

2014 PLANNING STUDIES

RESPONSE TO CONSULTATION

Published: **December 2014**





CONTENTS

2014 PLANNING CONSULTATION RESPONSE	3
STAKEHOLDER FEEDBACK AND AEMO RESPONSE	5
1.1 Fuel and technology cost review	5
1.2 Least-cost modelling	6
1.3 Scope of AEMO publications	8
1.4 NEFR and connection point forecasts	12
1.5 National gas forecasting report	14
1.6 Value of customer reliability	15



2014 PLANNING CONSULTATION RESPONSE

Overview

This document provides detail on the stakeholder responses to AEMO's 2014 Planning Studies Consultation. The consultation was conducted as part of AEMO's continuous improvement of planning report content, and the input data and modelling assumptions that underpin that content.

AEMO received feedback from AGL, ElectraNet, Grid Australia, GDF SUEZ Australian Energy (GDFSAE), Hydro Tasmania, and TransGrid. In addition, AEMO collected feedback from presentations at a Market Modelling Working Group meeting in February 2014, and engaged with individual stakeholders to clarify and address specific issues.

AEMO received support for its proposed improvements to the National Electricity Forecasting Report (NEFR), connection point forecasts, review of modelling methodology, and updates to technology parameters and costs.

In 2014 AEMO undertook a number of initiatives to improve its modelling inputs. These are:

- A fuel and technology report scope review.
- Stakeholder engagement for the review of modelling methodology.
- Publishing carbon price trajectories.
- Providing greater transparency of large industrial load assumptions in the NEFR.
- Increasing demand forecast granularity through connection point forecasting.

The following summarises the stakeholder feedback received. The detailed feedback and AEMO's responses are presented in the table below.

Fuel and technology cost data¹

Respondents welcomed AEMO's 2014 review of fuel and technology cost data, supported by external consultant ACIL Allen. In particular, respondents sought updates to gas fuel costs; a comparison between the operating and maintenance costs of existing and new renewable energy projects; and the inclusion of plant retirement costs.

In 2014, AEMO received estimates for retirement and rehabilitation cost data for existing generators to strengthen AEMO's investment modelling. The review also considered battery storage and wave energy technologies, which were not included in the 2012 fuel and technology cost review.

Review of modelling methodology

Respondents also welcomed AEMO's proposed review of modelling methodology and suggested areas for investigation and improvement.

In 2014, AEMO reviewed the modelling approach in collaboration with a dedicated stakeholder focus group held in May, and more generally through the Market Modelling Working Group (MMWG).² AEMO expects that updated fuel and technology cost data, particularly plant retirement costs, together with an improved estimate of plant technical life, will provide more realistic outcomes from the least-cost modelling for the National Transmission Network Development Plan (NTNDP).

Medium-term planning

Some respondents considered medium-term planning to be outside the scope of the NTNDP and expressed concern that it would limit AEMO's ability to undertake long-term planning for national transmission flow paths.

Respondents generally supported AEMO's work on medium-term planning to support the Australian Energy Regulator's (AER) revenue reset determination review, and recommended publishing the outcomes of this work outside of the NTNDP. AEMO worked collaboratively with Transmission Network Service Providers (TNSPs) and the AER to progress this work as an input into revenue reset processes.

AEMO prepared an independent view of the transmission network investment needs in New South Wales (NSW) and Tasmania. The scope of work and findings were developed after consultation with the AER and respective

¹ Available at: http://www.aemo.com.au/Electricity/Planning/Related-Information/~/_media/Files/Other/planning/2014%20Assumptions/Fuel_and_Technology_Cost_Review_Report_ACIL_Allen.aspx

² Available at: <http://www.aemo.com.au/About-the-Industry/Working-Groups/Planning-and-Modelling-Forum/Market-Modelling-Working-Group>.



TNSPs. In August 2014, AEMO submitted these planning reports to the AER to consider as part of its regulatory determination process for NSW and Tasmanian transmission network investment in response to growing pressure on network prices.³

Improvements to the National Electricity Forecasting Report

Respondents supported AEMO's proposed improvements to the NEFR, and requested regular comparison of forecasts with actuals, and greater transparency of consumption forecasting assumptions such as scenario economic inputs, large industrial loads, and carbon pricing impacts.

In February 2014, AEMO published a revised scenario definitions document developed in collaboration with industry.⁴ This document provides the basis for the 2014 NEFR forecast assumptions, including scenario economic inputs, and AEMO's carbon price assumptions. Details of publicly-announced events such as large industrial plant closures are identified in the NEFR.

Development of connection point forecasting

GDFSAE and TransGrid highlighted the need for finer granularity in AEMO's connection point forecasting, and supported AEMO's engagement with network service providers to ensure consistency in forecasts.

During 2013–14, AEMO engaged extensively with network service providers in NSW, Tasmania and Victoria to capture local information as part of the transmission connection point forecast development. AEMO has continued this collaboration with network service providers in other National Electricity Market regions to ensure robust and relevant forecasts. In October 2014, AEMO published the Transmission Connection Point Forecasting Action Plan, listing the main areas of further improvement that AEMO intends to focus on when producing the 2015 transmission connection point forecasts.

Development of National Gas Forecasting Report

One respondent questioned the need for AEMO to publish an independent national gas forecasting report, as gas forecasting is part of the existing Gas Statement of Opportunities (GSOO) publication.

AEMO's gas forecasts, to be published in the National Gas Forecasting Report (NGFR) later in 2014, will feed directly into the GSOO. Through the NGFR, AEMO intends to provide stakeholders with greater transparency and understanding of gas consumption trends. The development of independent gas forecasts builds on AEMO's understanding of the key drivers of gas demand and their impact on consumption.

The independent gas forecasts will be used in GSOO analysis and are not a duplication of effort; AEMO considers that independent analysis will increase the transparency of information available to gas industry policy makers and stakeholders.

Value of customer reliability

AEMO's review of the value of customer reliability (VCR) received positive feedback from GDFSAE, who sought greater detail on customers' willingness to pay for reliable electricity supply.

AEMO completed its VCR review and published a final report setting out the findings of the review in November 2014.⁵ The results of the VCR review are being used by AEMO in its national and Victorian planning functions.

Further feedback

AEMO welcomes ongoing feedback on modelling and assumptions. Emails can be sent to: planning@aemo.com.au

³ Available at: <http://www.aemo.com.au/Electricity/Planning/Independent-Planning-Review--NSW-and-Tasmanian-Network>

⁴ Available at: http://www.aemo.com.au/Electricity/Planning/~/_media/Files/Other/forecasting/2014_Planning_and_Forecasting_Scenarios.ashx

⁵ Available at: <http://www.aemo.com.au/Electricity/Planning/Value-of-Customer-Reliability-review>

STAKEHOLDER FEEDBACK AND AEMO RESPONSE

Specific issues raised by respondents, and AEMO's response and actions are summarised below.

1.1 Fuel and technology cost review

Respondents supported AEMO's external consultant review of fuel costs and technology parameters as a timely and important input to AEMO planning studies. This review included updates to the generator emissions intensity data for use in calculating AEMO's Carbon Dioxide Equivalent Intensity Index (CDEII).

Stakeholder	In submission	Specific comments	AEMO response	AEMO action
AGL	Page 1	AGL broadly supports the technology parameter types listed in the paper. It requests that the review be conducted by external consultants.	Agree. Action complete.	AEMO engaged external consultants ACIL Allen to undertake the review. A final report including methodology and updated fuel and cost data is published on AEMO's planning assumptions webpage. ⁶
ElectraNet	Page 1	ElectraNet recommends wind farm capacity factors be reviewed to ensure that least-cost expansion modelling does not underestimate the level of wind farm capacity that is economic in South Australia.	Noted.	Currently, wind farm capacity factors are based on 2009–10 historical data, consistent with the demand traces used. This year was chosen as a reference trace because it yielded the 'closest to average' results over an eight-year sample studied for the 2011 NTNDP. AEMO reviews wind trace data every few years, and the next review is planned for 2015.
		ElectraNet wishes to clarify the extent to which higher levels of wind capacity in South Australia (i.e., above 2,685 MW) are likely to be economic under a range of future scenarios.	Noted.	AEMO worked with ElectraNet in 2014 to explore the impact of wind capacity limitations on South Australian investment results, and whether these wind limits can be revised. AEMO has removed wind limitations for South Australia in the 2014 NTNDP.
GDFSAE	Page 1	GDFSAE does not support measures that are likely to lead to a step-change in the value of the carbon dioxide equivalent intensity index (CDEII) and result in the index becoming more volatile in representing current and future emissions. GDFSAE considered that revisiting the index was inefficient and counterproductive and irrelevant in light of the (then pending) repeal of the carbon price.	Noted.	AEMO engaged external consultants ACIL Allen to review data published by the Clean Energy Regulator on 28 February 2014, ahead of its use in AEMO's planning studies and CDEII calculations. The reviewed dataset and consultants report is available on AEMO's planning assumptions website. ⁷ AEMO has since completed consultation on the review of the CDEII procedures as required by the rules. More information is available at http://www.aemo.com.au/Consultations/National-Electricity-Market/Carbon-Dioxide-Equivalent-Intensity-Index-Procedures-Review AEMO planning studies will be influenced by the new emissions factors in the longer term (beyond 2020), when carbon prices are projected to be greater than zero.

⁶ Available at: <http://www.aemo.com.au/Electricity/Planning/Related-Information/Planning-Assumptions>.

⁷ See note 6

1.2 Least-cost modelling

Stakeholders supported a review of AEMO's modelling methodology, particularly with respect to projecting generator withdrawals in the near term to 2020. Stakeholders were keen to participate in a focus group to identify current modelling issues and share expertise on possible resolutions. The table below addresses specific concerns about the input assumptions. However, participant feedback on the methodology is being addressed directly through focus group discussions.

Stakeholder	In submission	Specific comments	AEMO response	AEMO action
AGL	Page 1	Fixed Costs AGL recommends the inclusion of fixed costs of generator seasonal mothballing in least-cost modelling, and the additional maintenance costs to bring it in and out of service.	Noted.	Existing modelling assumes that full fixed costs are incurred. AEMO does not assume any fixed costs associated with seasonal mothballing. AEMO will consider these costs in the next review of fuel and technology cost data planned for 2016.
AGL	Page 1	Staged Retirement AGL recommends AEMO introduce dry storage as an interim step which may or may not lead to retirement. This approach would allow the model to more reasonably bring back old plant, rather than trigger new build. The decision to place plant into dry storage or fully retire it depends on the generator's view on future market conditions, and the costs of retirement, including site remediation.	Noted. In progress.	AEMO is investigating mechanisms to apply dry storage as an alternative or interim step before permanent retirement in its modelling process. In 2014, AEMO reviewed the modelling methodology used to produce generator retirement projections. This included adding greater detail of potential retirement costs, and additional constraints that represent the technical life of the plant.
ElectraNet		ElectraNet supports examining different methods to assist in planning the long-term future development of the grid. ElectraNet suggests that for the purposes of a Regulatory Investment Test–Transmission (RIT-T), a market-driven approach should be used in conjunction with, and not to the exclusion of, a least-cost expansion approach.	Noted. Completed.	In 2014, AEMO reviewed its least-cost modelling methodology in collaboration with a stakeholder focus group. The scope of this review included selecting an appropriate methodology suitable for use in NTNDP and RIT-T studies.
		ElectraNet recommends the following improvements to the least-cost model be considered: <ul style="list-style-type: none"> • Inclusion of transmission planned and forced outages. • Improvements in understanding and quantifying the impacts of 	Noted.	AEMO considers transmission outage rates in its detailed Victorian network studies. However, they are less relevant for long-term national studies. At that level, transmission outage rates tend to be smaller than generation outage rates, and have a negligible impact on modelling results. For wind, AEMO uses 2009–10 historical data, consistent with the demand traces used. This year was chosen as a reference trace because it yielded closest to average results over an eight-year sample studied for the 2011 NTNDP. AEMO reviews wind trace data every few years, and the next review is planned for 2015.

Stakeholder	In submission	Specific comments	AEMO response	AEMO action
		stochastic generation and other variables such as wind farms.		
GDFSAE	Page 3	GDFSAE raised a number of concerns regarding the appropriateness of least-cost modelling and suggested AEMO consider alternative market modelling approaches to better represent market behaviours and responses.	Noted. Completed.	AEMO is reviewing potential profit or profit-proxy driven approaches in parallel with a range of possible model enhancements suggested through the least-cost modelling focus group.
GDFSAE	Page 3	GDFSAE suggests it would be useful to consider alternate assumptions and scenarios where the Renewable Energy Target (RET) is not met.	Noted.	AEMO will use renewable energy target levels under the legislated RET as the basis for generation expansion planning. The model allows the eligible parties to pay a penalty price, which is \$93 nominal.
Hydro Tasmania	Page 1	Hydro Tasmania recommends that the Basslink interconnector export capacity be determined using actual limit equations and dynamic protocol data, or alternatively reduced to 500 MW.	Noted.	AEMO's modelling for NTNDP studies does not consider inertia constraints in the long term plan as it does not model unit commitment.
Hydro Tasmania	Page 1	Hydro Tasmania recommends modelling a second Tasmanian interconnector with the power transfer of 600 MW in both directions at a cost of \$900 million.	Noted.	AEMO's 2014 NTNDP modelling examined the economic viability of constructing a second interconnector between Tasmania and Victoria, and found it was not economically viable under the range of scenarios considered.
Hydro Tasmania	Page 2	Hydro Tasmania raised concerns over the operation and maintenance cost differential between old and new wind farms. Hydro Tasmania recommends a review of the operating and maintenance (O&M) cost comparisons for old and new wind farms. In addition, Hydro Tasmania considers the current capital cost assumptions of wind and solar photovoltaic (PV) systems post 2020 are too optimistic.	Noted. Action complete.	In 2014 AEMO engaged ACIL Allen to conduct a full review of fuel and technology cost data, including operating, maintenance, and capital costs (including wind and solar PV). Final datasets are published on AEMO planning assumptions website. ⁸
Hydro Tasmania	Page 2	Hydro Tasmania sought clarification on the meaning of the five published price streams for capital costs.	Clarified.	The five price streams reflect generator capital costs corresponding to the five scenarios described in the 2012 scenario definitions document. The 2014 scenario definitions are available on AEMO website at http://www.aemo.com.au/Electricity/Planning/~/_media/Files/Other/forecasting/2014_Planning_and_Forecasting_Scenarios.ashx .

⁸ See note 6

Stakeholder	In submission	Specific comments	AEMO response	AEMO action
Hydro Tasmania	Page 2	Hydro Tasmania recommended that a maximum limit for unobservable generation should be introduced for each system, based on the ability to meet frequency standards.	Clarified.	Rooftop solar PV generation is modelled as part of the NEFR demand forecasts and includes assumptions about potential saturation points for this technology. ⁹
Hydro Tasmania	Page 3	Hydro Tasmania suggested that peak contribution of wind be modelled as a function of the installed capacity of wind generation.	Clarified.	The assumed contribution of wind at times of peak demand in each region is based on the level of wind output experienced at least 85% of the time, during the top 10% of demand periods, over the past five years. This is expressed and applied as a percentage of installed capacity. In the 2014 NTNDP, this is 3.3% for Tasmania.
Hydro Tasmania	Page 3	Hydro Tasmania sought clarification on whether the level of plant retirements assumed in 2016–17 are applied to all scenarios regardless of carbon price incentives.	Clarified.	Retirement decisions in the NTNDP are an outcome of the model simulations and can differ across scenarios. In 2014, AEMO reviewed the modelling methodology used to produce generator retirement projections. This included adding greater detail on potential retirement costs, and including additional constraints that represent the technical life of plant.
Hydro Tasmania	Page 4	Hydro Tasmania recommended that a second carbon price trajectory be used with eight years of zero carbon price followed by recovery to the international carbon price level.	Noted. Action complete.	Since the publication of the 2014 Planning Studies Consultation, AEMO has published a revised scenario definitions document on AEMO's forecasting webpage. ¹⁰ The carbon price assumptions in these scenarios are aligned with Hydro Tasmania's recommendation.
Hydro Tasmania	Page 4	Hydro Tasmania recommended that new wind generation in Tasmania be limited to 400 MW in the absence of a second interconnector.	Noted.	Following further discussions with Hydro Tasmania, AEMO considers incorporating inertia constraints will achieve improved results for wind dispatch rather than a fixed limit of 400 MW as suggested by Hydro Tasmania. AEMO will consider use of inertia constraints in market modelling for 2015 NTNDP.

1.3 Scope of AEMO publications

AEMO received a number of comments from participants regarding the scope of the 2014 NTNDP and ESOO publications. There was broad support for new long-term development plans that utilise the latest planning scenarios. However, respondents expressed concern over the publication of medium-term intra-regional network plans. Some stakeholders expressed concern that the medium-term planning work may divert resources away from AEMO's broader nationally-focused work in the NTNDP. AEMO will undertake this medium-term analysis outside of the scope of the 2014 NTNDP and publish this work separately.

⁹ Available at: <http://www.aemo.com.au/Electricity/Planning/Forecasting/National-Electricity-Forecasting-Report-2013/-/media/Files/Other/planning/NEFR/2013/2013%20NEFR%20Rooftop%20PV.ashx>.

¹⁰ See note 4

Stakeholder	In submission	Specific comments	AEMO response	AEMO actions
AGL	Page 2	AGL supports the need for various economic and policy scenarios in the review of the transmission network. AGL also considers it important that the data is provided in a user-friendly format for market participants to review.	Noted.	In February 2014, AEMO published a revised scenario definitions report ¹¹ on AEMO's forecasting webpage. These scenario definitions have been developed in collaboration with industry. The economic report by Independent Economics and Frontier Economics, including additional data regarding the various economic and policy definitions, is published on AEMO's website. ¹²
AGL	Page 2	<i>Electricity Statement of Opportunities (ESOO)</i> AGL recommended there be a review of the information collected by AEMO's online survey. Specifically, some of the information requested through the survey has already been provided to AEMO through the registration process. While acknowledging that information such as the 10-year forecast for summer and winter capacities is essential, AGL suggested it would be useful to review whether all of the information required by the survey is relevant to the development of the ESOO. This would reduce the burden on participants in completing the survey. AGL also considered it would be helpful to clarify when generation projects are included in the ESOO. AGL recommended that projects that are still in concept stage not be included.	Noted and clarified.	AEMO undertakes the generation survey on an annual basis. To minimise duplication of effort, AEMO pre-populates the surveys with information available from previous surveys and the registration system. Some information fields are optional (and indicated as such in the survey), and these values are used to supplement or validate technology parameters collected through AEMO's fuel and technology cost review. AEMO makes every effort to collect relevant industry data to improve the accuracy and adequacy of its long-term modelling. Generation projects are considered in AEMO's modelling based on the project status: committed, advanced, or proposed. The definitions of the project status criteria are available in section 4.10.1 of the planning methodology and input assumptions document available on AEMO's website. ¹³ Only committed generation projects are considered in AEMO's detailed modelling for the ESOO.
ElectraNet and Grid Australia	Page 3 (ENET) and Page 1 (GA)	ElectraNet and Grid Australia recommended that more scenarios be explored in greater detail for the NTNDP to cater for a wider range of possible future conditions.	Noted. In progress.	The 2014 NTNDP studies are based on the revised scenario definitions ¹⁴ , developed in collaboration with an industry stakeholder working group comprising generators, network service providers and customers, and updated fuel and technology cost review using external consultants. AEMO considers these updates cover a range of future scenarios of value to market participants.

¹¹ See note 4.

¹² Available: at <http://www.aemo.com.au/Electricity/Planning/Forecasting/National-Electricity-Forecasting-Report/NEFR-Supplementary-Information>

¹³ Available: at http://www.aemo.com.au/Electricity/Planning/Related-Information/-/media/Files/Other/consultations/nem/2014_Planning_Consultation_Methodology_and_Input_Assumptions_30_jan_14.ashx

¹⁴ See note 4

Stakeholder	In submission	Specific comments	AEMO response	AEMO actions
		<p>This is relevant given growing uncertainty about the future (such as variability in demand, and changes in generation developments including decommissioning, dry storage, and recommissioning).</p> <p>ElectraNet and Grid Australia considered that presenting a longer-term (at least a 20-year) strategic development plan for national transmission flow paths in the NTNDP for a range of future scenarios, is valued by market participants and is consistent with the intended purpose of the NTNDP.</p> <p>ElectraNet and Grid Australia noted that AEMO's proposed phase-in of medium-term network outlooks appear to narrow the intended focus of the NTNDP rather than broadening it.</p> <p>ElectraNet and Grid Australia expressed concern that a greater focus on medium-term planning may result in a reduced focus on the long-term strategic planning that is the intended focus of the NTNDP.</p>		<p>The scope of NTNDP studies covers planning over a 20-year horizon.</p> <p>AEMO published its work on the medium-term outlook in July 2014 to provide input to the AER's revenue determination processes.¹⁵</p>
ElectraNet and Grid Australia	Page 4 (ENET) and Page 1 (GA)	<p>ElectraNet and Grid Australia recommend that the NTNDP continue to examine the national transmission flow path and provide information on its efficient long-term development, taking into account options across South Australia and Victoria and the reliability and market benefits resulting from augmenting this corridor.</p>	Noted.	<p>Each year, AEMO's scope of work for the NTNDP includes examining transmission flow paths and the need for additional interconnector capacity. However, in light of the recent decline in demand forecasts, increased uptake of decentralised renewable generation, and the large capital cost of interconnectors, the least-cost modelling for 2014 NTNDP did not identify any required change in existing interconnector capacity or need for new interconnectors.</p>
ElectraNet	Page 3	<p>ElectraNet suggested that the outcomes of AEMO's proposed work on the medium-term outlook for regional networks to support AER</p>	Agree. Completed.	<p>Considering comments from respondents to this consultation and following further discussions, AEMO published its work for the medium-term outlook in July 2014, outside the NTNDP.¹⁶</p>

¹⁵ Available at: <http://www.aemo.com.au/Electricity/Planning/Independent-Planning-Review--NSW-and-Tasmanian-Network>

¹⁶ See note 15

Stakeholder	In submission	Specific comments	AEMO response	AEMO actions
		network revenue determinations, be reported separately by AEMO and not be considered as part of the NTNDP, consistent with the approach taken by AEMO in relation to South Australia.		
ElectraNet	Page 3	ElectraNet considered that it is an important part of AEMO's national transmission planner role to explore potential longer-term national transmission flow path developments and demonstrate under which future scenarios these developments may become economic if generator capital decisions deviate from AEMO's least-cost expansion.	Agree.	The 2014 NTNDP studies are based on the revised scenario definitions ¹⁷ , developed in collaboration with an industry stakeholder working group comprising generators, network service providers and a customers. AEMO considers these updates cover a range of future scenarios of value to market participants. A list of transmission interconnector options considered is available in the additional modelling data on the Planning assumptions ¹⁸ webpage.
TransGrid	Page 1	TransGrid raised concerns about AEMO's proposal to include the assessment of medium-term intra-regional network augmentation as part of the NTNDP.	Clarified.	AEMO's discussions with TransGrid clarified that medium-term planning was part of AEMO's independent review of the regional transmission networks. This work will assist the AER's review of transmission network service provider revenue reset proposals.

¹⁷ See note 4

¹⁸ Available at: http://www.aemo.com.au/Electricity/Planning/Related-Information/~/media/Files/Other/planning/Planning_Studies_2013_Additional_Modelling_Data_July.ashx

1.4 NEFR and connection point forecasts

In supporting improvements to the National Electricity Forecasting Report (NEFR), stakeholders requested greater transparency in the assumptions underpinning demand forecasting, such as economic assumptions, large industrial loads, and carbon pricing impacts. Stakeholders also sought regular comparison of forecasts and actual consumption. Stakeholders highlighted the need for finer granularity in connection point forecasts, and supported strong engagement with network service providers to ensure consistency in their development.

Stakeholder	In submission	Specific comments	AEMO response	AEMO action
GDFSAE	Page 2	<p>GDFSAE welcomed the proposed improvement areas for the 2014 NEFR and also asked that this information be made available to participants, particularly in relation to the following:</p> <ul style="list-style-type: none"> • Additional loads in the large industrial sector. • Price demand elasticity at times of maximum demand. • Solar PV forecasts to be included in maximum demand forecasts. 	Noted and clarified	<p>Given the commercially sensitive nature of information regarding large industrial load, AEMO is unable to specifically identify these loads and how they contribute to electricity consumption. Publicly-announced changes in load, such as large industrial plant closures, were identified in the forecasts.</p> <p>For the 2015 NEFR, AEMO will investigate the development of price elasticities by industry sector, with a view to publication.</p> <p>Rooftop PV forecasts have been integrated into the maximum demand forecasts for the 2014 NEFR. These forecasts identify the amount of solar PV output available at time of maximum demand, the potential offset at the time of peak, and the resulting output at the new time of maximum demand.</p>
GDFSAE	Page 2	<p>Transparency of assumptions</p> <p>GDFSAE found the low, medium, and high demand approach useful and appropriate. However, when participants wish to make adjustments to the forecast, the current approach has limited value as the assumptions are not transparent.</p> <p>For example, GDFSAE considered it unclear what was assumed to produce the low demand forecast. Also, that there is a risk of double counting reductions if participants wish to develop their own forecasts based on the latest information, as recently exemplified by the Point Henry aluminium smelter closure and potential declines in demand from the vehicle manufacturing sector.</p>	Noted	<p>Any publicly-announced industrial load closures are specifically identified in the 2014 NEFR, consistent with the approach used in the 2013 NEFR. Where assumptions relating to individual customers result in noticeable shifts in consumption, AEMO is liaising with these customers to maximise the transparency of these assumptions, noting that this information can be commercially sensitive.</p>

Stakeholder	In submission	Specific comments	AEMO response	AEMO action
		<p>Increased granularity of demand and regular updates (ref. sections 3.4 and 3.5).</p> <p>GDFSAE supported the connection point forecasting methodology currently developed by AEMO.</p> <p>In addition, GDFSAE encouraged AEMO to provide finer granularity demand information to stakeholders across all demand classes, and to establish whether the frequency of publishing this information meets industry needs – especially demand classifications such as residential and commercial consumption, large industrial load, and distributed “behind the meter” generation.</p> <p>GDFSAE considered that regular updates, including a comparison of the initial forecast and actual demand, would be useful to participants and provide a feedback mechanism to improve forecasting methodologies. GDFSAE considered a quarterly cycle to be appropriate.</p>		<p>For the 2014 NEFR, AEMO has increased its industrial load forecast to include all customers consuming more than 10 MW. This has more than doubled the number of industrial loads.</p> <p>For the 2015 NEFR, AEMO will investigate segmenting demand information according to different customer classes. It is expected the connection point forecasting process will help provide this granularity of information.</p> <p>AEMO welcomes input from industry on the frequency of forecast updates.</p> <p>Updates on the variance between forecast and actual demand are currently provided in AEMO’s NEFR Update and quarterly Supply-demand Snapshot publications. AEMO recently published a forecast accuracy report in November 2014.¹⁹</p>
Hydro Tasmania	Page 5	Hydro Tasmania proposed a sensitivity study for agreed reductions in connection point load representing downturn in the manufacturing industry for all states.	In progress	AEMO’s revised scenario definitions encapsulate the effects of major industrial demand reductions.
TransGrid	Page 1	TransGrid requested further clarification on the scope of connection point forecasts – if they would go beyond the local main transmission system.	Noted	<p>AEMO published the transmission connection point forecasts for New South Wales, Tasmania and Victoria. AEMO is currently developing forecasts for South Australia and Queensland, and will repeat the forecasting exercise for Tasmania and New South Wales. In October 2014, AEMO published the Transmission Connection Point Forecasting Action Plan, listing the main areas of further improvement that AEMO intends to focus on when producing the 2015 transmission connection point forecasts.</p> <p>AEMO intends to publish transmission connection point forecasts annually for all five NEM regions.</p> <p>AEMO is still considering any potential future role in distribution connection point forecasting, and will continue discussions on this issue with the AER and jurisdictions.</p>

¹⁹ Available at: http://www.aemo.com.au/Electricity/Planning/Forecasting/National-Electricity-Forecasting-Report/-/media/Files/Other/planning/NEFR/2014/2014%20Supplementary/Forecast_Accuracy_Report_2014.ashx

Stakeholder	In submission	Specific comments	AEMO response	AEMO action
TransGrid	Page 3	TransGrid raised concerns about AEMO's ability to undertake connection point forecasts in a meshed network at the bulk supply point, based on AEMO's methodology.	Noted	During 2013–14 AEMO worked closely with the network service providers (NSPs) in NSW to develop a set of forecasts at the transmission connection point level. As part of these discussions, AEMO greatly appreciated the input and suggestions provided by these businesses, including TransGrid. In particular, when developing forecasts in a meshed system, AEMO had several discussions with Ausgrid and Endeavour Energy and agreed on a way forward for developing forecasts at the connection point level. The forecasting process involved aggregating the connection points in the meshed system and calculating a combined forecast.

1.5 National gas forecasting report

Further justification was sought on AEMO's proposals to publish a National Gas Forecasting Report in addition to its annual GSOO, and to undertake independent gas forecasting activity.

Stakeholder	In submission	Specific comments	AEMO's response	AEMO action
AGL	Page 2	<p><i>National Gas Forecasting Report</i></p> <p>Regarding the proposed NGFR, AGL considered that a clear case must be made for an additional gas forecasting requirement, when gas forecasting is already an element of the GSOO.</p> <p>Additionally, there must be a strong rationale for moving the gas forecasting in house, when it has been outsourced to technical experts for earlier GSOO publications.</p> <p>Further, gas forecasting must be consistent with the objectives of the GSOO.</p>	Noted	<p>AEMO's aim is to provide industry with forecasts that are transparent, modular and reflective of the real-world environment. These forecasts will be published in the NGFR, considered in GSOO analysis, and will also form the basis of AEMO's participant fees.</p> <p>AEMO's gas forecasts, published in the National Gas Forecasting Report (NGFR) December 2014, will feed directly into the GSOO. Through the NGFR report, AEMO intends to provide stakeholders with greater transparency and understanding of gas consumption trends. The development of independent gas forecasts builds on AEMO's understanding of the key drivers of gas demand and their impact on consumption.</p> <p>The independent gas forecasts will be used in GSOO analysis and are not a duplication of effort; AEMO considers that independent analyses will increase the transparency of information available to gas industry policy makers and stakeholders.</p> <p>In bringing the development of these forecasts in-house, AEMO intends to provide industry stakeholders with a clearer, more detailed understanding of gas consumption and enable AEMO to better anticipate and inform stakeholders of expected changes in gas consumption, based on changes in key demand drivers.</p>

1.6 Value of customer reliability

GDFSAE supported AEMO's review of the value of customer reliability index, and highlighted several important considerations.²⁰

Stakeholder	In submission	Specific comments	AEMO's response	AEMO action
GDFSAE	Page 2	GDFSAE considered the VCR an important parameter in decision making and strongly supported the comprehensive manner in which AEMO is seeking to quantify it. Specifically, quantifying the influence of the duration, severity, time of day of the outage, and customers' willingness to pay to avoid the outage will serve to better inform decision and policy makers.	Agree.	AEMO undertook a review of the value of customer reliability (VCR). This review was intended to improve the understanding of the level of reliability that customers expect by producing a range of VCR values for residential and business customers across the NEM. This index helps electricity planners, asset owners, and regulators strike a balance between delivering a secure and reliable electricity supply, and reasonable network costs for consumers. AEMO was tasked with this review by the Standing Council for Energy and Resources (SCER) following its 2009 review of extreme weather events. AEMO completed its VCR review and published a final report setting out the findings of the review on 30 September 2014. The results of the VCR review will be used by AEMO in its national and Victorian planning functions.

²⁰ AEMO received several other submissions for the VCR review. These submissions are available on <http://www.aemo.com.au/Electricity/Planning/Value-of-Customer-Reliability-review>