Expenditure Forecast Assessment Guidelines Working Group meeting No. 10

Summary of meeting - 27 March 2013

Category assessment – Repex model, augex model, and demand forecasting - Held at Park Royal Hotel – Melbourne Airport

On 27 March 2013, the AER, as part of its Better Regulation package, hosted a working group meeting on the development of the expenditure forecast assessment guidelines (the Guidelines). The meeting was chaired by AER Directors, Paul Dunn and Lawrence Irlam. A full attendee list can be found in Attachment A. Attendees included AER staff, Nuttall Consulting (the AER's consultant), and representatives from user groups and network service providers (NSPs).

This summary outlines the key topics and themes of the meeting, including views expressed at the meeting, without ascribing particular comments to any one individual or organisation. The outline broadly follows that of the agenda.

1 Introductions

This workshop consisted of 3 separate sessions that discussed:

- the replacement expenditure (repex) model
- the augmentation expenditure (augex) model
- demand forecasting

To begin the first two sessions, Nuttall Consulting outlined the technical aspects of the repex and augex models, respectively, including the models' algorithms and information requirements (see attached slides).

To begin the third session, AER staff outlined considerations in developing the AER's approach to assessing demand forecasts NSPs submit as part of their regulatory proposals (see attached slides).

2 Major issues for discussion and feedback from forum

The repex model

Responding to a question from NSPs, Nuttall Consulting confirmed the repex model had not changed substantially since the Victorian and Tasmanian distribution determinations.

NSPs queried whether the repex model can produce a range, rather than a point forecast. User groups did not agree with this suggestion because the incentive is for NSPs to argue for the top of the

range. AER staff stated this requires further consideration. However, the AER must decide on a single figure in a regulatory determination, and producing a range of outputs in the repex model would introduce uncertainty to this process.

User groups stated the repex model assumes like-for-like replacement; but this need not always be the case. For example, replacement would not be on a like-for-like basis where there are changing voltage levels. AER staff noted this raises the question of the appropriate categorisation of expenditures.

NSPs stated that calibrating the repex model was an issue during the Victorian distribution determination. NSPs asked why the repex model requires calibration, and what the principles behind calibration were. AER staff stated the focus of the repex model was actual asset lives, rather than theoretical asset lives (for example, asset lives for tax purposes). Nuttall Consulting stated calibration enables the model to better forecast asset lives and repex up to the end of a regulatory control period. It was also noted that the most recent year(s) of capex data for the Victorian DNSPs appeared unreflective of the regulatory control period or of typical asset management processes, requiring multiple years for model calibration proposes.

NSPs noted the AER used the repex model to determine some elements of the capex allowance in the Victorian distribution determination. The AER did this despite acknowledging the repex model is a coarse model (an acknowledgement repeated in the current guidelines consultation). AER staff noted Nuttall Consulting was the AER's consultant in the Victorian distribution determination, and the AER considered all available information to assess capex proposals. AER staff also noted the AER utilised the repex model in a different manner in the Tasmanian distribution determination, given the different information available to it in that context. It was noted that in the Victorian context, the repex model was relied upon to set allowances only after the NSPs had been asked to provide further information, including potential adjustments to the expenditures suggested by the model. Having considered the further information but rejected the explanations offered, the effect of the repex model was to set a floor value for the associated allowance. AER staff stated the Guidelines will set out the AER's approach to assessing capex proposals, including consideration of the repex model (and other models).

NSPs commented the National Electricity Rules (NER) requires the AER to begin its assessment from the NSP's proposal. It appears to NSPs that the AER is beginning its assessment from the data, which it inputs into the repex model to derive a forecast. The AER then compares the NSP's proposal to the repex model's forecast. AER staff noted recent Rule changes had amended this requirement. AER staff commented that the NER requires the AER to have regard to a variety of factors firstly when considering whether a NSP's proposal was efficient, and then also when considering what the efficient (alternative) allowance would be. These included benchmarking and trend analysis of the type facilitated by the repex model. The relevance of various types of evidence under each of these factors, and the weights placed on each when making a decision, would depend on their quality/ robustness. In this process the AER would request relevant information, such as age profiles, analyse this information, then compare the results of the analysis with the NSP's proposal. Nuttall Consulting commented that it spent the majority of its time reviewing the NSPs' proposals during the Victorian distribution determination, rather than focussing on the repex model.

NSPs noted they replace most assets based on condition, rather than age. NSPs asked why the AER is still using age-based analysis. Further, it is difficult to obtain the statistics required by the repex model for assets with low numbers. AER staff stated the AER does not ignore condition-based reports that NSPs submit during a regulatory determination. In recent decisions, the repex model was used to provide an alternative viewpoint of the repex forecast in the event the AER was not satisfied with the

information provided by NSPs. AER staff considered that the guidelines should clarify any limitations of the repex model.

NSPs queried whether calibration of the model removed from NSPs the gains from extending the lives of certain assets. NSPs also queried if calibration assumed any recent (and one off) gains from extending the lives of certain assets would continue to be perpetuated in the future. Nuttall Consulting indicated estimating the expected lives of network assets is one of the purposes of the model (and as such calibration will capture the efficiencies achieved through time).

NSPs indicated categories in the model should reflect cost drivers, for example, asset utilisation.

User groups noted the repex model would indicate where anomalies in a NSP proposal may lie, and where a NSP differs significantly from other NSPs. The repex model may raise questions such as why a NSP's assets are failing earlier, or why they are more expensive, relative to other NSPs.

User groups queried to what extent the completed models will be available to other stakeholders for independent analysis. AER staff stated the preliminary position is such information should be publicly available. However, the AER will resolve this question in a parallel work-stream that will produce a guideline detailing the AER's approach to confidentiality issues.

The augex model

User groups asked how the AER would ensure planning parameters in the augex model are comparable between NSPs. AER staff noted the augex model is still in development. On this note, Nuttall Consulting noted comparability between NSPs will depend on how the AER requests information from NSPs for the purposes of the augex model.

NSPs asked whether the maximum demand data for the augex model is for "N – 1" conditions. NSPs also asked how the model's unit costs (which are in $/MVa) account for the effect of distance on costs. Nuttall Consulting stated the augex model uses maximum demand data under "normal" conditions (i.e. without contingencies), and NSPs should have such data readily available. It was noted this would result in some assets being measured with very low utilisation rates. Nuttall Consulting noted this wasn't a material issue and it is more important to ensure utilisation thresholds appropriately reflected local planning parameters. Regarding the effect of distance on unit costs, Nuttall Consulting stated the augex model could utilise information that accounts for distance, such as $/MVa/km.

Forum participants discussed the challenges of accounting for the effects of solar PV in the augex model, as well as in the NSPs' forecasting processes.

NSPs asked how the AER would calculate growth rates for demand forecasts for the augex model. For example, would the AER calculate growth rates at the spatial level? Nuttall Consulting suggested separating segments by growth rates. For example, the AER could split segments into high growth and low growth groups. Nuttall Consulting noted growth rates should reconcile with system level demand forecasts.

NSPs noted the model produces anomalous results when incorporating high growth rates (e.g. 10% per year) as well as for zero or negative growth. AER staff stated these technical issues are still being explored. Nuttall Consulting noted that many of the "bugs" in the repex model had been worked through because of NSP usage however the augex model had not yet been tested to the same degree.

NSPs asked whether the AER would use the augex model for customer connections. AER staff noted that categories to be subjected to the augex model would need to be clearly defined, including augmentation capex which would be “non-modelled”. NSPs also highlighted that the model may need to account for (and reconcile to) both as-commissioned and as-incurred capex for the purposes of the AER’s PTRM. AER staff referred to a draft of asset categories which was open for consultation. The AER seeks comments on the scope of the proposed asset categories but its initial position is that the categories should aim to capture as much as possible, if not all, of the augmentation capex to maximise the scope of the tool.

NSPs asked whether the repex and augex models will impose information requirements in addition to the current RINs, as well as whether the AER will explain how it will use the models. AER staff agreed that some changes to data collection were expected to result from this consultation. AER staff continued that one of the aims of the consultation process is to limit the burden from additional information requirements. AER staff suggested that the Guidelines would likely acknowledge how tools such as the augex and repex models would evolve over time. AER staff noted the details of the models will be available in the models’ handbooks, rather than in the Guidelines.

AER staff noted the augex model is still in development, so have no preconceived notions on how to segment electricity networks. AER staff expressed the preference for comparability across NSPs and provided participants a list of indicative asset categories and sub-categories for the purpose of assessing repex and augex in a regulatory determination (see section 3 below).

One NSP representative questioned the value of the augex model in comparing costs given different voltages and utilisation between networks. AER staff acknowledged the differences between networks was a generic issue to all benchmarking work and considerable effort would be placed on trying to recognise these differences. AER staff stated the augex model would assist in pointing to areas where the AER can perform more detailed assessments, including in asking NSPs to explain why it appears to have different costs to its peers. User groups stated the augex model may assist users to understand the scale of the networks. The augex model would also assist in identifying the areas in which a NSP has higher costs, as well as areas of lower costs, relative to its peers.

NSPs stated it would be difficult to convert their network into the format of the augex model. A NSP noted they are already required to report in a manner consistent with the augex model categories for reliability purposes (long rural, short rural, CBD, and so on). However, such classification does not capture all customer types in an area. For example, feeder classes as “long rural” may service industrial, suburban and rural customers at various points. AER staff indicated they were open to suggestions to improve the classifications in its models.

User groups expressed concern about the focus of NSPs on the shortcomings of the model, and stated there are no alternative modes of assessment except through bottom-up assessments. User groups stated stakeholders should focus on improving the augex model and regulatory process. One NSP stated that the AER still needs to resolve some issues with the augex model however with its own testing the model had begun to produce some reasonable results, and agreed with user groups that the focus should be on deriving the maximum benefits from the model. The NSP stated the Guidelines should set out a clear path on how the AER will use and refine the augex model as the AER gains experience with each determination. For example, the AER may utilise the model differently in the NSW distribution determination, where the AER will have no experience with the model, compared to subsequent determinations.

User groups asked whether the AER could use the data it collected in the past in the repex and augex models. AER staff noted attempts to do this have not been successful, and that harmonising data requirements will take time and will inevitably be reviewed in future periods.

Forum participants further discussed issues with compiling the data required to populate the augex model. NSPs stated the main difficulty will be in obtaining historical data. However, obtaining the information going forward will not be as problematic.

User groups asked whether the AER's category assessment team is discussing commonalities in data requirements with the economic benchmarking team. AER staff confirmed the teams are liaising on this issue and the data should be consistent even if at different levels of detail. Nuttall Consulting noted the information requirements between the two work-streams may be different, despite overlaps. For example, economic benchmarking may need $/MVa information at a network level whereas the augex model would require such data at the segment level.

Nuttall Consulting suggested establishing a document to work through the issues identified with the repex and augex models.

Demand forecasting

NSPs noted the best practice criteria in the presentation slides were consistent with the principles the AER outlined in a previous presentation to the Energy Networks Association. NSPs stated there is still the question of how the AER will assess NSP proposals against the criteria and how the AER will exercise its discretion in a regulatory determination.

User groups stated it is desirable to see a high degree of independence in how NSPs develop their demand forecasts. User groups also stated the track record of NSPs in demand forecasts is an important consideration in a determination. NSPs noted the AER should be aware of the evolution and improvements in demand forecasting over time when assessing past performance.

NSPs asked whether the AER has a preference for using a particular probability of exeedance for demand forecasts. AER staff stated this is a decision for each NSP; however, the NSP should be able to provide reasons for its decision. It was noted that some jurisdictions require the use of particular POEs in licence conditions.

NSPs asked what considerations the AER wants to examine regarding embedded generation. It was noted that embedded generation has grown very quickly in South Australia in recent years and appears to be shifting peak demand, although historical data is lacking. However in New South Wales such generation has had negligible impact on peak demand. AER staff commented that the AER would require justifications for all potential impacts on forecast demand, in particular those that were not implicit in historical trends/ data. To this end, NSPs should transparently identify the demand impact of embedded generation on demand forecasts.

Forum participants discussed issues with being able to access and publish proprietary models, and the impact on the AER's and users' ability to scrutinise NSP proposals. AER staff expressed a preference to publish all models. NSPs stated this may place a disincentive for their consultants to improve such independently produced models. User groups stated transparency is very important in the regulatory determination process. NSPs also noted practical limitations on providing the AER the entirety of their models for publishing (i.e. due to size and software requirements) and suggested user groups could enter into confidentiality agreements with the proprietary models' developers to enable independent analysis. NSPs stated any forecasts by AEMO also need to be open and transparent.

Forum participants discussed whether bottom-up forecasts should fully reconcile with top-down forecasts. NSPs did not object to the notion that there should be reconciliation between the two types of forecasts, however questioned how accurate this reconciliation should be, and the ability of NSPs to explain situations where a full reconciliation does not occur. AER staff noted there is a role for the

Guidelines to set out the principles on reconciling top-down and bottom-up forecasts. Further, there should be different reconciliation principles for TNSPs and DNSPs. For example, an individual DNSP would be unable to reconcile to a statewide forecast due to the presence of other DNSPs and transmission customers.

It was noted that TNSPs should test any forecasts they rely upon that are produced by DNSPs and the AER's guidelines should clarify its expectations of this process.

3 Other matters

As agreed in previous workshops, AER staff provided indicative asset categories and sub-categories for the purpose of assessing repex and augex in a regulatory determination. AER staff asked stakeholders to consider the asset categories and sub-categories and provide feedback by 8 April 2013. NSPs asked if they could provide feedback at a later date. NSPs commented the categories looked detailed and would require a good degree of consideration. AER staff will consider the request, but suggested maintaining the 8 April 2013 deadline until further notice.

Attachment A: Attendee list

Name	***Organisation***
Andrew Kingsmill	TransGrid
Bill Jackson	ElectraNet
Christopher Roberts	Jemena
Craig Savage	United Energy & Multinet Gas
David Dawson	Strategic Economics Consulting Group
David Headberry	Major Energy Users
Ed King	Ausgrid
Helen Edmonds	SA Power Networks
Ian Thompson	Essential Energy
Irina Kiparskaya	Energy Networks Association
Jennifer Harris	Powerlink
Sujeewa Wije	United Energy & Multinet Gas
John Dyer	SP Ausnet
Jon Curley	Energex
Katie Yates	SP Ausnet
Manoraj Jayasekara	Endeavour Energy
Mathew Abraham	United Energy & Multinet Gas
Michael Seddon	Transend Networks
Neil Watt	CitiPower and Powercor
Nicola Roscoe	Energex
Paul Howarth	Ausgrid
Peter Livingstone	United Energy & Multinet Gas
Peter Wong	Jemena
Rick Wallace	Endeavour Energy

Steve Fraser	SA Power Networks
Terry Holmes	Essential Energy
Tim Wee	ActewAGL
Greg Hesse	Powerlink
Sujeewa Vithana	United Energy
Bruce Mountain	CME for EUAA
Brian Nuttall	Nuttall Consulting
Paul Dunn	AER
Esmond Smith	AER
Lawrence Irlam	AER
Israel del Mundo	AER
Max Hooper	AER
Anthony Hynes	AER