From: Ron Logan
Sent: Wednesday, 29 June 2022 7:51 PM
To: Energy Forecasting <<u>Energy.Forecasting@aemo.com.au</u>>
Subject: AEMO FRG Consultation - Determination of Forced Outage Rates

Andrew

Please accept this as Shell Energy Australia's submission to AEMO FRG consultation on Forced Outage Rates to be used in the 2022 ESOO modelling.

Transmission Unplanned Outage Rates

AEMO had determined that for the 2 categories of forced outages that may apply to the defined transmission line flow paths to be included in the 2022 ESOO modelling that the rates for a single line outage and the reclassification of a section of the double transmission line flow path are to be combined to a single outage rate to which AEMO will apply a constraint on network flows consistent with that applied for a single line outage.

Shell Energy Australia notes that this proposed outcomes is inconsistent with and more conservative that the constraints applied at Dispatch by AEMO following the reclassification of any of the double circuit line flow paths. Constraint outcomes invoked for Dispatch following a "reclassification" are of higher flow capability than that invoked for a prior outage of one of the lines. Combining of the two discrete outage rates to one and use of the a network flow limit based on a single circuit outage will over estimate the impact of reclassification events on these network flow paths.

By way of example;

Moorabool – Heywood – South East Flow Path - The limit applied for an outage of one line is 50 MW, whereas the limit applied following reclassification as a credible contingency is 250 MW.

Liddell – Muswellbrook - Tamworth – Armidale – Dumaresq – Bulli Creek Flow Path – The limit applied for an outage of the Dumaresq – Bulli Creek line is approx. 450 MW but is subject to the availability of contingency FCAS reserves in the Qld region, whereas the limit applied following reclassification as a credible contingency is 850 MW and is not subject to the availability of contingency FCAS reserves in the Qld region.

We submit that forced outages should be modelled separately for unplanned single line outages and for reclassification of any of the double circuit lines as a credible contingency as both the rates of occurrence and the limits applied by AEMO at Dispatch are different.

In addition, we are concerned by the combining of long duration unplanned outages on Basslink with short duration outages. This combining of outage types to one set of input parameters may result in over estimate of modelled future outages on Basslink.

Generator Forced Outage Rates

AEMO has introduced concerns regarding what is defined as an emergency planned outage. We would liken this to what is defined as a Maintenance Outage in accordance with IEEE SA – P762. In addition to this issue set out in the presentation, AEMO staff also raised concerns at the FRG meeting on Wednesday 29 June 2022 with issues associated with planned outage extension. As an International Standard already exists for the determination of different generating unit outage states

we suggest that AEMO consult with participants regarding its adoption for NEM generating unit outage reporting.

As to what should be included in modelling of generator forced outages in the ESOO we consider modelling should also be consistent with what is adopted internationally which we understand is limited to the inclusion of defined forced outages only.

Factors AEMO Should Consider in Future Assessments

Modelling of generator and critical transmission network flow paths forced outages can have a critical impact on the forecasts of future unserved energy. As such, AEMO must be transparent in all reports regarding input assumptions and what has or has not been included.

In particular, the choice of transmission flow paths must be reviewed annually with regards to the commissioning of new local remote generation resources on, or new transmission lines from local remote generators to, a point on one of the defined interconnector flow paths, which may impact flows between regions across the selected flow path. Only where an outage of the selected flow path impacts the ability for a defined interconnector transmission network to transfer the nominal rated capacity between regions should a section of intra-regional network be included as a defined interconnector flow path for forced outage modelling.

By way of example, commissioning of additional generation resources north of Tamworth could see the Liddell – Muswellbrook - Tamworth – Armidale – Dumaresq – Bulli Creek Flow Path removed as a defined interconnector flow path from the modelling.

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