System Operator Rolling Outage Plan Review

Consultation – February 2024

Transpower New Zealand Limited

Keeping the energy flowing

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IMPORTANT

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1 Executive summary

1. The purpose of this consultation is to seek feedback on 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 SOROP is one of our key security of supply planning and policy documents.
3. The SOROP outlines when rolling outages can be triggered, and how rolling outages can be triggered, including how electricity distribution businesses and direct connects would initiate rolling outages – through their Participant Rolling Outage Plans (**PROPs**).[2] Rolling outages can be used to help avoid large unplanned outages in the future by reducing load. These conditions would only be expected during an extended emergency.
4. 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 2023/24.[3]

1.1 Problems we have identified

5. We consider that there are a number of issues with the current version of the SOROP:
    - 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.
    - The thresholds for declaration of a supply shortage are not set out separately for each type of supply shortage (the System Operator may make supply shortage declarations for shortages of electricity supply as well as shortages of transmission capacity to manage shortage of supply situations, see clause 9.14 of the Code).
    - The objectives of energy savings targets are not defined.
    - The calculations of how energy savings targets are to be set is not defined.
    - The requirements for PROP are inadequate to allow the System Operator to closely coordinate with participants during supply shortages.
    - 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.

1.2 Proposals for amending the SOROP

6. We propose a number of significant changes to the SOROP to resolve these issues and make other general improvements:
    - The thresholds for declaration of a supply shortage are more specific.

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

2 Links to approved PROPs are provided at: https://www.transpower.co.nz/system-operator/information-industry/operational-information-system/rolling-outage-plans

3 communications@transpower.co.nz, **Subject:** News from Transpower, 7 June 2023.

- 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.
- Timeframes for declaration of supply shortage and notification of savings targets have been reduced so that initial savings targets will be lower.

7. Based on the proposals as they presently stand, specified participants would need to update their PROPs to ensure they are fully compliant with the amended SOROP.

8. We propose that if the proposed SOROP amendments are adopted, we would provide notices under clause 9.6 of the Code to specified participants that not later than 2 years after the date on which their PROP was last approved (or such other date agreed by us), the specified participant must resubmit the plan to us for approval to comply with the amended SOROP.

9. As part of operationalising the SOROP we would also look at conducting regular desktop exercises with specified participants. The format and timing of this will be determined after publication of the amended SOROP.

1.3 We want to hear from stakeholders

10. We welcome any feedback on the SOROP and our proposed amendments, including responses to our specific questions and any other potential amendments we should consider.

2 Purpose of this consultation

11. The purpose of this consultation is to seek feedback on proposals to amend the System Operator Rolling Outage Plan (**SOROP**) that is incorporated by reference in Electricity Industry Participant Code 2010 (**the Code**) under clause 9.3.[4]

12. 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.

13. The SOROP outlines when rolling outages can be triggered, and how rolling outages can be triggered, including how electricity distribution businesses 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.

14. 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.

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

3 Consultation process and next steps

3.1 Feedback sought

15. We welcome any feedback on the SOROP and our proposed amendments, including responses to our specific questions and any other potential amendments we should consider.

16. We have included a word document, for the convenience of submitters, which incorporates all the questions contained in the consultation paper. You can use this for your submission if you would like to. We have also included a word document version of the SOROP with proposed amendments track-changed which can be used to mark up any changes submitters may wish to recommend (if any).

3.2 Consultation period

17. The consultation period is 4 weeks commencing Wednesday, 7 February. Submissions are due by 5pm on Wednesday, 6 March 2024. This is followed by a 2-week period for cross-submissions. Cross-submissions are due by 5pm on Wednesday, 20 March 2024.

18. Please send submissions and cross-submissions to system.operator@transpower.co.nz. We will acknowledge receipt of all submissions and cross-submissions. Submissions and cross-submissions will be published on our website at https://www.transpower.co.nz/system-operator/information-industry/invitation-comment/SOROP.

19. If your submission or cross-submission contains confidential material, please ensure this is clearly identified and provide a version of your submission or cross-submission that can be published.

20. Please note that all information provided to Transpower is subject to potential disclosure under the Official Information Act 1982. Clause 7.20(4) of the Code also requires that the system operator provide a copy of each submission received to the Authority.

21. If you have any questions about this consultation, please send them to system.operator@transpower.co.nz. Your questions and our responses to them will be published on our website for reference by other submitters and stakeholders.

3.3 Next steps

22. We will review submissions and cross-submissions, including preparation of a summary and response document, and revised (if applicable) proposed amendments to the SOROP.

23. Subject to the nature and content of submissions we receive, we are aiming to submit proposed amendments to the Authority by the end of April 2024. Clause 7.21 of the Code sets out the requirements for the information the system operator must provide to the Authority.

4 Why we are consulting?

24. The SOROP is one of our key security of supply planning and policy documents.

25. The SOROP was incorporated into the Code effective from 19 June 2016. The SOROP replaced the plan issued by the Electricity Commission on 30 September 2010.

26. The SOROP has not been amended or updated since that time which is now over 7 ½ years ago.

27. 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 2023/24[5] 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.

28. We also committed that we would look at the information participants should provide in their PROPs with the intention to make the requirements clearer.

4.1 Requirements for amendment of the SOROP

29. We must submit any proposed amendments to the SOROP to the Electricity Authority (**Authority**) for approval (clause 7.13 of the Code).[6] The requirements for proposals to amend or replace system operation documents are contained in clauses 7.13-7.22 of the Code.

30. The Authority must consent to the consultation before the system operator consults on a proposal to amend a system operation document (clause 7.16).

31. 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).[7]

32. 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).

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5 communications@transpower.co.nz, **Subject:** News from Transpower, 7 June 2023.
6 And similar in clause 9.2 of the Code.
7 And similar in clause 9.5 of the Code

5 The broader context: concerns about future reliability and winter energy risks

33. Our view on the importance of reviewing the SOROP is shaped, in part, by heightened winter energy risk.

34. Aotearoa New Zealand's electricity system faces both peak and energy demand challenges.[8]

35. Winter-peak demand is increasing, and there is an increasingly tight supply-demand balance to meet current energy needs. As peak demand grows, additional capacity is needed to meet it, and as the contribution from intermittent generation grows so does the need for other resources to maintain supply when there is no wind or sunshine. Investment in flexible capacity and resources has not kept pace with demand, a situation that became clear during the last two winters. The tightness of supply-side capacity to meet demand also means it has become increasingly difficult for Transpower and generators to take the planned maintenance outages that are essential to the longer-term reliability of the electricity system.

36. 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.

[8] The energy challenge is having enough energy to supply to customers over the winter months when fuel from rainfall, the wind and the sun are typically in shorter supply (typically measured in kWh or MWh). The peak demand challenge is having enough capacity available to respond reliably and quickly when demand in aggregate across the motu peaks, which typically occurs on a cold, still and dark winter's evening (measured in kW or MW).

6 Problems we have identified

37. Based on our review of the SOROP, we do not consider the current SOROP is fit for purpose.

38. 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.

39. We also consider that the potential need for rolling outages would be best meet 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.

40. We consider that there are a number of significant specific issues with the current SOROP:

- 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.
- 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.
- The thresholds for declaration of a supply shortage are not set out separately for each type of supply shortage (the System Operator may make supply shortage declarations for shortages of electricity supply as well as shortages of transmission capacity to manage shortage of supply situations, see clause 9.14 of the Code).
- The objectives of energy savings targets are not defined.
- The calculations of how energy savings targets are to be set is not defined.
- The requirements for PROPs are inadequate to allow the System Operator to closely coordinate with participants during supply shortages.
- 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.

41. For example, clause 3.5 of the current SOROP specifies that the System Operator will declare a supply shortage "when it considers the probability of unplanned outages occurring as a result of a supply shortage is greater than 50%" and will "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". We consider these thresholds to be very vague (e.g. what timeframe should be used to calculate the 50% probability?) and would require application of considerable judgement and discretion.

42. Likewise, for example, clause 4.1(a) states "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" without providing any direction as to what the purpose of targets are or how the System Operator should set them.

Question 1	Do you agree with our assessment of the problems with the SOROP?

7 Proposed amendments to the SOROP

43. We propose a number of amendments to the SOROP, ranging from technical drafting changes and tidy-ups at one end of the spectrum to more significant, and policy-related changes aimed at addressing the issues we have identified at the other end.

44. This section details our proposed drafting changes and the rationale for each of the changes. A separate word version of the SOROP with the proposed amendments track-changed is provided as an Annex to this paper.

45. We welcome any feedback on the SOROP and our proposed amendments, including responses to our specific questions and any other potential amendments submitters think we should consider.

46. We are aware that your responses to Questions 1, 2 and 3 of this consultation might only be answered once the proposed changes and rationale have been examined.

Question 2	Do you support our proposal to amend the SOROP?

Question 3	Are there any other amendment options we should consider?[9] 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.

[9] Please feel free to use the word version of the proposed SOROP to provide your drafting suggestions and any other amendments you may recommend.

7.1 Section 1: Background

7.1.1 Proposed amendments

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**.

7.1.2 Rationale for change

47. The reference to the last version of the SOROP in clause 1.1 is deleted as this is not required.

7.2. Section 2: Glossary

7.2.1. Proposed amendments

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**

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 **Error! Reference source not found.**~~ means an event arising over time that could cause a **supply shortage**. An example of a **developing event** is an extended period of low hydro inflows.

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** **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**

~~**full information plan** has the meaning given to that term in paragraph **Error!**~~

immediate event ~~has the meaning given to that term in paragraph **Error! Reference source not found.**~~ 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 by specified participants due to a lack of electricity supply or transmission capacity.

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

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

supply shortage ~~has the meaning given to that term in paragraph **Error! Reference source not found.** 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.

2.2. In Part 9 of the Code and this Plan a grid owner is a distributor.

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

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**.

7.2.2. Rationale for change

48. 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.

49. 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.

50. 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.

51. 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.

7.3. Section 3: Supply shortages

7.3.1. Proposed amendments

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.

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]~~*

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.

7.3.2. Rationale for change

52. The definitions of developing event, immediate event and supply shortage are moved to the glossary to have all definitions in one place.

53. The reference to scarcity pricing is removed as it has been removed from the Code.

7.4. Section 3: Thresholds for supply shortage declarations

7.4.1. Proposed amendments

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**. 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.

3.5A 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.

3.5B 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 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.~~

3.6. 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, assuming minimal (1 percentile) inflows after the next seven days

(d) ~~weather and climate forecasts relating to future hydro inflows~~ profiled 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.

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

7.4.2. Rationale for change

54. 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.

55. 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.

56. A shortage of electricity supply will be a developing event with some warning time. In this case the System Operator needs to have first declared 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. The System Operator needs to have started an OCC and have

extended periods of unplanned outages at any GXP in the next 35 days arise in the modelling in order to declare a supply shortage for a shortage of electricity supply.

57. While the current SOROP could permit these separate declarations it is not explicit and the triggers for each are not specified.

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?

58. 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.

59. 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.

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

61. 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.

62. 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.

Question 5 Do you agree with the proposed change to this method of when to declare a supply shortage?

63. 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.

64. 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.

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?

65. We propose that:

- profiled 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).

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?

66. The change in clause 3.7 from deficit to shortfall aligns with definitions under real time pricing.

7.5. Section 3: Notice period

7.5.1. Proposed amendments

Notice period

3.8. During a **developing event** the **system operator** will endeavour to provide at least ~~14~~ seven 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~~ seven days' notice, the **system operator** will provide as much prior notice as reasonably practicable. The system operator recommends preparations for rolling outages should be commenced once an official conservation campaign has begun.

3.9. 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.

7.5.2. Rationale for change

67. We propose to shorten the notice period for a supply shortage declaration for a developing event from 14 days to 7 days.

68. The reason behind this is that our modelling shows the time between the start of an official conservation campaign and unplanned outages could be as little as 20 days. Waiting 14 days before savings starts then leaves only a matter of days in which to address the imbalance between forecast supply and demand. Resulting savings targets could be as high as 15-20% ramping up very quickly to 20-25% savings targets.

69. Lowering the notification timeframe to 7 days would mean savings targets can start lower, likely 10%, before needing to ramp up if the dry situation persists. This allows some additional time during which it may rain.

70. This is a trade-off between the notification timeframe and the savings targets that may result. The proposal is for 7 days and lower initial savings targets. We realise that meeting a 7-day notification timeframe may be problematic so our recommendation will be to begin preparations for rolling outages once an OCC has begun.

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 you suggest as appropriate?

71. A revocation of a supply shortage would simply be set as the reverse of the above triggers. That is once extended periods of unplanned outages are no longer forecast within the next 35 days.

7.6. Section 4: Directions

7.6.1. Proposed amendments

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-

(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 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 ~~for the equivalent period in the previous year~~ over the next 35 days. Specified **participants** must 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.

(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** ~~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

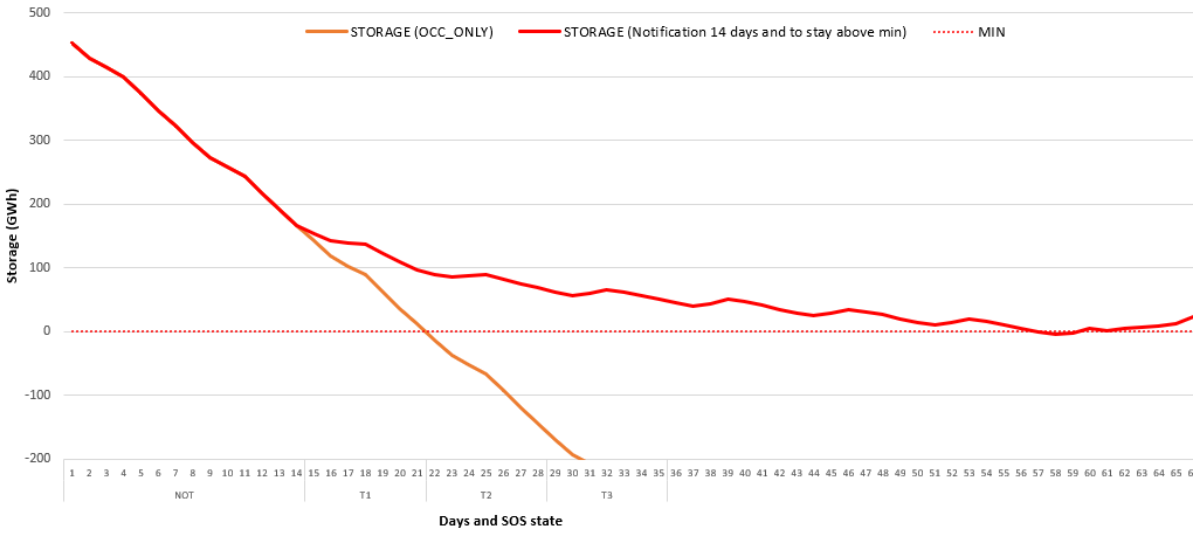
(c) to minimise the use of hydro storage (by increasing thermal generation elsewhere)

specified participant feedback, for any reason that the **system operator** accepts, indicates a need to amend savings for that participant.

7.6.2. Rationale for change

72. 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.

73. The graph below shows how this would work:



74. 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.

Question 9	Do you agree with the proposal for the calculation of savings targets?

75. 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.

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?

76. 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.

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?

77. Savings targets may be amended if participant feedback indicates a need to amend savings for that participant.

78. Energy savings targets are to be updated weekly, on a rolling basis.

79. The System Operator will generally set the same energy savings target in percentage terms for all specified participants in the affected region.

7.7. Section 4: Notice period

7.7.1. Proposed amendments

Notice period

4.3. During a **developing event** the **system operator** will endeavour to provide at least ~~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~~ seven 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.

7.7.2. Rationale for change

80. The notice period of a direction containing a savings target is changed from 9 days to 7 days. The reason for this is to align with weekly savings (7 days) and also lower the notification period to lessen the impact that delays may have on the size of savings targets (see question 9 and the preceding explanation).

Question 12 Do you agree with lowering the notification of savings targets from 9 days to 7 days?

7.8. Section 4: Monitoring

7.8.1. Proposed amendments

Monitoring

4.5. 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**.

4.6. The **system operator** will provide, on a daily basis, each **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 **distributor's** or **direct consumer's assets** are connected to the **grid**. The data will be the **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 **distributor's** or **direct consumer's assets** are connected to the **grid**.

7.8.2. Rationale for change

81. No changes proposed to the section on monitoring.

7.9. Section 5: specified participants required to develop participant rolling outage plans

7.9.1. Proposed amendments

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

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

7.9.2. Rationale for change

82. The Code reference in the section title is removed for consistency.

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

7.10.1. Proposed amendments

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 **Error! Reference source not found.** 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 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 and restore times per **GXP**.

6.2B **Specified participants** must provide half hourly **GXP** level **demand** forecast information for **conforming GXPs** for the week ahead on a rolling daily basis, once their savings targets have been notified.

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 changes to the start or end times of **rolling outages**. It is possible that restrictions on the timing and location of

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 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 up or down 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) ~~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**.

7.10.2. Rationale for change

83. 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.

84. 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.

85. 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.

Question 13 Do you agree with the proposal to add the requirement for Participant Rolling Outage Plans to provide a seven-day planned outage list with daily outage and restoration times and half hourly GXP level demand upon notification of savings targets?

7.11. Section 6: COMMUNICATIONS

7.11.1. Proposed amendments

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 **Error! Reference source not found.**, **Error! Reference source not found.**, **Error! Reference source not found.** and **Error! Reference source not found.** 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 **Error! Reference source not found.** and note any preferred means of communication with them. Contact details for the key personnel may 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:

6.7.1. the nature and extent of the **rolling outages** implemented by the **specified participant;** and

6.7.2. any other information requested by the **system operator** in order to monitor

7.11.2. Rationale for change

86. 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.

87. Specified participants may 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.

88. 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.

7.12. Section 5: Prioritisation of demand to be disconnected by distributors

7.12.1. Proposed amendments

Prioritisation of demand to be disconnected by distributors

6.8. A **distributor** should disconnect **demand** on its **network** for **rolling outages** in accordance with 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.

Priority	Priority Concern	~~Maintain~~ Supply to:
1	Critical public health and safety	Critical health and disability services e.g. major hospitals, air traffic control centres,
2	~~Maintaining~~ 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 supermarkets.
3	Public health and safety	Vulnerable sectors e.g. rest homes, prisons, medical centres, schools, street lighting.
4	Animal health and food production/storage	Dairy farms, milk production facilities, chicken sheds, cool stores.
5	~~Maintaining~~ Domestic Production	Central business districts, commercial and industrial premises.
6	~~Avoiding~~ Disruption to 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.

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.

6.9. Distributors are responsible for communicating and co-ordinating with 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.

~~(a) 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.**

7.12.2. Rationale for change

89. 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.

90. 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.

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

92. Based on our understanding of the Authority's interpretation of its statutory objective, [10] Transpower, in its role as System Operator, does not have "dealings ... with domestic consumers and small business consumers". Nevertheless, the Authority's new "consumer

[10] https://www.ea.govt.nz/projects/all/distribution-pricing/consultation/targeted-reform-of-distribution-pricing/

protection" objective may impact stakeholder views on this matter, including how distributors administer outages.

Question 14 Do you agree the priority order in the Table in 6.8 of the SOROP for disconnection of demand should remain unchanged?

93. 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.

94. 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.

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?

7.13. Section 6: Capability of achieving savings targets

7.13.1. Proposed amendments

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 **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:

i. how **energy savings targets** of 5%, 10%, 15%, 20% and 25% reductions would be achieved

ii. the priority loads (using the table in clause 6.9 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. ~~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** (~~nine~~ seven days out to real time)

(c) how disconnection of **demand** will be implemented (real time)

(d) how restoration of **demand** will be implemented (real time)

(e) monitoring of compliance with the **direction**.

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**.

~~6.15. 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]*

7.13.2. Rationale for change

95. Clause 6.13 has been changed to ensure a direction has been correctly received and is acknowledged with 48 hours. The time period in 6.13(b) is reduced to seven days to align with the notice period for provision of savings targets.

96. 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.

97. 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).

98. Clause 6.14 has been updated to cover all specified participants.

99. Clause 6.15 has been revoked as this is now covered under clause 6.5.

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?

7.14. Section 6: Continuing compliance with other code obligations

7.14.1. Proposed amendments

Continuing compliance with other Code obligations

6.16. 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** ~~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.

7.14.2. Rationale for change

100. 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.

7.15. SECTION 6: ENERGY SAVINGS TARGETS FOR SPECIFIED PARTICIPANTS

7.15.1. Proposed amendments

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

~~6.17. 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]*

~~6.18. 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]*

~~6.19. 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]*

6.20. 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 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.

7.15.2. Rationale for change

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

102. 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.

103. 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).

104. 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.

Question 17 Do you agree with the proposal to remove the provision for directly connected consumers to provide a full information plan given participants (which includes directly connected consumers) can provide feedback on their demand forecast and on their savings targets?

105. 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.

8 Transitional arrangements for specified participants

106. Based on the proposals as they presently stand, specified participants would need to update their PROPs to ensure they are fully compliant with the amended SOROP.

107. We propose that if the proposed SOROP amendments are adopted, we would provide notices under clause 9.6 of the Code to specified participants that not later than 2 years after the date on which their PROP was last approved (or such other date agreed by us), the specified participant must resubmit the plan to us for approval to comply with the amended SOROP.

108. This would enable specified participants to retain their existing PROP until clause 9.13 is otherwise triggered and, in any event, not later than 2 years after the date the amended SOROP is approved i.e.: the changes to the SOROP would not, in of themselves, trigger clause 9.13 of the Code that participants must immediately amend their PROPs to comply with clause 9.8 and align with the amended SOROP. Instead, a transition period will apply to allow participants to update their PROPs to align with the amended SOROP as part of their normal 2 yearly cycle (or such other date agreed with us).

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?

9 Regulatory statement for the proposed amendments

9.1 Objectives of the proposed amendment

109. The objective of the proposed amendment is to ensure that 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.

110. 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.

Question 19	Do you agree with the objectives of the proposed amendment?

9.2 The proposed amendment

111. The drafting of the proposed amendment is shown in the track-change version of the SOROP included as part of this consultation.

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

112. 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.

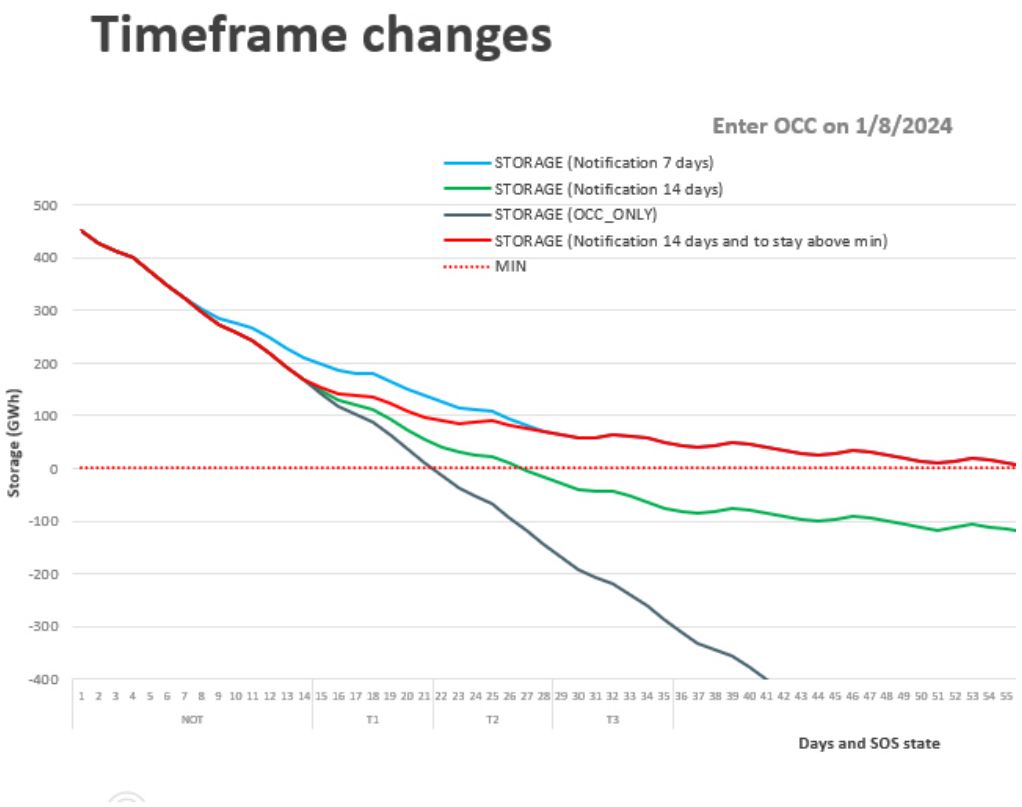
113. We have therefore largely assessed the benefits of our proposed amendments relative to the status quo on a qualitative basis, at both a macro-level assessing the heightened risk of outages, and at a micro-level assessing each component of the proposal. This is consistent with the approach we adopted when we developed the 2016 version of the SOROP. The analysis suggests that the proposal's benefits outweigh the costs.

114. 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.

115. The changes (and consultation/approval process) should mean there is a commonly agreed approach in the SOROP which minimises the extent to which the 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.

116. The graph below highlights that, consistent with our proposals, triggering rolling outages earlier but shallower can reduce the risk of unplanned outages or the need for larger rolling outages – as per the difference between the light blue line (rolling outages start earlier but shallower) and the dark red line (rolling outage start a week later but with deeper cuts).



117. Our assessment is that by providing additional clarity and minimising the risk of over reliance on our subjective or potentially arbitrary judgement, the SOROP will better support its purpose and better meet the Authority's statutory objective under section 15 of the Electricity Industry Act.

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 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?

9.4 The proposed option is preferred to other options

118. 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.

119. 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).

120. The preferred option is based on our experience and expertise in the role of System Operator. We have been very clear in our consultation and questions that we would welcome feedback on any other potential amendments we should consider. Please refer to question 2, 3 and 4 in the consultation.

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

121. 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).

122. 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).

123. We consider that the proposed amendment complies with section 32(1) of the Act because it is necessary PIR 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 meet 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.

Question 22 Do you agree that the proposed amendment complies with section 32(1) of the Act?

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