p>Consider rewording these clauses to use 'specified participant' as used elsewhere in the SOROP.</p>	<p>Agreed. These changes have been made and we have reviewed to ensure the codified definition of specified participant is not used in the SOROP without the clarification that the SOROP does not apply to retailers or line owners.</p>

Clause	Comments (Clarus)	Transpower response
Clause 5.1	One of our three key recommendations (see above sections) was to give the system operator the ability to specify a capacity savings target as a MW limit at one or more GXPs operated by a single participant. If our recommendation was adopted, this clause is the place to locate it.	This is provided for under our proposed SOROP. Please see clause 4.1(c) and the definition of capacity savings target
Clauses 6.2A and 6.2B	Consider obligating specified participants in these clauses to use the format specified by the system operator (if any). This will be much cheaper to implement if specified participants can design their delivery systems accordingly, rather than adapt them at a later date. Consistency of delivery would, we presume, lower costs and improve process quality for the system operator.	As suggested by MEUG we will look to develop a template that can be used for providing the information requested in 6.2A and 6.2B. This will be developed following the new SOROP being published. We also note this information would only be required in the unlikely event of a supply shortage being declared and savings targets notified. PROPS need only mention this data will be provided in the event of savings targets being notified (clause 6.2(D))
Clause 6.2B	This clause should specify the units of measurement. We presume the system operator wants to receive average MW for each half hour.	Agreed. We have specified this for avoidance of doubt.
Clause 6.2C	This clause repeats a Code obligation to provide accurate information via WITS. If there is a distinction from existing Code obligations it should be made clearer.	The Code obligation does not relate to updated bid information for the week ahead <i>following notification</i> of savings targets. This is the distinction.
Clause 6.2E	The content of this clause would be better suited to around clauses 4.3 or 4.4.	Agreed. Section 6 deals with what is in a PROP.
Clause 6.3(a)	This clause should specify how demand is measured. If a distributor has more than one GXP, is it a 25 MW movement per GXP? Is the demand net of generation behind the GXP, or gross demand?	Noted, we have added clarity that these requirements are a per participant requirement in line with 6.3(b) and 6.3(c).
Clause 6.3(c)	This clause could be better worded to be clear that the only problematic actions are disconnection during ramp down or reconnection during ramp up. The present wording makes a	Agreed. Change made.

Clause	Comments (Clarus)	Transpower response
	Code breach out of reconnection during ramp down, and disconnection during ramp up.	
Clause 6.5(a)	The new chapeau of clause 6.5 sets the scope for the personnel of interest ('involved in implementing the participant rolling outage plan'). Accordingly, clause 6.5(a) is too wordy. We recommend deleting "about matters relating to supply shortages, supply shortage declarations, directions and rolling outages".	Agreed. Change made.
Clause 6.5(c)	This clause includes "and the media (if required)". Saying "if required" here is impossible for specified participants to operationalise. The system operator should either delete the "if required" (because the system operator does require the contact details, but will only use those details if the circumstances require it) or delete all mention of the media if the system operator doesn't require it.	Agreed. Change made.
Clause 6.6	The system operator should probably insist that its contact details (required by clause 6.5(d)) are redacted from published versions. Publishing these contact details poses an operational risk.	The system operator email and phone contact details in most PROPs can be gained from a number of locations already.
Clause 6.6	Consider making this clause a requirement rather than an option. It seems likely no specified participant should be permitted to include their contact details in the publicly available version, as it poses an operational risk.	Agreed. Change made.
Clause 6.7	This clause doesn't seem to add much (if anything) given clause 9.18 of the Code and the newly proposed requirements of clauses 6.2A and 6.2B of the SOSPA. It appears it should be deleted.	We don't consider there is anything in clause 9.18 of the Code or the proposed 6.2A or 6.2B that requires provision of information about the specified participant's performance against the savings target.

Clause	Comments (Clarus)	Transpower response
Clause 6.12(b)	If the system operator’s approval of a PROP is dependent on the PROP including the forecast electricity consumption, then this would be tantamount to a new requirement to update PROPs annually (to always use the latest data for August). We suspect this was not the intention and the system operator should be careful to warn PROP authors against including forecast electricity consumption.	This clause is about demonstrating specified participants are capable of achieving various levels of energy savings. There is nothing in this clause requiring forecast electricity consumption. This is currently provided for in all PROPs. The only additions in this clause are specifying the time of year to be used and providing it in a table format. Most participant PROPs currently achieve this (excepting the month).
Clause 6.12(b)	This subclause seeks to standardise the use of August data as the baseline for demonstrating demand management. A more flexible approach may be warranted. Direct consumer loads are varied, and August may be a poor baseline for some of them. Some distributors with winter-peaking loads may find it worthwhile to have a different approach for summertime, when lower loads on AUFLS feeders may make a different configuration of load management needed. The few distributors with summer-peaking loads may find August a poor baseline.	We have chosen August rather than leaving participants unsure or unclear what time of the year to use. August was chosen as the month when loads across the system are likely to be high and hydro storage low (on average). If energy savings targets were to be notified the time would be the same across all participants in the affected region. Please note this is only used to demonstrate specified participants are capable of achieving these targets when system loads are highest.
Clause 6.13(a)	This subclause requires acknowledgement within 48 hours. For something as simple as an acknowledgement and the urgency of an immediate event, this seems overly long. An alternative approach would be to require acknowledgement “as soon as reasonably possible and within 48 hours”.	This has previously been discussed with some participants and 48 hours for email was seen as reasonable.
Clause 6.13(a)	The system operator’s obligation should not be tacked on to the end of this subclause. A new 6.13A should be created clearly setting out the system operator’s obligations. The system operator should have a new requirement to specify the acknowledgement window in its direction.	Agreed. Change made.
Clauses 6.13(b)-(d)	These subclauses use the defined term “demand” which means “the rate of consumption of electrical energy”. While it isn’t	The word demand has been changed to electricity (which is measured in kWh) in these clauses.

Clause	Comments (Clarus)	Transpower response
	possible to save GWh without reducing MW, we recommend using more generic language.	
Clause 6.20	It is not clear what additional clarity this clause gives relative to subclauses 4.2(b) and (d). ... Clause 6.20 should be deleted. If retained, the content of proposed new clause 6.20 would be better relocated to be a new clause 4.2A as it relates to the preceding clauses.	Noted. We have reviewed clauses 4.2(d) and 6.20 with a view to consistency and tightening the reasons under 4.2(d).

Appendix 3: Track change version of the proposed SOROP

System Operator Rolling Outage Plan

Effective from DD MM 2024

Rolling Outage Plan

1. Background

- 1.1 This Plan is the **system operator rolling outage plan**, which the **system operator** is required to prepare and **publish** under clause 9.2 of the **Code**. ~~This Plan replaces the **system operator rolling outage plan** issued by the Electricity Commission on 30 September 2010 of 19 June 2016.~~
- 1.2 This Plan provides for the management and co-ordination of planned **outages** as an emergency measure during energy shortages.
- 1.3 Other policies and procedures detail how the **system operator** will provide security of supply related information and respond in other ways to emergencies and security of supply situations. These include the **security of supply forecasting and information policy**, the **emergency management policy**, the **policy statement**, and the clauses of the **Code** relating to **grid emergencies**.

Commented [A1]: The reference to the last version of the SOROP in clause 1.1 is deleted as this is not required.

2. Glossary

- 2.1 In this Plan, unless the context otherwise requires-

capacity savings target means a **savings target** expressed as a maximum instantaneous **demand** (in MW) during a period.

Code refers to the Electricity Industry Participation Code 2010.

~~controlled available~~ **hydro storage** has the meaning given to that term in the **security of supply forecasting and information policy**.

Commented [A2]: Changed terminology in the SOSFIP.

contingent hydro storage has the meaning given to that term in the **security of supply forecasting and information policy**.

~~developing event has the meaning given to that term in paragraph 3.3 means an event arising over time that could cause a **supply shortage**. An example of a **developing event** is an extended period of reduced generating capacity.~~

Commented [A3]: The definitions of developing event, immediate event and supply shortage are moved from the body of the SOROP to the Glossary section to put all definitions in one place.

direction means a direction given by the **system operator** to a **specified participant** under clause 9.15(1) of the **Code**.

~~energy savings target means a **savings target** expressed **maximum level of as a percentage of the specified participant's forecast electricity** consumption (in MWh) **as forecast** over a period of **time**.~~

Commented [A4]: The definition of energy savings target is modified to be consistent with the savings target set under clause 4.1(b) that is set as a percentage of participants forecast electricity consumption over a period of time. Please see the discussion on section 4 below for reasons and questions.

extended emergency has the meaning given to that term in the **emergency management policy**.

~~full information plan has the meaning given to that term in paragraph 6.16~~

Commented [A5]: The definition of full information plan is removed from the Glossary (and related clauses in Section 6 are revoked). Please see the discussion on section 6 below.

~~immediate event has the meaning given to that term in paragraph 3.3 means an event arising with little or no time that could cause a **supply shortage**. An example of an **immediate event** is an unexpected outage of a major transmission line or **generating plant**.~~

Commented [A6]: The definitions of developing event, immediate event and supply shortage are moved from the body of the SOROP to the Glossary section to put all definitions in one place.

~~outage means a reduction in **demand** or **electricity consumption** by specified participants due to a lack of **electricity** supply or **transmission capacity**. This is as defined for the SOROP, although is contrary to Part 12 of the Code and Transpowers quality standards under the IPP.~~

Commented [A7]: Removed any intentionality associated with the use of "by specified participants"

rolling outages means reductions in **demand** or **electricity** consumption implemented by **specified participants** in order to comply with a **direction**.

Commented [A8]: Removed the word transmission as capacity issues could be due to lack of generation

savings target means a **demand** or **electricity** consumption target contained within a **direction**.

Commented [A9]: The definition of outage is added for avoidance of doubt, as it applies to the SOROP and is different to the definition as used in Part 12 of the Code.

~~supply shortage has the meaning given to that term in paragraph 3.1 of this Plan. means a situation when the **system operator** considers that the normal operation of the spot market for **electricity** is, or will soon be, unlikely to facilitate the adjustment of supply and **demand** necessary to ensure supply matches **demand** for extended periods of time and if planned **outages** are not implemented, **unplanned outages** are likely.~~

Commented [A10]: The definitions of developing event, immediate event and supply shortage are moved from the body of the SOROP to the Glossary section to put all definitions in one place.

2.2 References in this Plan to a **distributor's demand** or **electricity** consumption mean the **demand** or **electricity** consumption on the **distributor's network**.

2.3 References in this Plan to **specified participants** include **distributors** and persons who use **electricity** that is conveyed directly from the **grid** but does not include **retailers** and **line owners** (other than **distributors**).

Commented [A11]: Added to clarify specified participants has a slightly different meaning from that in the Code.

2.4 Any term in bold that is defined in the **Code** and used but not defined in this Plan has the same meaning as in the **Code**. Any term in bold that is not defined in this Plan is defined in the **Code**.

Commented [A12]: Changed wording.

3. Supply shortages and supply shortage declarations (clauses 9.4(a) and 9.4(b) of the Code)

Supply shortages

3.1 Clause 9.14(2) of the **Code** provides that the **system operator** may make a **supply shortage declaration** only if there is a shortage of **electricity** supply or transmission capacity such that the **system operator** considers

(a) the normal operation of the spot market for **electricity** is, or will soon be, unlikely to facilitate the adjustment of supply and **demand** necessary to ensure that supply matches **demand**; and

(b) if planned outages are not implemented, unplanned outages are likely.

This situation is referred to in this Plan as a **supply shortage**.

3.2 A **supply shortage** is different from a **shortage situation**, which is a condition for scarcity pricing under Part 13 of the **Code** does not constitute an **unsupplied demand situation**. A **supply shortage** may coincide with such a situation.

Commented [A13]: The reference to scarcity pricing is removed as it has been removed from the Code.

3.3 There is a range of events that could cause a **supply shortage**. Some events may develop over time (a **developing event**) and some events may arise with little or no warning (an **immediate event**). Examples of events that could contribute to a **supply shortage** are a period of low hydro inflows or an extended outage of a major transmission line or **generating plant**. *[Revoked]*

Commented [A14]: The definitions of developing event, immediate event and supply shortage are moved to the glossary to have all definitions in one place.

3.4 A **supply shortage** is a condition of an **extended emergency**. The **emergency management policy** sets out various means available to the **system operator** to manage **extended emergencies**, which include **rolling outages**.

Thresholds for supply shortage declarations

3.5 Under clause 9.14(1) of the **Code** the **system operator** has discretion to make a **supply shortage declaration** when there is a **supply shortage**.

3.53.6 The system operator will make a supply shortage declaration for a shortage of electricity supply if-

- (a) an official conservation campaign official conservation campaign has commenced; and
- (b) an extended period of unplanned outages at any GXP is forecast to occur within the next 35 days under current modelling forecasts.

3.6A The system operator will make a supply shortage declaration for a shortage of transmission capacity if an extended period of unplanned outages at any GXP is forecast to occur within the next 35 days under current modelling forecasts.

3.6B The system operator will revoke the supply shortage declaration when an extended period of unplanned outages at all GXPs will not occur within the next 35 days under current system operator modelling forecasts.

- (a) make a supply shortage declaration when it considers the probability of unplanned outages occurring as a result of a supply shortage is greater than 50%; and
- (b) revoke the supply shortage declaration when it considers the probability of unplanned outages occurring as a result of the supply shortage is 50% or less.

3.63.7 The system operator's determination of the likelihood of unplanned outages will take into account the following factors-

- (a) controlled available hydro storage.
- (b) contingent hydro storage
- (c) historical forecast hydro inflows for the next five weeks 35 days, assuming minimal (1 percentile) daily weekly inflows after the next seven days
- (d) weather and climate forecasts relating to future hydro inflows profiled forecast wind, solar, geothermal, thermal, and run of river hydro generation using weather and climate forecasts.
- (e) expected generation availability, based on the planned outage co-ordination process.
- (f) expected forecast electricity consumption over the next 35 days.
- (g) thermal fuel availability.
- (h) transmission configuration and capacity.

3.73.8 If a supply shortage is caused by a power system event, it is likely any supply shortage declaration will be preceded by a grid emergency caused by a deficit shortfall of energy or instantaneous reserve. If the grid emergency is likely to persist for a sustained period, the

Commented [A15]: We propose the declaration of a supply shortage be made when either:

- an official conservation campaign has commenced; and
- an extended period of unplanned outages at any GXP is forecast to occur within the next 35 days under current modelling forecasts

This is a shortage of electricity supply, such as that resulting from low inflows and subsequent low hydro lake levels.

Or, if an extended period of unplanned outages at any GXP is forecast to occur within the next 35 days under current modelling forecasts. This is a shortage of transmission capacity such as that resulting from unplanned transmission loss or loss of major generation plant. This could happen with little or no warning.

Commented [A16]: We propose to update the inputs used to determine to a supply shortage declaration to accommodate the methodology outlined for declaration of a supply shortage. At a minimum, the inputs need to run out for 35 days. We propose using hydro inflows forecasts for the next five weeks assuming minimal inflows (1 percentile daily inflows) beyond that in the next seven days forecast.

That is, use any forecast rain and resulting inflows for the next seven days, and beyond that use worse case assumptions of 1 percentile inflows for each day. The proposal allows for a worst-case scenario, should it eventuate. This compares with the current methodology of using past hydro inflow sequences, which are unlikely to be worst case or representative of the current situation.

Commented [A17]: Removed the word transmission as capacity issues could be due to lack of generation

Commented [A18]: We propose splitting a declaration of a supply shortage into a declaration for a shortage of electricity supply and a declaration for a shortage of transmission capacity, with slightly different triggers for each.

A shortage of transmission capacity could arise with little or no warning. All that is required is for the modelling to show an extended period of unplanned outages at any GXP within the next 35 days.

Commented [A19]: Changed daily to weekly as daily is too conservative and changing to weekly aligns with weekly review of savings targets

Commented [A20]: Forecast generation will be used for wind, solar, geothermal, thermal, and run of river using weather and climate forecasts. This better accounts for increasing quantities of wind and solar generation;

Commented [A21]: We agree with Clarus: "The word 'profiled' may mean different things to different readers. We suggest replacing this with the more generic 'forecast' as that is fundamentally what it is and the system operator hasn't been specific about its methodology."

Commented [A22]: Expected generation availability will be based on the planned outage co-ordination process information

Commented [A23]: A 35-day demand forecast will be used. This forecast will be adjusted to allow for any expected decrease in demand if an official conservation campaign or commercial arrangements are expected to have reduced some demand (supply shortage due to shortage of electricity supply).

Commented [A24]: The change in clause 3.7 from deficit to shortfall aligns with definitions under real time pricing.

system operator will make a **supply shortage declaration** if it considers the **supply shortage** would be more appropriately managed by **rolling outages**.

Notice period

~~3.83.9~~ During a **developing event** the **system operator** will endeavour to provide at least ~~14~~ **14** ~~seven~~ days' notice to **specified participants** in the region affected by the **supply shortage declaration**, including the time and date the **supply shortage declaration** is likely to be made. If it is not reasonably practicable to provide ~~14~~ **14** ~~seven~~ days' notice, the **system operator** will provide as much prior notice as reasonably practicable.

Commented [A25]: Keep at 14 days, following consideration of submissions

Commented [A26]: Keep at 14 days, following consideration of submissions

~~3.93.10~~ During an **immediate event** the **system operator** will provide as much prior notice as reasonably practicable to **specified participants** in the region affected by the **supply shortage of a supply shortage declaration**, including the time and date the **supply shortage declaration** is likely to be made. However, it is likely a **supply shortage declaration** for an **immediate event** will need to be made without prior notice.

Commented [A27]: Clarus: "The defined term "savings target" should be in bold font."

Commented [A28]: We have added this clarification to address Clarus' submission: "The context suggests the system operator means the target savings will be set to the minimum sufficient to avoid unplanned outages, but isn't explicit about this in the drafting. If it is the system operator's intention to set the smallest savings target necessary that avoids unplanned outages, this should be made explicit."

4. Directions (clause 9.4(c) of the Code)

Savings targets

4.1 A **direction** may contain a **savings target** for the **specified participant** to whom it is given. The **system operator** will set **savings targets** as follows-

Commented [A29]: Energy savings targets are aligned with the declaration of a supply shortage and are set to avoid extended periods of unplanned outages at any GXP within the next 35 days. That is, our modelling will determine what level of savings are required, allowing for the notification timeframe before savings start.

See consultation paper for further details.

(a) The **system operator** will determine the total **demand** or **electricity** consumption savings required in the region affected by the **supply shortage**. ~~The savings targets will be set to the minimum necessary so that there is no extended period of unplanned outages forecast at any GXP within the next 35 days.~~

Commented [A30]: Clarus: "The defined terms "specified participant" and "electricity" should be entirely in bold font."

Commented [A31]: Have re-ordered this clause as per suggestion from Clarus.

(b) ~~The system operator will determine any energy savings target for a specified participant in the affected region as a percentage of the specified participant's forecast electricity consumption for the equivalent period in the previous year over the next 35 days. The system operator will generally set the same energy savings target in percentage terms for all specified participants in the affected region. Specified participants may provide feedback by email to the system operator on their 35-day forecast electricity consumption within 48 hours of receipt of any such forecast if they believe the forecast is inaccurate. The system operator will generally set the same energy savings target in percentage terms for all distributors specified participants in the affected region.~~

Commented [A32]: We propose that energy savings targets would be based on the System Operator's forecast of specified participants' consumption for the next 35 days, not on the equivalent period from the previous year. This change is to allow for any step changes in participant demand in the previous year. With increased electrification we need to provide for changes in demand. For example, a 10% reduction compared to last year would require a larger actual reduction in load in areas with higher demand growth and vice-versa.

As we propose using a 35-day forecast of specified participants electricity consumption for setting savings targets rather than the equivalent period from last year we consider that participants should be provided the opportunity to provide feedback on that forecast if they have information that suggests it may be inaccurate. Specified participants may provide feedback by email to the System Operator on their 35-day forecast of electricity consumption within 48 hours of receipt of any demand forecast if they believe the forecast is inaccurate.

(c) A **savings target** will typically be an **energy savings target** per week, ~~updated weekly on a rolling basis.~~ In some cases (for example, an **immediate event** limited to a particular

Commented [A33]: Savings targets may be amended if participant feedback indicates a need to amend savings for that participant.

Commented [A34]: Energy savings targets are to be updated weekly, on a rolling basis.

area) a **savings target** in the form of a **capacity savings target** may be applied for particular peak periods in addition to, or instead of, a **savings target** in the form of an **energy savings target**.

4.2 The **system operator** ~~will~~ **may** amend the **savings targets** for all or some **specified participants** if it considers there are circumstances that justify it, for example-

- (a) a **grid** reconfiguration
- (b) to manage power system stability
- (c) to minimise the use of hydro storage (by increasing thermal generation elsewhere)
- (d) **specified participant feedback indicates a system security, operational reason or operational restriction need to amend savings for that participant.**
- (e) **Operational reasons or operational restrictions may include (but are not limited to) reasons such as constraints on reducing load in blocks or steps, impacts to AUFLS, impacts on plant or personnel safety, impacts to system security, or co-dependent processes where reducing load could increase a net load.**

Commented [A35]: The system operator will generally set the same energy savings target in percentage terms for all specified participants in the affected region.

Commented [A36]: Moved this from clause 6.20 to here and removed economic reasons following submissions. Have added operational reasons and restrictions to retain flexibility for some loads. Note this clause applies to all specified participants.

Commented [A37]: Have added criteria for operational reasons or restrictions

Notice period

4.3 During a **developing event** the **system operator** will endeavour to provide at least ~~nine~~ **nine** ~~seven~~ days' notice to relevant **specified participants** of a **direction** containing a **savings target**, including the times and dates the **savings target** will **likely** apply. If it is not reasonably practicable to provide ~~nine~~ **nine seven** days' notice, the **system operator** will provide as much prior notice as reasonably practicable.

Commented [A38]: Stay at nine days following consideration of submissions (and reading some participant rolling outage plans)

Commented [A39]: Stay at nine days following consideration of submissions (and reading some participant rolling outage plans)

4.4 During an **immediate event** the **system operator** will provide as much prior notice as reasonably practicable to relevant **specified participants** of a **direction** containing a **savings target**, including the times and dates the **savings target** will likely apply. However, it is likely a **direction** for an **immediate event** will need to be given without prior notice.

Changes to Rolling Outage Start and End Times

4.5 The **system operator** must notify **specified participants** of any required changes to the start or end times of rolling outages, once advised by the **specified participant**. It is possible that restrictions on the timing and location of **rolling outages** may need to be stipulated by the **system operator**.

Commented [A40]: Moved from section 6 as this sits with directions not a requirement of a PROP

Monitoring

4.6 The **system operator** will use information provided by **specified participants** and information otherwise available to the **system operator** to continuously monitor **specified participants'** performance against **savings targets**.

4.7 The **system operator** will provide, on a daily basis, each **specified participant distributor (other than grid owners) or direct consumer** to whom a **direction** containing a **savings target** applies, with actual **electricity** consumption data for the **grid exit points** at which the **specified participant's distributor's or direct consumer's assets** are connected to the **grid**. The data will be the **specified participant's distributor's or direct consumer's electricity** consumption (in MWh) during the previous 24 hours (beginning at midnight) for each **grid exit point** at which the **specified participant's distributor's or direct consumer's assets** are connected to the **grid**.

Commented [A41]: Changed consistent with Clarus' submission that "specified participant" is used elsewhere in the SOROP.

5. **Specified participants required to develop participant rolling outage plans** ~~(clause 9.4(d) of the Code)~~

Commented [A42]: The Code reference in the section title is removed for consistency.

5.1 Each **specified participant distributor (other than grid owners) and direct consumer** must develop a **participant rolling outage plan** unless the **specified participant's distributor's or direct consumer's electricity** consumption is less than 60 GWh per calendar year.

6. **Criteria, methodologies, and principles** ~~(clauses 9.4(e) and 9.4(f) of the Code)~~ **to be provided for in participant rolling outage plans**

- 6.1 This paragraph 6 sets out the criteria, methodologies and principles ~~to be~~
- (a) applied by **specified participants** (whether or not they have developed a **participant rolling outage plan**) in implementing **rolling outages**, or taking any other action, in accordance with **directions**.
 - (b) provided for in **participant rolling outage plans** for those **specified participants** which are required to develop them.

Commented [A43]: Changed in accordance with Clarus' submission that "This clause should specify the units of measurement. We presume the system operator wants to receive average MW for each half hour."

Coordination with system operator

6.2 **Specified participants** must coordinate the implementation of their **rolling outages** with the **system operator** using the contact information specified in clause 6.5. This co-ordination is in order to ensure that **rolling outages** across an affected region do not have unexpected power system outcomes.

6.2A Specified participants must provide a rolling seven days planned outage list, updated daily, once their savings targets have been notified. These lists will include daily outage start and restore times per GXP. This list is to be provided on a reasonable endeavours basis.

Commented [A44]: Added for clarity. Most participant PROPs are already on such a basis

6.2B Specified participants must provide half hourly GXP level demand forecast information (in MW) for conforming GXPs for the week ahead on a rolling daily basis, once their savings targets have been notified. This information is to be provided on a reasonable endeavours basis.

Commented [A45]: Added for clarity. Most participant PROPs are already on such a basis

6.2C Specified participants must provide updated bid information for non-conforming GXPs for the week ahead submitted via WITS in the usual manner, once their savings targets have been notified.

6.2D Participant rolling outage plans must include the requirement for specified participants to provide the information in clauses 6.2A and 6.2B to the system operator by email, updated on a daily basis.

6.2E The system operator must advise participants of any requested changes to the start or end times of rolling outages. It is possible that restrictions on the timing and location of rolling outages may need to be stipulated by the system operator.

Commented [A46]: This clause has been moved to section 4 as it fits better there. As per suggestion from Clarus

6.3 Each participant rolling outage plan must describe the specified participant's arrangements for disconnecting and restoring demand state that after receiving a direction a specified participant must use best endeavours to-

- (a) not increase or decrease its demand by more than 25 MW (in aggregate across all the specified participant's GXPs) in any five-minute period without the system operator's prior approval.
- (b) minimise the impact on frequency and voltage stability.
- (c) minimise the disconnection and restoration of its demand during times when demand is typically ramping down and restoration of its demand when demand is typically ramping up or down in the region affected by the supply shortage (for example, either side of morning and evening peaks).

Commented [A47]: Change made in accordance with Clarus' submission: "This clause should specify how demand is measured. If a distributor has more than one GXP, is it a 25 MW movement per GXP? Is the demand net of generation behind the GXP, or gross demand?"

Commented [A48]: Reworded to align ramping down with disconnection and ramping up with reconnection as per suggestion from Clarus

6.4 Each participant rolling outage plan must list in a table format-

- (a) list the specified participant's GXPs at which rolling outages may occur
- (b) list the specified participant's GXPs at which rolling outages will not occur along with reasons why rolling outages will not occur at those GXPs.

Commented [A49]: We are proposing that specified participants, upon notification of their savings targets, must provide a rolling seven-day planned outage list, updated daily. The list is to include daily outage and restoration times, and half hourly daily demand forecast information for each GXP.

See consultation paper for more details.

Communications

6.5 ~~Each participant rolling outage plan must identify at minimum two key personnel for the system operator to contact about matters relating to supply shortages, supply shortage declarations, directions and rolling outages, being-~~

- (a) ~~an operational contact for all operational matters (typically an operations manager).~~
- (b) ~~a managerial contact for all administrative matters and escalation (typically a senior manager or regulatory specialist).~~

Each participant rolling outage plan must specify all personnel of the specified participant who will be involved in implementing the participant rolling outage plan and their roles, including-

- (a) ~~a minimum of two key personnel (including contact details and any preferred means of communication with these key personnel) for the system operator to contact about matters relating to supply shortages, supply shortage declarations, directions and rolling outages, being:~~
 - i. ~~an operational contact for all operational matters (typically an operations manager)~~
 - ii. ~~a managerial contact for all administrative matters and escalation (typically a senior manager or regulatory specialist).~~
- (b) ~~any other personnel responsible for reporting to the system operator on the specified participant's performance against savings targets~~
- (c) ~~the personnel responsible for communicating with public agencies (for example, police, civil defence, and local authorities) and the media (if required).~~
- (d) ~~contact details for the system operator including a general email for administrative matters and email and phone number for operational matters.~~

The system operator notices under paragraphs 3.9, 3.10, 4.3 and 4.4 will be sent to the operational contact and managerial contact, ~~unless the participant rolling outage plan specifies otherwise.~~ Directions will typically be sent to the operational contact only.

6.6 ~~Each participant rolling outage plan must contain contact details for the key personnel referred to in paragraph 6.5 and note any preferred means of communication with them. Contact details for the key personnel must be withheld or redacted before being published publicly on the participant's website but must be included in the participant rolling outage plan sent to the system operator for approval. Contact details should include phone and email or alternatively a 24-hour email.~~

Commented [A50]: Deleted as per suggestion from Clarus

Commented [A51]: Deleted as per suggestion from Clarus

Commented [A52]: All contact details requirements are proposed to be combined under one clause. All PROPs are proposed to include contact information for the System Operator. This proposal is just to reduce the areas where contact information is required and condense into one clause and ensure participants have System Operator contact information, especially as this may be required to co-ordinate the start and end times for rolling outages.

Commented [A53]: Modified as per suggestion from Clarus. We agree customer contact details must be withheld although most already do so.

Commented [A54]: Specified participants must redact contact information in their plans before publishing on their website but must include this information in the version sent to the System Operator for approval. This is merely for clarification and to ensure that PROPs sent to the System Operator for approval have full contact information.

6.7 As well as complying with any **system operator** information requirements under clause 9.18 of the **Code**, each **specified participant** to whom a **direction** containing a **savings target** applies must regularly provide information to the **system operator** about the **specified participant's** performance against the **savings target**, including:

- (a) the nature and extent of the **rolling outages** implemented by the **specified participant**
- (b) any other information requested by the system operator in order to monitor specified participants' performance against savings targets.

Prioritisation of demand to be disconnected by distributors

6.8 A **distributor** should disconnect **demand** on its **network** for **rolling outages** in accordance with a priority list. [The table below is a guideline only]. Distributors should make pragmatic decisions on the priority order based on particular circumstances and their knowledge of local communities. ~~the following priorities.~~ Priority 1 is the **demand** that should least readily be disconnected and priority 6 is the **demand** that should most readily be disconnected.

Commented [A55]: We have added a proposal that the system operator may request additional information to monitor specified participants performance against savings targets. This is just to ensure that if any additional information is found to be required to assess performance, then it can be.

Commented [A56]: Changed to clarify this table is a guideline only

Commented [A57]: The table is a guide only and based on information contained in section 13 of the National Civil Defence Emergency Management Plan 2015. Transpower does not instruct which loads must be disconnected and does not consider, in its role as System Operator, that it has any particular advantage over electricity distributors in making judgment about who should get disconnected first.

Distributors can and should make pragmatic decisions about disconnection based on their particular circumstances and knowledge of local communities.

P	Priority Concern	Maintain Supply to:
1	<u>Critical</u> public health and safety	Critical health and disability services e.g. major hospitals, air traffic control centres, emergency operation centres.
2	<u>Maintaining</u> Important public services	Lifelines infrastructure e.g. energy control centres, communication networks, water and sewage pumping, fuel delivery systems, major ports, public passenger transport, major
3	Public health and safety	Vulnerable sectors e.g. rest homes, prisons, medical centres, schools, street
4	Animal health and food	Dairy farms, milk production facilities, chicken sheds, cool stores.
5	<u>Maintaining Domestic</u>	Central business districts, commercial and industrial premises.
6	<u>Avoiding Disruption to</u>	Residential premises.

*Reference: priorities in this table are based on information contained in section 13 of the National Civil Defence Emergency Management Plan 2015.

These priorities are intended as a guide. They do not prevent distributors making pragmatic decisions based on particular circumstances and their knowledge of local communities.

Distributors should bear in mind the expectations that the Electricity Authority has set in the consumer care guidelines, any consumer care requirements under the Code and ensure that all electricity retailers are adequately informed and advised to contact their medically dependent consumers to make arrangements.

Commented [A58]: This note added as a reminder for EDBs to consider the consumer care guidelines and ensure retailers are informed and contact their medically dependent customers

6.9 **Distributors** are responsible for communicating and co-ordinating with electricity **retailers**, major **consumers** on their networks, police, health authorities and other major infrastructure providers who may be affected by **rolling outages**. and for managing the impact of rolling outages on any consumers identified as having health and safety issues.

6.9A Each **distributor's participant rolling outage plan** must describe outline the arrangements in place between the **distributor** and **retailers** for identifying and managing health and safety issues affecting **consumers** on the **distributor's network**.

6.10 A **distributor's participant rolling outage plan** must include (a) information about any agreements between the **distributor** and **retailers** or **consumers** on its **network** that may adversely affect the **distributor's** ability to comply with **directions** or state if there is no such agreement.

(b) whether any of the demand on the participant's network is for the provision of other services, such as interruptible load or extended reserves (including AUFLS).

6.11 The **system operator** will not determine which **consumers' demand** on a **distributor's network** is disconnected for **rolling outages**. Feeder level information does not need to be provided in participant rolling outage plans.

Commented [A59]: We are proposing to add clarity that distributors are not required to provide feeder level information and information on automatic under-frequency load shedding (AUFLS) and interruptible load is not required. This information is not required by the System Operator from PROPs.

Capability of achieving savings targets

6.12 In order for **specified participants** to demonstrate they are capable of meeting **directions** each **participant rolling outage plan** must-

(a) describe how the **specified participant** intends to meet **energy savings targets** and **capacity savings targets**

(b) demonstrate the specified participant will be capable of achieving an energy savings target of up to a 25% reduction of its forecast electricity consumption for the same period in the previous year, based on the load from the most recent month of August prior to the current date. This information must be provided in a table format showing:

Commented [A60]: Have added for load that can't achieve exactly 5% increments

- i. how energy savings targets of 5%, 10%, 15%, 20% and 25% reductions, or closest amount to these percentages practicable, would be achieved.
- ii. the priority loads (using the table in clause 6.98 as a guide) to be disconnected.
- iii. the duration each priority load is to be disconnected on each day.

Commented [A61]: We are proposing to add clarification that the load on which to base the demonstration of savings targets (clause 6.12 (b)) is to be based on the load from the most recent month of August prior to the current date and provided in a table format.

This is to provide clarity around which time of the year to base the level of savings on and the format this should be provided in. The month of August was chosen as this aligns with a time of the year when demand peaks and the risk of low hydro lake levels coincide. This clause also clarifies that the information must be provided in a table format for 5%, 10%, 15%, 20% and 25% savings, and that the information must show the prioritisation of loads (using the table in clause 6.8 as a guide).

For the avoidance of doubt, an **energy savings target** may be more than a 25% reduction of the **specified participant's forecast electricity** consumption. ~~for the same period in the previous year.~~

6.13 Each **participant rolling outage plan** must describe the **specified participant's** methodology for implementing **rolling outages** that includes-

- (a) Acknowledgment, within 48 hours of receipt of a **direction by return email to the system operator, unless otherwise specified in the direction.** ~~If no acknowledgement is received within 48 hours the system operator will call the person or persons listed in clause 6.5.~~
- (b) **for developing events**, the methodology for planning for disconnection of **demand electricity** (~~nine~~ **nine seven** days out to real time)
- (c) how disconnection of **demand electricity will be implemented** (real time)
- (d) how restoration of **demand electricity will be implemented** (real time)
- (e) **monitoring of compliance with the direction.**

6.14 ~~If no acknowledgement, as per clause 6.13 is received within 48 hours the system operator will call the person or persons listed in clause 6.5.~~

6.14 ~~A distributor is **Specified participants** are not required to include a list of all feeders, or the sequence of outages to be applied to those feeders, in its **participant rolling outage plan.**~~

~~In addition to the key personnel described in paragraph 6.5 of this Plan, each **participant rolling outage plan** must specify all personnel of the **specified participant** who will be involved in implementing the **participant rolling outage plan** and their roles, including-~~

- (a) ~~the personnel responsible for reporting to the system operator on the **specified participant's** performance against **savings targets**~~
- (b) ~~the personnel responsible for communicating with public agencies (for example, police, civil defence and local authorities) and the media (if required). *[Revoked]*~~

Continuing compliance with other Code obligations

6.15 A **specified participant** to which a **direction** applies must continue to comply with all of its other obligations under the **Code**. Without limitation:

- (a) the **specified participant** must make and revise its **bids** and **reserve offers** to take into account its obligation to comply with the **direction**
- (b) if there is a **grid emergency**, the **specified participant** must comply with its obligations under the **Code** that apply in **grid emergencies**

Commented [A62]: This statement moved to its own clause as its an SO obligation not a specied participant obligation.

Commented [A63]: We agree with Clarus: "The system operator's obligation should not be tacked on to the end of this subclause. A new 6.13A should be created clearly setting out the system operator's obligations. The system operator should have a new requirement to specify the acknowledgement window in its direction."

Commented [A64]: Demand changed to electricity (which is measured in kWh) as per suggestion from Clarus

Commented [A65]: Stay at nine days following consideration of submissions (and reading some participant rolling outage plans)

Commented [A66]: Clause 6.13 has been changed to ensure a direction has been correctly received and is acknowledged with 48 hours.

Commented [A67]: Split this requirement out from 6.13(a) as this obligation relates to the System Operator as per suggestion from Clarus.

Commented [A68]: Previous clause 6.14 has been updated to cover all specified participants.

Commented [A69]: Previous clause 6.15 has been revoked as this is now covered under clause 6.5.

- (c) despite the **direction**, the **specified participant** must remain capable of providing any **automatic under-frequency load shedding** ~~or **extended reserve**~~ it is obliged to provide under the **Code**. **Specified participants may move automatic under-frequency load shedding between feeders to maintain this obligation.**

Commented [A70]: The reference to extended reserve is removed and we have proposed a clarification that specified participants may move AUFLS between feeders to maintain the obligation.

*Full information plans for direct consumers **Energy Savings Targets for specified participants***

6.16 ~~A full information plan is a direct consumer's participant rolling outage plan that contains the following information-~~

- (a) ~~the nature of the **direct consumer's demand**~~
- (b) ~~whether any of the **demand** is for the provision of other services, such as **interruptible load or extended reserve** (including **AUFLS**)~~
- (c) ~~constraints on the disconnection of the **demand** (for example, notice periods and maximum durations)~~
- (d) ~~the extent to which different levels of **target savings** could be achieved (for example, whether a 10% **energy savings target** is significantly more easily achieved than a 20% **energy savings target**)~~
- (e) ~~the costs associated with achieving different levels of **target savings**. *[Revoked]*~~

6.17 ~~A direct consumer may, at any time, update its participant rolling outage plan with information that meets the requirements of a full information plan. *[Revoked]*~~

6.18 ~~If a direct consumer's participant rolling outage plan is a full information plan, the system operator may set energy savings targets for the direct consumer different in percentage terms to the energy savings targets for distributors in the region affected by the supply shortage, taking into account the information in the full information plan. Otherwise, the energy savings targets for the direct consumer will likely be the same in percentage terms as the energy savings targets for distributors in the affected region. *[Revoked]*~~

6.19 ~~All specified participants within the region affected by the supply shortage will likely be set the same energy savings targets (in percentage terms) unless specified participant feedback on energy savings targets (as per clause 4.2) indicate strong system security or economic reasons reasons to vary those targets. The system operator may (at its sole discretion) vary or amend the energy savings targets for any specified participants after considering any specified participant feedback.~~

Commented [A71]: We have proposed removing the requirements for directly connected parties to provide a full or partial information plan with their participant rolling outage plan.

Full information plans may have been used to set different savings levels for directly connected parties compared to electricity distributors within the same affected region. However, during a developing event whether different savings targets should be set is best based on information at the time rather than communicated through a participant rolling outage plan that may be a couple of years old.

The provision to provide feedback on forecast demand (used to set savings targets) is in the proposed clause 4.1(b) while the provision to provide feedback on savings targets is in the proposed clause 4.2(d).

Providing a full or partial information plan thus has no relevance and only creates an unnecessary administrative overhead, and for this reason we propose deleting this requirement.

Commented [A72]: Have removed the term economic reasons and replaced with reference to clause 4.2 which now has operational reasons or restrictions

Commented [A73]: We have proposed a clarification that all specified participants within a region are likely to be set the same energy savings targets in percentage terms, notwithstanding the provision for participants to provide feedback on their savings targets should there be any reason that the System Operator accepts that indicates a need to amend savings for that participant.



Appendix B Amended System Operator Rolling Outage Plan

System Operator Rolling Outage Plan

Effective from 1 September 2024

1. Background

- 1.1 This Plan is the **system operator rolling outage plan**, which the **system operator** is required to prepare and **publish** under clause 9.2 of the **Code**.
- 1.2 This Plan provides for the management and co-ordination of planned **outages** as an emergency measure during energy shortages.
- 1.3 Other policies and procedures detail how the **system operator** will provide security of supply related information and respond in other ways to emergencies and security of supply situations. These include the **security of supply forecasting and information policy**, the **emergency management policy**, the **policy statement**, and the clauses of the **Code** relating to **grid emergencies**.

2. Glossary

- 2.1 In this Plan, unless the context otherwise requires-

capacity savings target means a **savings target** expressed as a maximum instantaneous **demand** (in MW) during a period.

Code refers to the Electricity Industry Participation Code 2010.

available hydro storage has the meaning given to that term in the **security of supply forecasting and information policy**.

contingent hydro storage has the meaning given to that term in the **security of supply forecasting and information policy**.

developing event means an event arising over time that could cause a **supply shortage**. An example of a **developing event** is an extended period of reduced generating capacity.

direction means a direction given by the **system operator** to a **specified participant** under clause 9.15(1) of the **Code**.

energy savings target means a **savings target** expressed as a percentage of the **specified participant's forecast electricity** consumption (in MWh) as forecast over a period of time.

extended emergency has the meaning given to that term in the **emergency management policy**.

immediate event means an event arising with little or no time that could cause a **supply shortage**. An example of an **immediate event** is an unexpected outage of a major transmission line or **generating plant**.

outage means a reduction in **demand** or **electricity** consumption due to a lack of **electricity** supply or capacity. This is as defined for the SOROP, although is contrary to Part 12 of the Code and Transpower's quality standards under the IPP.

rolling outages means reductions in **demand** or **electricity** consumption implemented by **specified participants** in order to comply with a **direction**.

savings target means a **demand** or **electricity** consumption target contained within a **direction**.

supply shortage means a situation when the **system operator** considers that the normal operation of the spot market for **electricity** is, or will soon be, unlikely to facilitate the adjustment of supply and **demand** necessary to ensure supply matches **demand** for extended periods of time and if planned **outages** are not implemented, unplanned **outages** are likely.

- 2.2 References in this Plan to a **distributor's demand** or **electricity** consumption mean the **demand** or **electricity** consumption on the **distributor's network**.
- 2.3 References in this Plan to **specified participants** include **distributors** and persons who use **electricity** that is conveyed directly from the **grid** but does not include **retailers** and **line owners** (other than **distributors**).
- 2.4 Any term in bold that is not defined in this Plan is defined in the Code.

3. Supply shortages and supply shortage declarations

Supply shortages

- 3.1 Clause 9.14(2) of the **Code** provides that the **system operator** may make a **supply shortage declaration**.
- 3.2 A **supply shortage** does not constitute an **unsupplied demand situation**. A **supply shortage** may coincide with such a situation.
- 3.3 *[Revoked]*
- 3.4 A **supply shortage** is a condition of an **extended emergency**. The **emergency management policy** sets out various means available to the **system operator** to manage **extended emergencies**, which include **rolling outages**.

Thresholds for supply shortage declarations

- 3.5 Under clause 9.14(1) of the **Code** the **system operator** has discretion to make a **supply shortage declaration** when there is a **supply shortage**.
- 3.6 The **system operator** will make a **supply shortage declaration** for a shortage of **electricity** supply if-
- (a) an **official conservation campaign** has commenced; and
 - (b) an extended period of unplanned **outages** at any **GXP** is forecast to occur within the next 35 days under current modelling forecasts.
- 3.6A The **system operator** will make a **supply shortage declaration** for a shortage of capacity if an extended period of unplanned **outages** at any **GXP** is forecast to occur within the next 35 days under current modelling forecasts.
- 3.6B The **system operator** will revoke the **supply shortage declaration** when an extended period of unplanned **outages** at all **GXPs** will not occur within the next 35 days under current **system operator** modelling forecasts.
- 3.7 The **system operator's** determination of unplanned **outages** will take into account the following factors-
- (a) **available hydro storage**
 - (b) **contingent hydro storage**
 - (c) forecast hydro inflows for the next 35 days, assuming minimal (1 percentile) weekly inflows after the next seven days
 - (d) forecast wind, solar, geothermal, thermal, and run of river hydro generation using weather and climate forecasts.
 - (e) expected generation availability, based on the planned outage co-ordination process
 - (f) forecast **electricity** consumption over the next 35 days.
 - (g) thermal fuel availability
 - (h) transmission configuration and capacity.
- 3.8 If a **supply shortage** is caused by a power system event, it is likely any **supply shortage declaration** will be preceded by a **grid emergency** caused by a shortfall of energy or **instantaneous reserve**. If the **grid emergency** is likely to persist for a sustained period, the **system operator** will make a **supply shortage declaration** if it considers the **supply shortage** would be more appropriately managed by **rolling outages**.

Notice period

- 3.9 During a **developing event** the **system operator** will endeavour to provide at least 14 days' notice to **specified participants** in the region affected by the **supply shortage** of a **supply shortage declaration**, including the time and date the **supply shortage declaration** is likely to be made. If it is not reasonably practicable to provide 14 days' notice, the **system operator** will provide as much prior notice as reasonably practicable.
- 3.10 During an **immediate event** the **system operator** will provide as much prior notice as reasonably practicable to **specified participants** in the region affected by the **supply shortage** of a **supply shortage declaration**, including the time and date the **supply shortage declaration** is likely to be made. However, it is likely a **supply shortage declaration** for an **immediate event** will need to be made without prior notice.

4. Directions

Savings targets

- 4.1 A **direction** may contain a **savings target** for the **specified participant** to whom it is given. The **system operator** will set **savings targets** as follows-
- (a) The **system operator** will determine the total **demand** or **electricity** consumption savings required in the region affected by the **supply shortage**. The **savings targets** will be set to the minimum necessary so that there is no extended period of unplanned **outages** forecast at any **GXP** within the next 35 days.
 - (b) The **system operator** will determine any **energy savings target** for a **specified participant** in the affected region as a percentage of the **specified participant's** forecast **electricity** consumption over the next 35 days. The **system operator** will generally set the same **energy savings target** in percentage terms for all **specified participants** in the affected region. **Specified participants** may provide feedback by email to the **system operator** on their 35-day forecast **electricity** consumption within 48 hours of receipt of any such forecast if they believe the forecast is inaccurate.
 - (c) A **savings target** will typically be an **energy savings target** per week, updated weekly on a rolling basis. In some cases (for example, an **immediate event** limited to a particular area) a **savings target** in the form of a **capacity savings target** may be applied for particular peak periods in addition to, or instead of, a **savings target** in the form of an **energy savings target**.
- 4.2 The **system operator** may amend the **savings targets** for all or some **specified participants** if it considers there are circumstances that justify it, for example-
- (a) a **grid** reconfiguration

- (b) to manage power system stability
- (c) to minimise the use of hydro storage (by increasing thermal generation elsewhere)
- (d) **specified participant** feedback indicates a system security, operational reason or operational restriction to amend savings for that participant.
- (e) Operational reasons or operational restrictions may include (but are not limited to) reasons such as constraints on reducing load in blocks or steps, impacts to AUFLS, impacts on plant or personnel safety, impacts to system security, or co-dependent processes where reducing load could increase a net load.

Notice period

- 4.3 During a **developing event** the **system operator** will endeavour to provide at least nine days' notice to relevant **specified participants** of a **direction** containing a **savings target**, including the times and dates the **savings target** will apply. If it is not reasonably practicable to provide nine days' notice, the **system operator** will provide as much prior notice as reasonably practicable.
- 4.4 During an **immediate event** the **system operator** will provide as much prior notice as reasonably practicable to relevant **specified participants** of a **direction** containing a **savings target**, including the times and dates the **savings target** will likely apply. However, it is likely a **direction** for an **immediate event** will need to be given without prior notice.

Changes to Rolling Outage Start and End Times

- 4.5 The **system operator** must notify **specified participants** of any required changes to the start or end times of rolling outages, once advised by the **specified participant**. It is possible that restrictions on the timing and location of **rolling outages** may need to be stipulated by the **system operator**.

Monitoring

- 4.6 The **system operator** will use information provided by **specified participants** and information otherwise available to the **system operator** to continuously monitor **specified participants'** performance against **savings targets**.
- 4.7 The **system operator** will provide, on a daily basis, each **specified participant** to whom a **direction** containing a **savings target** applies, with actual **electricity** consumption data for the **grid exit points** at which the **specified participant's assets** are connected to the **grid**. The data will be the **specified participant's electricity** consumption (in MWh) during the previous 24 hours (beginning at midnight) for each **grid exit point** at which the **specified participant's assets** are connected to the **grid**.

5. Specified participants required to develop participant rolling outage plans

5.1 Each **specified participant** must develop a **participant rolling outage plan** unless the **specified participant's** electricity consumption is less than 60 GWh per calendar year.

6. Criteria, methodologies, and principles to be provided for in participant rolling outage plans

6.1 This paragraph 6 sets out the criteria, methodologies and principles to be-

(a) applied by **specified participants** (whether or not they have developed a **participant rolling outage plan**) in implementing **rolling outages**, or taking any other action, in accordance with **directions**.

(b) provided for in **participant rolling outage plans** for those **specified participants** which are required to develop them.

Coordination with system operator

6.2 **Specified participants** must coordinate the implementation of their **rolling outages** with the **system operator** using the contact information specified in clause 6.5. This co-ordination is to ensure that **rolling outages** across an affected region do not have unexpected power system outcomes.

6.2A **Specified participants** must provide a rolling seven days planned **outage** list, updated daily, once their **savings targets** have been notified. These lists will include daily **outage** start and restore times per **GXP**. This list is to be provided on a reasonable endeavours basis.

6.2B **Specified participants** must provide half hourly **GXP** level **demand** forecast information (in MW) for **conforming GXPs** for the week ahead on a rolling daily basis, once their savings targets have been notified. This information is to be provided on a reasonable endeavours basis.

6.2C **Specified participants** must provide updated bid information for **non-conforming GXPs** for the week ahead submitted via **WITS** in the usual manner, once their **savings targets** have been notified.

6.2D **Participant rolling outage plans** must include the requirement for **specified participants** to provide the information in clauses 6.2A and 6.2B to the **system operator** by email, updated on a daily basis.

6.3 Each **participant rolling outage plan** must state that after receiving a **direction** a **specified participant** must use best endeavours to-

- (a) not increase or decrease its **demand** by more than 25 MW (in aggregate across all the **specified participant's GXPs**) in any five-minute period without the **system operator's** prior approval,
- (b) minimise the impact on frequency and voltage stability,
- (c) minimise the disconnection of its **demand** during times when **demand** is typically ramping down and restoration of its **demand** when **demand** is typically ramping up in the region affected by the **supply shortage** (for example, either side of morning and evening peaks).

6.4 Each **participant rolling outage plan** must list in a table format-

- (a) the **specified participant's GXPs** at which **rolling outages** may occur
- (b) the **specified participant's GXPs** at which **rolling outages** will not occur along with reasons why **rolling outages** will not occur at those **GXPs**.

Communications

6.5 Each **participant rolling outage plan** must specify all personnel of the **specified participant** who will be involved in implementing the **participant rolling outage plan** and their roles, including-

- (a) a minimum of two key personnel (including contact details and any preferred means of communication with these key personnel) for the **system operator** to contact being:
 - i. an operational contact for all operational matters (typically an operations manager)
 - ii. a managerial contact for all administrative matters and escalation (typically a senior manager or regulatory specialist).
- (b) any other personnel responsible for reporting to the **system operator** on the **specified participant's** performance against **savings targets**
- (c) the personnel responsible for communicating with public agencies (for example, police, civil defence, and local authorities) and the media
- (d) contact details for the **system operator** including a general email for administrative matters and email and phone number for operational matters.

The **system operator** notices under paragraphs 3.9, 3.10, 4.3 and 4.4 will be sent to the operational contact and managerial contact, unless the **participant rolling outage plan** specifies otherwise. **Directions** will typically be sent to the operational contact only.

- 6.6 Contact details for the key personnel must be withheld or redacted before being published publicly on the **participant’s** website but must be included in the **participant rolling outage plan** sent to the **system operator** for approval. Contact details should include phone and email or alternatively a 24-hour email.
- 6.7 As well as complying with any **system operator** information requirements under clause 9.18 of the **Code**, each **specified participant** to whom a **direction** containing a **savings target** applies must regularly provide information to the **system operator** about the **specified participant’s** performance against the **savings target**, including:
- (a) the nature and extent of the **rolling outages** implemented by the **specified participant**
 - (b) any other information requested by the **system operator** in order to monitor **specified participants’** performance against **savings targets**.

Prioritisation of demand to be disconnected by distributors

- 6.8 A **distributor** should disconnect **demand** on its **network** for **rolling outages** in accordance with a priority list. The table below is a guideline only. **Distributors** should make pragmatic decisions on the priority order based on particular circumstances and their knowledge of local communities. Priority 1 is the **demand** that should least readily be disconnected and priority 6 is the **demand** that should most readily be disconnected.

P	Priority Concern	Maintain-Supply to:
1	Critical public health and safety	Critical health and disability services e.g. major hospitals, air traffic control centres, emergency operation centres.
2	Important public services	Lifelines infrastructure e.g. energy control centres, communication networks, water and sewage pumping, fuel delivery systems, major ports, public passenger transport, major
3	Public health and safety	Vulnerable sectors e.g. rest homes, prisons, medical centres, schools, street
4	Animal health and food	Dairy farms, milk production facilities, chicken sheds, cool stores.
5	Domestic Production	Central business districts, commercial and industrial premises.
6	Households	Residential premises.

*Reference: priorities in this table are based on information contained in section 13 of the National Civil Defence Emergency Management Plan 2015.

Distributors should bear in mind the expectations that the Electricity Authority has set in the consumer care guidelines, any consumer care requirements under the Code and ensure that all electricity retailers are adequately informed and advised to contact their medically dependent consumers to make arrangements.

- 6.9 **Distributors** are responsible for communicating and co-ordinating with electricity **retailers**, major **consumers** on their networks, police, health authorities and other major infrastructure providers who may be affected **by rolling outages**.
- 6.9A Each **distributor's participant rolling outage plan** must outline the arrangements in place between the **distributor** and **retailers** for identifying and managing health and safety issues affecting **consumers** on the **distributor's network**.
- 6.10 A **distributor's participant rolling outage plan** must include information about any agreements between the **distributor** and **retailers** or **consumers** on its **network** that may adversely affect the **distributor's** ability to comply with **directions** or state if there is no such agreement.
- 6.11 The **system operator** will not determine which **consumer's demand** on a **distributor's network** is disconnected for **rolling outages**. Feeder level information does not need to be provided in **participant rolling outage plans**.

Capability of achieving savings targets

- 6.12 In order for **specified participants** to demonstrate they are capable of meeting **directions** each **participant rolling outage plan** must-
- (a) describe how the **specified participant** intends to meet **energy savings targets** and **capacity savings targets**
 - (b) demonstrate the **specified participant** will be capable of achieving an **energy savings target** of up to a 25% reduction of its forecast **electricity** consumption based on the load from the most recent month of August prior to the current date. This information must be provided in a table format showing:
 - i. how **energy savings targets** of 5%, 10%, 15%, 20% and 25% reductions, or closest amount to these percentages practicable, would be achieved.
 - ii. the priority loads (using the table in clause 6.8 as a guide) to be disconnected.
 - iii. the duration each priority load is to be disconnected on each day.

For the avoidance of doubt, an **energy savings target** may be more than a 25% reduction of the **specified participant's** forecast **electricity** consumption.

- 6.13 Each **participant rolling outage plan** must describe the **specified participant's** methodology for implementing **rolling outages** that includes-
- (a) Acknowledgment, within 48 hours of receipt of a **direction** by return email to the **system operator**, unless otherwise specified in the **direction**.
 - (b) for **developing events**, the methodology for planning for disconnection of **electricity** (nine days out to real time)
 - (c) how disconnection of **electricity** will be implemented (real time)
 - (d) how restoration of **electricity** will be implemented (real time)
 - (e) monitoring of compliance with the **direction**.
- 6.14 If no acknowledgement, as per clause 6.13 is received within 48 hours the **system operator** will call the person or persons listed in clause 6.5.

Continuing compliance with other Code obligations

- 6.15 A **specified participant** to which a **direction** applies must continue to comply with all of its other obligations under the **Code**. Without limitation:
- (a) the **specified participant** must make and revise its **bids** and **reserve offers** to take into account its obligation to comply with the **direction**
 - (b) if there is a **grid emergency**, the **specified participant** must comply with its obligations under the **Code** that apply in **grid emergencies**
 - (c) despite the **direction**, the **specified participant** must remain capable of providing any **automatic under-frequency load shedding** it is obliged to provide under the **Code**. **Specified participants** may move **automatic under-frequency load shedding** between feeders to maintain this obligation.

Energy Savings Targets for specified participants

- 6.16 All **specified participants** within the region affected by the **supply shortage** will likely be set the same **energy savings targets** (in percentage terms) unless **specified participant** feedback on **energy savings targets** (as per clause 4.2) indicate reasons to vary those targets. The **system operator** may (at its sole discretion) vary or amend the **energy savings targets** for any **specified participants** after considering any **specified participant** feedback.