

Standing data request – additional info required for generator ratings

Forecasting Reference Group – 27 November 2019

Recap of proposed improvement

- High level concept to refine summer capacity approach provided in August 2019 FRG.
 - Based on recommendations received in submissions during consultation on reliability forecasting approach
- Principle of increasing accuracy without complexity.
- The general idea proposed was to collect two summer capacity values:
 - A 10% POE value (the current value)
 - A capacity value for a more average/regular summer day
- The 10% POE value would then be applied to a subset of the summer period.

Specifications for this approach

- What is the basis on which the average summer temperature is provided?
- How is the period over which the 10% POE capacity applied to be determined?
- Will the 10% POE capacity be applied in both the 10% and 50% POE forecasts?
- Where will the approach be applied?

Regular summer capacity

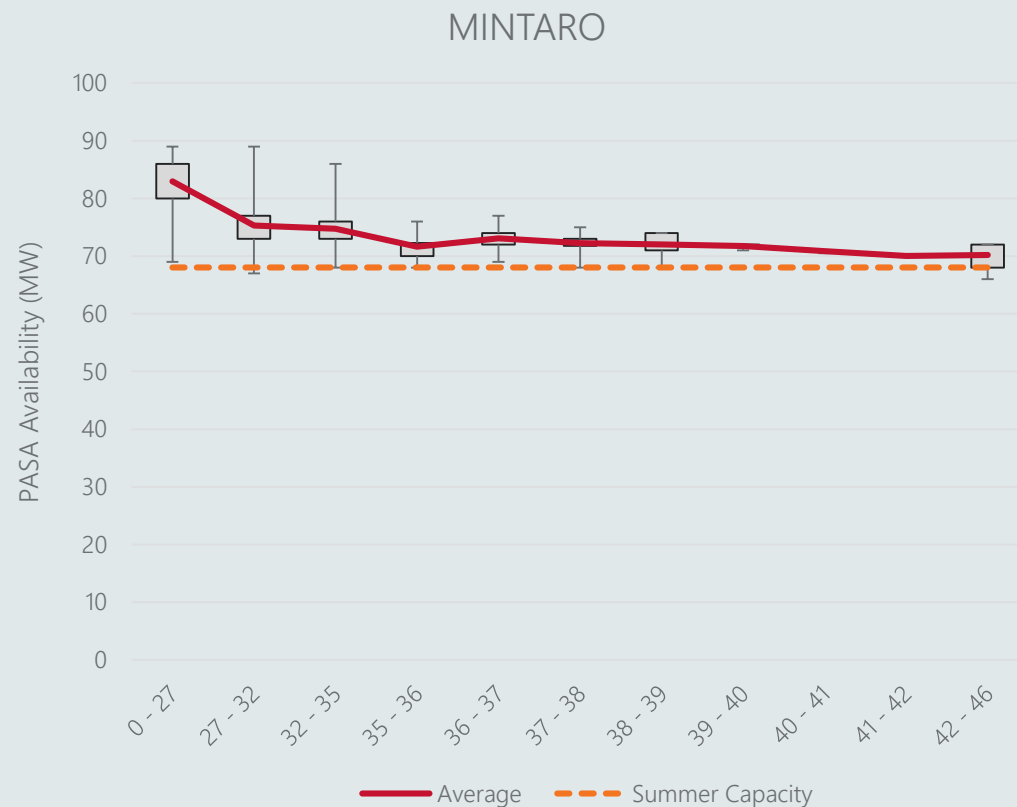
- AEMO's analysis shows capacity deratings between temperatures of 30 degrees and the summer reference temperature for some gas generators.
- It would impact accuracy of reliability forecasting if ratings were applied that overestimated capacity during high demand periods where temperature is above 30 degrees.
- Key requirement: For generator ratings to be accurate for high demands that occur with more moderate summer heat conditions.

Regular summer capacity

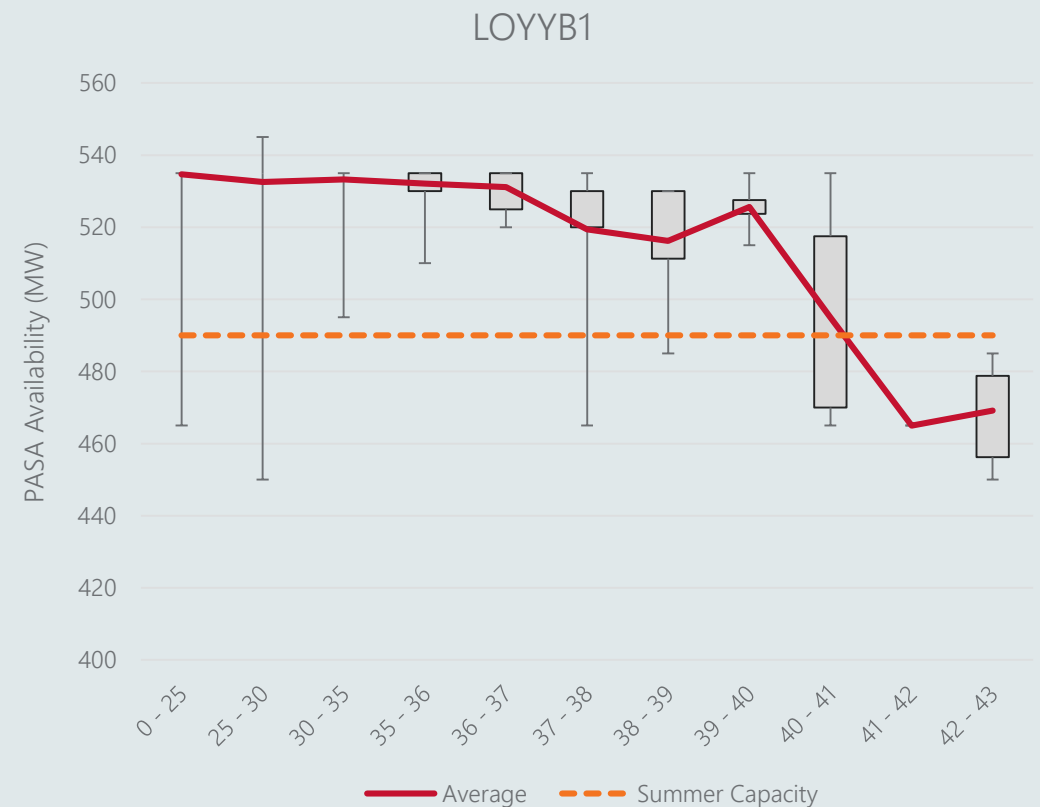
- Selection of temperature based on:
 - Temperature data between December and March (inclusive)
 - 85th percentile of maximum daily temperatures
- Applying this to the historical period from 2010-11 to 2018-19, the temperatures are as follows:
 - QLD: 32 degrees
 - NSW: 32 degrees
 - VIC: 32 degrees
 - SA: 35 degrees
 - Tasmanian summer ratings are based on peak demands driven by cold weather. The approach for Tasmanian summer ratings will remain unchanged.
- AEMO will recalculate these temperatures adding in 2019-20 summer data where available and provide those temperatures when participants are required to submit the new seasonal capacity.

Generator deratings with temperature

Unit that derates for temperatures between 30-35



Most generators not affected by choice of temperature in the 30s.



Determining the period over which 10% POE ratings apply

August FRG: AEMO proposed that the 10% POE ratings applied to top 5 hottest days and following day.

Analysis to date has shown no discernible trend of extended generator deratings in response to extreme heat.

Only applying to 5 days may not appropriately capture extreme years where there are many days of extreme temperature.

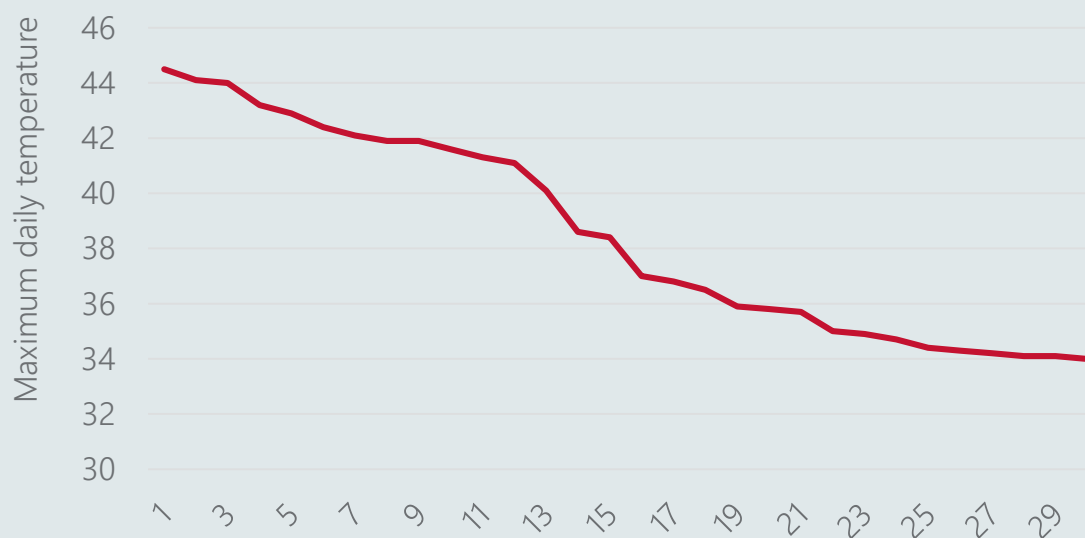
- AEMO will also apply POE10 rating to any days where temperature was within two degrees of the summer reference temperature in that region.

Same approach applied to 10% and 50% POE modelling.

Regular summer capacity

Number of days not in the top 5 but within the 2 degree threshold

	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Queensland	0	0	0	0	2	0	2	0	0
New South Wales	0	0	0	0	0	0	1	0	0
Victoria	0	0	0	3	0	0	0	0	0
South Australia	0	0	0	7	0	0	0	0	1

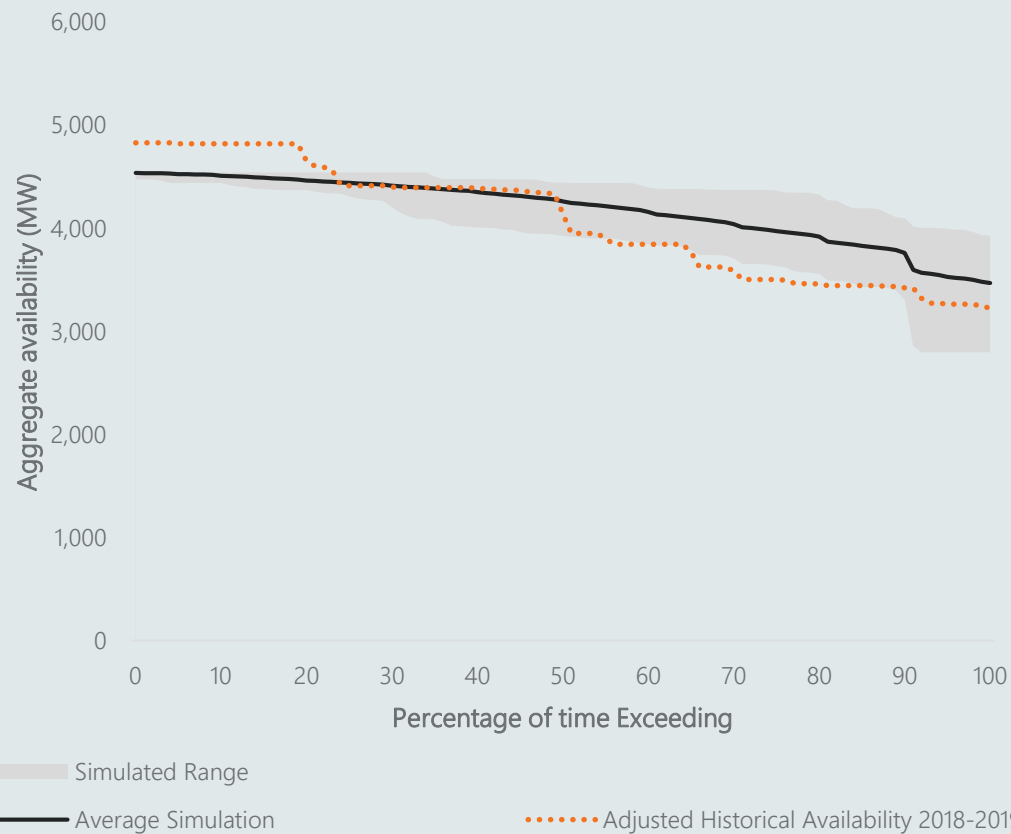


Application of the approach

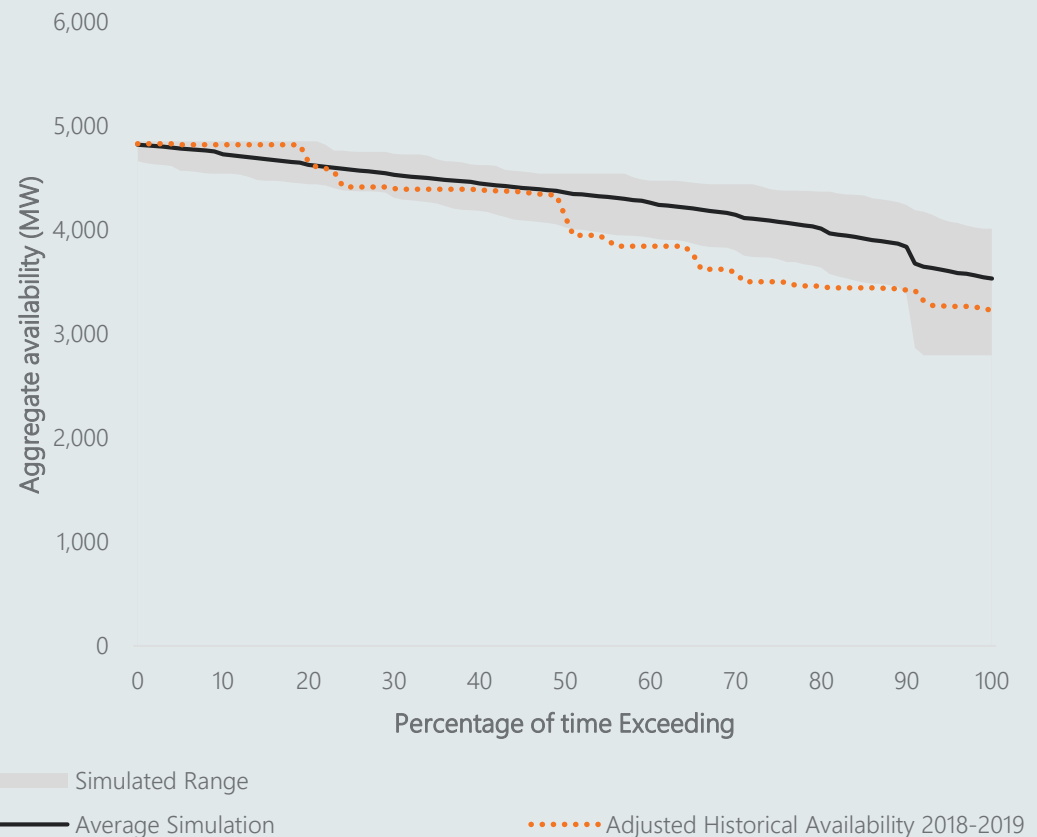
- The revised approach will be applied across many of AEMO's time-sequential modelling tasks, including
 - The ESOO
 - The ISP
 - Forecasts of GPG consumption for the GSOO
 - Other ad-hoc forecasts
- The approach will not be applied in MTPASA/EAAP:
 - The capacities provided in MTPASA reflect partial outages and other deratings which may or may not be temperature dependent.
 - The addition of a secondary field of PASA availability requires a significant amount of effort, and would be a burden on market participants.
 - Not appropriate to assume high level of precision in predicting hot days for outage planning.

Impact of the proposed approach

Without applying alternative summer rating



After applying alternative summer ratings (assuming applied to five days)



Questions?

Appendix 1: standing data

Standing data requests

Number	Item	Reliability	Security	For FRG consultation?
1	More detail on losses of unit availability – EBMF, EFOF, reserve outage	✓	✓	Y
2	Start-up time e.g. hot, warm, cold start for thermal units	✓	✓	Y
3	Actual and forecast Station-level outages requiring all units out of service (probably every 10 to 15 years – e.g. stack , switchboard, canal)	✓	✓	Y
4	Historical and forecast Capex	✓	✓	Y
5	Budgeted reliability	✓	✓	Y