

FORECASTING AND PLANNING REFERENCE GROUP

Improving the accuracy of reliability assessments

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PRESENTED BY FORECASTING AND PLANNING AEMO



- Forecasting and Planning provide reliability assessments in two timeframes:
 - Two years:
 - Medium Term Projected Assessment of System Adequacy (MT PASA)
 - Energy Adequacy Assessment Projection (EAAP)
 - Ten years:
 - Electricity statement of Opportunities (ESOO)
- In seeking to continuously improve accuracy of our assessments we are:
 - Exploring ways to gain access to better information
 - Adapting our methodologies.

- Developing load traces that capture variability in climate conditions impacting:
 - Coincidence of demand
 - Contribution of wind
 - Magnitude of peak
- Energy constraints related to fuel supplies, and dual fuel capability
 - What data should we be asking for?
 - How can we best reflect these constraints?
- Assumptions around future new entry/exits
 - Committed vs Advanced - is there a case for changing/developing additional categories for inclusion in planning studies?
- Any other inputs we should be considering?

- Energy Supply Outlook
 - Combines gas and electricity to determine energy supply adequacy
 - Two year assessment due in May (combined with EAAP)
 - Ten year update in August (formerly the ESOO)
- Obtaining data through a new data dashboard
 - Intention is to replace IMAGE
 - Use a single flexible data system for all F&P data requests
- MT PASA redevelopment
 - New methodology and outputs
 - Reliability standard implementation guidelines consultation
 - Potential rule change consultation

Background slides

7. SCHEDULE 2: DEVELOPMENT OF 10% POE AND 50% POE DEMAND TRACES FOR THE EAAP

The demand traces used in the *EAAP* will reflect the demand met by *scheduled* and *semi-scheduled* generation in the NEM.

An hourly resolution will be used in the *EAAP* probabilistic simulations, requiring hourly *demand traces* to be used. These traces will be generated using the same method employed to produce demand traces for the *National Transmission Statement* under Rule 11.27 or the *National Transmission Network Development Plan* under the *Rules* (as the case may be) as explained below.

The method involves adjusting historical demand patterns to match forecast *energy* and peak demand projections to determine *10% and 50% POE demand traces* for the *study period*. The historical years used in deriving the *10% POE and 50% POE demand traces* generally reflect the most recent year/s in which the load traces most closely matched the criteria for the nominated 10% and 50% POE years.

A 10% POE maximum demand projection takes into consideration both the probability of extreme temperatures and day of the week. It is expected to be exceeded, on average, no more than once every 10 years. That is, for any given year, there is a 10% probability that a 10% POE projected maximum demand will be exceeded. Similarly, 50% POE projected demands are expected to be exceeded no more, on average, than one year in every two.

CURRENT COMMITMENT CRITERIA

5.6.1 Committed, advanced, proposed and conceptual

New production and transmission projects fall into one of four classes of certainty:

- **Committed** – projects that will proceed, with known timing, satisfying all five of the commitment criteria outlined in Table 7. These criteria apply to electricity investments. There are no equivalent commitment criteria for gas projects; however the principals of commitment outlined in Table 7 are applied for the purposes of gas modelling. The costs of committed projects are considered sunk for the purposes of modelling: because there is no investment decision that is calculable for committed projects, their costs are not included in any of the market models.
- **Advanced** – projects that satisfy at least three, but not all, of the commitment criteria, and for which commissioning timing is in doubt. In electricity modelling, advanced projects are tested for economic efficiency in the capacity outlook model. In gas modelling, advanced projects are considered as candidates to relieve supply shortfall for the purposes of reserves adequacy assessment.
- **Proposals** – projects that have fewer than three of the commitment criteria, uncertain timing, and which are strongly subject to changes in the commercial environment. In general, projects classed as proposals do not have sufficient definition to justify special consideration in capacity expansion or gas supply-demand modelling. AEMO uses generic conceptual projects in these cases.
- **Conceptual** – capacity that belongs to a technology class and which may be required to satisfy reserve requirements, but for which no proposal has been forwarded. Conceptual projects include items such as a generic OCGT or CCGT generator, or a pipeline project of a specific length, diameter and pressure class. Costs and capabilities of these projects are developed using recently-completed projects and projections of cost components such as raw material supply and labour.

Table 7 Commitment criteria

| Category | Criteria |
|---|--|
| Site | The proponent has purchased/settled/acquired land (or legal proceedings have commenced) for the construction of the proposed development. |
| Major components | Contracts for the supply and construction of the major components of plant or equipment (such as generating units, turbines, boilers, transmission towers, conductors, and terminal station equipment) should be finalised and executed, including any provisions for cancellation payments. |
| Planning consents/ construction approvals/EIS | The proponent has obtained all required planning consents, construction approvals, and licences, including completion and acceptance of any necessary environmental impact statements (EIS). |
| Finance | The financing arrangements for the proposal, including any debt plans, must have been concluded and contracts executed. |
| Final construction date set | Construction must either have commenced or a firm commencement date must have been set. |