

Seasonal generator ratings

Issues and outline of a new approach

Forecasting Reference Group – 28 August 2019

Current approach

- Currently, AEMO requests seasonal ratings from each scheduled and semi-scheduled generators.
- These capacities are intended to represent the performance of generators at times of 10% POE demand conditions.
- For summer, this is driven by high temperatures:
 - The summer ratings therefore reflect the impact of ambient temperature on the generator rating.
 - For some generators, this results in a significant derating below their typical capacity.
 - Applying the summer derating to all periods in summer is conservative, particularly in more moderate demand periods.

Reliability Forecasting Methodology consultation - Issues raised

- Through the consultation on AEMO's Reliability Forecasting Methodology, a number of submissions were made in relation to summer ratings, with the general opinion being that these ratings should only be applied to a subset of periods.
- In the Final Report released on the Reliability Forecasting Methodology, AEMO committed to undertaking a review of the assumptions and methodology related to summer ratings that would be applied in future reliability forecasts.

<https://www.aemo.com.au/Stakeholder-Consultation/Consultations/Reliability-Forecasting-Methodology-Issues-Paper>

Outline of AEMO's proposed approach

1. Collect two sources of summer capacity from all generators:
 - The rating under 10% POE demand conditions (current value)
 - The rating under "typical" summer conditions (e.g. average daily maximum temperatures during summer months).
2. For each reference year modelled, identify a subset of days (e.g. top 5 hottest days in a region). During these days and the day that follows any of these hot days, the 10% POE summer capacity will be applied to all generators in that region.
3. Across all other days during summer period, the typical summer capacity will be applied to all generators in that region.

New data requirements

- The additional data required to implement this approach would be relatively simple, being the addition of another field for which generators would enter typical summer capacity over the next 10 years.
- This would also allow intermittent generators to provide their typical capacity and also a potentially lower value that reflects the impact of temperature on their maximum production.

Benefits of the new approach

- Relatively simple from the perspective of generators providing information to AEMO, and also relatively simple to implement in market modelling undertaken by AEMO or others using AEMO's published assumptions.
- Captures the risk of temperature derating under extreme conditions without understating availability in times more moderate temperature, but where reliability could be at risk due to concurrent outages.
- Would also improve other modelling exercises such as forecasting fuel consumption by better modelling energy production capabilities across summer.

Questions?

- Any issues with supplying this additional data field?
- Is the proposed approach to identifying “hot days” suitable?
- Does this approach address concerns regarding the conservatism of the current methodology?
- Other alternatives worth considering?