

ACTION LIST

The following are actions to be completed after meeting number 23 on Wednesday, 28 March 2018.

Action #	Meeting created	Action	Date for completion	Status
1	13	SRC Secretariat to arrange ENA's Smart Technologies Working Group presentation once its investigation is sufficiently developed.	Once ENA's investigation has progressed	On hold.
2	16	Secretariat to engage with industry and the Commerce Commission in further development of the risk management framework (RMF).	2nd meeting of 2018 1 st meeting of 2019	Late. See update 1.2 appended to this paper.
3	16	Secretariat to assess what the threshold should be for a risk that the SRC 'can live with', and incorporate into further development of the RMF.	2nd meeting of 2018 1 st meeting of 2019	Late. See update 1.2 appended to this paper.
4	17	The secretariat is to keep the SRC updated with the progress of Transpower's major capital project for voltage stability issues in the upper North Island. Updates of milestones should be provided until the investment decision is made.	As needed until October 2018	In progress. See update 1.8 appended to this paper.
5	23	Secretariat to send the written comments on agenda item #8 to Transpower, subject to the relevant member's agreement.	2 nd meeting of 2018	Complete. Sent 19 June 2018.
6	23	Secretariat to report back to the SRC on the sensitivities of the annual assessment assumptions and how the assessment could better take into account the dynamic nature of the market.	1 st meeting of 2019	On hold. Proposed timing aligns with the review of the winter security standards (see update 1.7) and the delivery of the 2019 annual assessment.

1. Updates

1.1 Updates section now included in SRC papers

- 1.1.1 In the annual members' survey, there were requests for updates from the secretariat to the SRC on matters that had previously been discussed by the SRC.
- 1.1.2 This section exists in response to that request. The secretariat expects updates will usually be 2-3 paragraphs in length and provide information on matters where a dedicated agenda item is not warranted.

1.2 The risk management framework

- 1.2.1 The secretariat has been developing a risk management framework (RMF) to assist with consideration of industry risks by the SRC. The RMF should help triage the SRC's attention on industry risk controls and give a framework for undertaking post-event reviews.
- 1.2.2 The secretariat had two actions to complete for the second meeting of 2018. These have not been completed and are now proposed for delivery in early 2019.
- 1.2.3 Since the SRC last considered the topic, the secretariat has:
 - 1.2.3.1. completed the 'right hand side' of the bowtie structure and is close to testing this with a small selection of industry stakeholders
 - 1.2.3.2. commissioned analysis of historic power system events to draw out any lessons about the effectiveness of risk controls.

1.3 Inverter compliance with AS/NZS 4777

- 1.3.1 At its 6 November 2017 meeting, the SRC received a presentation from Transpower on its solar photovoltaic investigation (part of its Emerging Energy Technology Programme). In that presentation, Transpower noted that one of the inverter types tested did not meet the requirements of AS/NZS 4777.
- 1.3.2 Subsequent discussions with Transpower have shown:
 - 1.3.2.1. that there was only one inverter tested of each type
 - 1.3.2.2. that there is no evidence to show that the particular inverter of concern had been certified to comply with AS/NZS 4777.
- 1.3.3 Accordingly, the secretariat considers this test was inconclusive evidence of any broader problems with inverters already installed, let alone new installations. As Transpower concluded though, it does highlight the importance of installed equipment performing as expected.

1.4 2 March 2017 South Island AUFLS event

- 1.4.1 At its special 13 December 2017 meeting, the SRC considered the 2 March 2017 South Island automatic under-frequency load shedding (AUFLS) event. The SRC subsequently provided advice arising from that meeting.

- 1.4.2 The secretariat:
- 1.4.2.1. expects that Transpower will be publishing its final report on the event early in the third quarter of 2018
 - 1.4.2.2. it is likely to include a further update in the SRC's 17 October 2018 papers
 - 1.4.2.3. it is unlikely to present Transpower's final report to a future SRC meeting, but will reconsider that at the time of publication.
- 1.4.3 The timing and adequacy of reporting will likely be a matter for discussion in the review of system operator performance in the period 1 July 2017 to 30 June 2018.

1.5 High voltage live line work techniques

- 1.5.1 At its 28 July 2017 meeting, the SRC received a paper entitled *Reliability implications of reduced use of high voltage live line work techniques*. At that meeting, the secretariat referred to a survey planned by the Electricity Networks Association (ENA). The secretariat understood that survey might give some insight into whether any impacts on reliability had been observed by ENA members.
- 1.5.2 The ENA completed the survey in late 2017. However, the survey was too early for distributors to have detected any reliability impacts, though it has confirmed that most distributors had (or were) changed their related policies. The ENA is planning another survey on this topic.
- 1.5.3 The secretariat will remain in contact with the ENA and provide an update or a paper when appropriate.

1.6 Development of the hydro risk curves (HRCs)

- 1.6.1 There are two projects underway that further develop the HRCs:
- 1.6.1.1. The Electricity Authority's (Authority) Review of regulatory settings for official conservation campaigns (OCCs). This project is reviewing the suitability of the start- and stop-triggers for OCCs, and the suitability of arrangements for sub-national OCCs (such as the existing provisions for South Island-only OCCs).
 - 1.6.1.2. The system operator's review of the security of supply forecasting and information policy (SOSFIP). This project is reviewing the treatment of contingent hydro storage and improving the clarity of the HRCs.
- 1.6.2 Both projects are inter-dependent and being actively managed to have simultaneous consultations and final decisions.
- 1.6.3 The secretariat anticipates that both consultations will be open at the time of the SRC's next meeting on 17 October 2018. The secretariat is likely to include those consultations in the agenda for the next SRC meeting.

1.7 Recalculation of the winter security margins

- 1.7.1 The Authority has a project underway to review the winter security standards. The three standards are:

- 1.7.1.1. The New Zealand winter energy margin (NZ-WEM) of 14-16%.
- 1.7.1.2. The South Island winter energy margin (SI-WEM) of 25.5-30%.
- 1.7.1.3. The North Island winter capacity margin of 630-780 MW.
- 1.7.2 The standards estimate the efficient level of surplus generation. The system operator's annual assessment of security of supply compares actual generation surplus against the standards.
- 1.7.3 The Authority's consultation on its review of the winter security standards will likely be concluded by the time of the SRC's next meeting. The secretariat will provide either an update or a paper, depending on the status and proposals of the project.

1.8 Waikato and Upper North Island Voltage Management

- 1.8.1 In May 2018, Transpower released an update on its Waikato and Upper North Island Voltage Management (WUNIVM) investigation.¹
- 1.8.2 Transpower offered to assist the SRC to understand status of the WUNIVM project. The secretariat requested a brief written summary, rather than a presentation to the 22 June 2018 SRC meeting.
- 1.8.3 Transpower provided the following update:

"While we have not yet fully developed our preferred option to address the WUNIVM need, we have made significant progress. We therefore provided the industry update to indicate to interested parties where the WUNIVM investigation is heading and what they might expect in our proposal. We make clear to readers that they should consider it as a working draft as we test and develop our proposals, cost them more fully, and continue our technical, reliability and economic analysis. We hope, nonetheless, that it will make clearer to generators the linkage between generation commitments and required Transpower investment, a concern noted by the SRC in its last advice to the Authority on this investigation.

The major components of Transpower's evolving preferred option are:

Components of the evolving preferred option	Expected need date
Shunt capacitors in the Waikato	2020
Series capacitors on the BHL-WKM circuits	2022
Demand management scheme to manage high impact, extremely low probability contingencies	2022
Additional components to manage voltage stability	2024+

The WUNIVM investigation is proceeding and we plan to put our preferred option to formal short-list consultation in the first half of 2019. The evolving preferred option outlined above may change:

¹

Available from <https://www.transpower.co.nz/waikato-and-upper-north-island-voltage-management-investigation> , or by direct download from https://www.transpower.co.nz/sites/default/files/projects/resources/WUNIVM%20investigation%20update%20May%202018_0.pdf

- the WUNIVM technical, reliability and economic analysis proceeds
- any generation commitments are made at Huntly or north
- any material revision to demand forecasts
- to submissions received on our short-list consultation.

The WUNIVM update includes an update also on Transpower's operational and grid planning voltage stability limit assumptions, to clarify what had been some industry confusion between them."