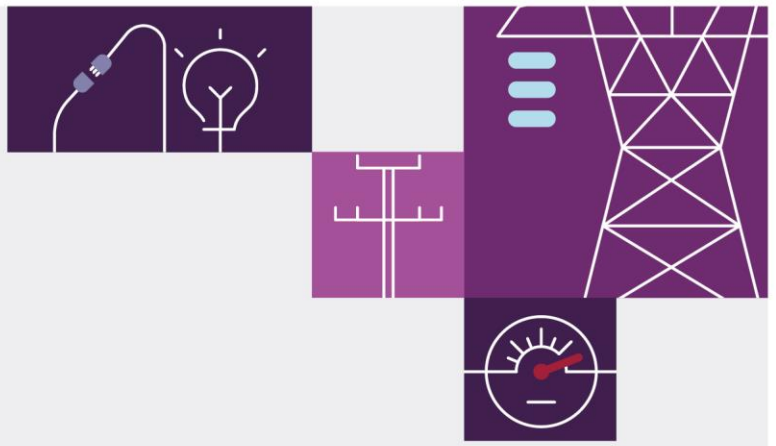


# Operation of Frequency Control Special Protection Scheme in Tasmania

April 2022

Reviewable Operating Incident  
Report under the National  
Electricity Rules





# Important notice

## Purpose

AEMO has prepared this report in accordance with clause 4.8.15(c) of the National Electricity Rules, using information available as at the date of publication, unless otherwise specified.

## Disclaimer

AEMO has made every reasonable effort to ensure the quality of the information in this report but cannot guarantee its accuracy or completeness. Any views expressed in this report may be based on information given to AEMO by other persons.

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## Contact

If you have any questions or comments in relation to this report, please contact AEMO at [system.incident@aemo.com.au](mailto:system.incident@aemo.com.au).

The National Electricity Market (NEM) operates on Australian Eastern Standard Time (AEST). All times in this report are in AEST.



# Abbreviations

Abbreviation	Term
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AEST	Australian Eastern Standard Time
FCSPS	Frequency Control Special Protection Scheme
MW	Megawatts
NEM	National Electricity Market
NER	National Electricity Rules
TNSP	Transmission Network Service Provider

# Incident review

This reviewable operating incident<sup>1</sup> report is prepared in accordance with clause 4.8.15(c) of the National Electricity Rules (NER). It has been prepared using information provided by TasNetworks<sup>2</sup> and from AEMO systems.

**Table 1 Summary of event**

Details	
<b>Reviewable operating incident type</b>	Operation of under frequency or over frequency protection and control scheme(s).
<b>Incident details</b>	This report relates to a reviewable operating incident <sup>3</sup> that occurred on 20 December 2021 in Tasmania. The incident involved the trip of Basslink interconnector and the operation of the Frequency Control System Protection Scheme <sup>4</sup> (FCSPS).
<b>Incident classification</b>	Protection/control system – operation of FCSPS.
<b>Generation impact</b>	No generation was lost as a result of this incident.
<b>Customer load impact</b>	232 megawatts (MW) of load was disconnected as a result of this incident.
<b>Pre-incident conditions</b>	Prior to the incident, the Basslink interconnector was importing 233 MW into Tasmania.
<b>Incident key events</b>	<ol style="list-style-type: none"> <li>At 1308 hrs on 20 December 2021: <ul style="list-style-type: none"> <li>The Basslink interconnector tripped<sup>5</sup>, and</li> <li>The FCSPS operated, disconnecting approximately 75 MW of load at Temco, approximately 58 MW of load at Norske, and approximately 99 MW load at Rio Tinto.</li> </ul> </li> <li>At 1316 hrs on 20 December 2021, load at Norske returned to service.</li> <li>At 1331 hrs on 20 December 2021, load at Rio Tinto returned to service.</li> <li>At 1335 hrs on 20 December 2021, the Basslink interconnector returned to service.</li> <li>Between 1337 hrs and 1347 hrs on 20 December 2021, loads at Temco returned to service.</li> </ol>
<b>Incident cause</b>	At 1308 hrs on 20 December 2021, an unplanned outage of Basslink interconnector initiated the operation of the Tasmanian FCSPS. As Basslink was importing 233 MW into Tasmania, the FCSPS operated and tripped a similar amount of load in Tasmania, as indicated in the incident key events. The FCSPS operation ensured that Tasmanian power system frequency was maintained within the Frequency Operating Standard. This operation was consistent with the expected performance of the FCSPS.
<b>Power system response (facilities and services)</b>	There were no other material impacts on the broader power system, load or generation.
<b>Rectification</b>	The FCSPS scheme operated correctly – no action required.

<sup>1</sup> Reviewable operating incidents are defined by NER clause 4.8.15(a) and the Australian Energy Market Commission (AEMC) Reliability Panel Guidelines for Identifying Reviewable Operating Incidents found at <https://www.aemc.gov.au/sites/default/files/2018-02/Final-revised-guidelines.pdf>.

<sup>2</sup> TasNetworks is a Transmission Network Service Provider (TNSP) for Tasmania.

<sup>3</sup> See AEMC Reliability Panel Guidelines for Identifying Reviewable Operating Incidents 6(d), as the incident relates to operation of under frequency or over-frequency protection and control scheme(s).

<sup>4</sup> FCSPS provides high speed tripping of load or generation in Tasmania following an unplanned outage of Basslink to help manage system frequency. When power is imported into Tasmania, FCSPS is required to trip the same amount of load as the imported power. When power is exported from Tasmania, FCSPS is required to trip the same amount of generation exported  $\pm$  40 MW.

<sup>5</sup> The trip of the Basslink interconnector is a credible contingency event, and is not the subject of this incident investigation.

Details	
<b>Power system security</b>	The power system remained in a secure operating state throughout this incident and the Frequency Operating Standard <sup>6</sup> was met for this incident.
<b>Reclassification</b>	AEMO assessed whether to reclassify this incident as a credible contingency event <sup>7</sup> . The operation of FCSPS was caused by the Basslink interconnector trip, which is a credible contingency, therefore, AEMO correctly identified that reclassification was not required.
<b>Market information</b>	For this incident, AEMO issued the following market notice (issued in accordance with NER requirements): <ul style="list-style-type: none"> <li>AEMO issued Market Notice 93308 at 1325 hrs on 20 December 2021 to advise on the variation of inter-regional transfer limit.</li> </ul>
<b>Conclusions</b>	AEMO has concluded that: <ol style="list-style-type: none"> <li>The FCSPS operated correctly in response to the Basslink trip. In line with the FCSPS's settings, it automatically tripped approximately 232 MW of load in Tasmania.</li> <li>AEMO correctly identified there was no requirement to reclassify this incident as a credible contingency.</li> <li>The power system remained in a secure operating state and the Frequency Operating Standard was met for this incident.</li> </ol>
<b>Recommendations</b>	As this incident involved the operation of an under frequency or over frequency protection and control scheme, AEMO has completed this review as required by the AEMC Reliability Panel Guidelines for Identifying Reviewable Operating Incidents. AEMO has proposed a review of these guidelines, and one of AEMO's recommendations is to consider if events where control schemes operate as designed and there are no adverse impacts on the power system should be subject to review under clause 4.8.15 of the NER. Depending upon the outcome of this review including industry consultation, reporting of such events may not be required in future.

<sup>6</sup> See <https://www.aemc.gov.au/sites/default/files/2020-01/Frequency%20operating%20standard%20-%20effective%201%20January%202020%20-%20TYPO%20corrected%2019DEC2019.PDF>.

<sup>7</sup> AEMO is required to assess whether or not to reclassify a non-credible contingency event as a credible contingency event – NER clause 4.2.3A(c) – and to report how the reclassification criteria were applied – NER clause 4.8.15(ca).