

# **ISP 2022 Consumer Panel**

**ISP Consumer Panel Submission on AEMO's  
*Consultation Paper – Draft Competition Benefits  
Inputs, Assumptions and Methodology October 2021*  
for the 2022 Integrated System Plan**

14 November 2021

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### A Tribute to Mr David Headberry

The National Energy Objectives are based on promoting the long-term interests of consumers of energy. David spent decades doing just that. David's untimely passing on 12 November 2021 is a loss to his Family, his colleagues and to consumers at large. He was a frequent, reliable source of wise advice for us on The Panel and he will be greatly missed.

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## 1 Executive Summary

- The ISP seeks to identify the “Optimal Development Path” for the NEM based on a very large number of inputs and assumptions.
- The ISP must factor in **uncertainty** over coming decades around what energy consumers will want and need from the NEM, uncertainty around the future costs of different network, generation and storage technologies, uncertainty around government policies as well as cater for a range of closure dates for existing generators and numerous other “unknowns”.
- The ISP must balance the risks of building too much, too soon with building too little, too late with building in the wrong places.
- Developing the ISP includes a complex comparison of **costs** and **benefits** for different options, over time, in different “future worlds” (the scenarios).
- There is inherent **uncertainty** in forecasts of both **costs** AND **benefits**. AEMO puts a lot of work into improving the accuracy of forecasts and managing the uncertainty that remains.
- This consultation is about AEMO including a class of **benefits** in the analysis of the 2022 ISP that has been available but not previously used – the benefits to the market of more competition between generators, unlocked by investments in the shared network.
- The Panel is comfortable that transmission investments can *in theory* reduce the potential for the exercise of market power by generators.
- However, we have some genuine concerns about the **process** of consulting so late in the ISP development cycle and about the robustness of the proposed methodology.
- The proposed methodology builds on one published by TransGrid in July 2021 and used as one of the classes of benefits that supports regulated investment in HumeLink.
- The proposed methodology draws on economic analysis of over 15 years ago but is the first attempt to claim sufficient certainty of estimates for this class of benefits to include them in a Transmission Cost Benefit Analysis in the NEM.
- The methodology has been introduced by TransGrid in a way that has resulted in limited scrutiny and debate. AEMO are considering further adapting the untested HumeLink approach (a discrete project) to ISP Development Paths (a series of discrete but connected projects) very late in the ISP development cycle – adding further uncertainty to any estimates produced.
- The Panel consider that the proposed methodology has significant flaws that are likely to overestimate these benefits. Combined with the observable tendency to underestimate the **costs** of Transmission Projects, overestimating **benefits** presents an unacceptable **risk** to consumers of funding **inefficient** regulated assets.
- To now include the proposed approach to competition benefits is to accept that the proposed methodology has now crossed a threshold for inclusion that hadn’t previously been achieved. We do not believe the information provided or the process undertaken achieves that.
- **The Panel is therefore unable to support the inclusion of competition benefits in the 2022 ISP.** There is too much uncertainty in their estimation to be allowed to materially change investment decisions in multi-billion-dollar transmission infrastructure.
- If AEMO chooses to include some amount of competition benefits in the draft or final 2022 ISP, then we strongly recommend excluding components of the methodology with the highest uncertainty and least maturity and amending the methodology to address flaws that are likely to overstate competition benefits. Specific recommendations are provided in the submission.

## 1.1 Context

The ISP Consumer Panel (the Panel) welcomes the opportunity to respond to AEMO's Consultation Paper on 'Draft competition benefits inputs, assumptions and methodology'.

The Panel was established under the National Electricity Rules in November 2020 as part of the oversight framework that accompanied the introduction of the ISP.

This submission is in response to an 'out of cycle' consultation process initiated on October 15<sup>th</sup> 2021. AEMO are considering amending the recently published ISP Methodology to include a class of benefits in the ISP modelling and cost benefit analysis known as 'competition benefits'<sup>1</sup>. These benefits are proposed to be included in the Draft 2022 ISP, which must be published on December 10<sup>th</sup> 2021, which is just 4 weeks from the close of these submissions.

The recently published version of the ISP Methodology states<sup>2</sup>:

- **Competition benefits:**
  - Competition benefits refer to the increased economic efficiency that may occur from improved competitive behaviours in the market as a result of investments.
  - Quantification of competition benefits is a challenging task even when considering a single investment. Including competition benefits throughout the consideration of alternative DPs on a whole-of-system plan would not be possible, nor would the benefits be expected to be material relative to project costs.
  - AEMO does not by default include competition benefits in the CBA analysis, but they could be included by TNSPs as part of subsequent RIT-T analysis on any actionable projects.

The Panel is of the view that, to now include the proposed approach to competition benefits is to accept that the proposed methodology has now crossed a threshold for inclusion that hadn't previously been achieved. We do not believe the information provided or the process undertaken achieves that.

This submission provides feedback separately on **process** and **content**.

## 1.2 Comments on the engagement process

The process of consulting on a substantial change so late in the planning and forecasting cycle makes meaningful engagement very challenging. Given the Panel's stated aim of a '*whole of system plan*' that consumers can have confidence in, our view is that this **process**, unfortunately, risks undermining confidence in the ISP.

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<sup>1</sup> <https://aemo.com.au/consultations/current-and-closed-consultations/competition-benefits-in-the-isp>

<sup>2</sup> Available from <https://aemo.com.au/energy-systems/major-publications/integrated-system-plan-isp/2022-integrated-system-plan-isp/isp-methodology> page 73 (Published 20 August 2021)

It is difficult to see how AEMO can give due consideration to submissions on such an important issue in time for finalising the draft ISP in 4 weeks, particularly given the lead times for the modelling and drafting required for the Draft ISP.

The inclusion of competition benefits *could* materially affect the outcomes of the Draft 2022 ISP and result in consumers funding projects costing billions of dollars. We are also concerned that the consequences of the inclusion of this class of benefits in the Draft ISP for the Regulatory Test for Transmission has not been fully explained to stakeholders. We understand from comments from AEMO staff that the Draft 2022 ISP may also act as an ‘ISP update’ under the rules<sup>3</sup>. That would mean AEMO’s approach to this issue in the Draft 2022 ISP will flow through to current RIT-T projects including HumeLink and may have immediate and irreversible impacts on consumers. These process concerns therefore cannot be dismissed on the basis that the Draft 2022 ISP ‘is only a draft’ and AEMO could consider this issue further before the Final 2022 ISP.

### 1.3 Comments on the substance of the proposed approach

The Panel is comfortable that transmission investments *can in theory* reduce the technical potential for the exercise of market power by generators. However, the ‘competition benefits’ class of benefits have not been included historically as no methodology for their reliable calculation has been established.

Chapter 5 of the National Electricity Rules “Network Connections Access, Planning and Expansion” sets out the requirements placed on AEMO in preparing the ISP. Section 5.22.10 “Preparation of ISP” sets out the approach to market benefits at clause (c) and refers to competition benefits at clause (c)(1)(vii). The Rules state at clause (c)(3) that AEMO must:

- (3) consider all classes of market benefits as material unless it can provide reasons why:
  - (i) a particular class of market benefit is likely not to materially affect the outcome of the assessment of the *development path*; or
  - (ii) the estimated cost of undertaking the analysis to quantify the market benefit is likely to be disproportionate given the level of uncertainty regarding future outcomes.

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<sup>3</sup> See clause 5.22.15. of the NER An ISP Update must be used by AEMO when undertaking the ‘feedback loop’ to assess whether a RIT-T project continues to form part of the ‘optimal development path’ under clause 5.16.5A of the NER. This feedback loop is the final check by AEMO on whether a transmission project has net benefits for consumers and should proceed. If this feedback loop test is completed before the final ISP AEMO will not have an opportunity to reconsider the benefits of the project in the final ISP.

The question of **materiality** is, in our view, *dependent* on considerations of **uncertainty**. From a consumer perspective, estimates of benefits must be sufficiently robust before any mid-point estimate should be used in the cost benefit assessment. The key questions to answer then are around uncertainty in the estimation of the benefits and if they can be estimated with sufficient certainty to be allowed to be material.

TransGrid have recently included competition benefits in the Project Assessment Conclusions Report (PACR) for HumeLink based on a methodology developed by EY. There is no formal consultation process associated with a PACR and there is no longer any requirement for AER approval of the outcomes of the RIT-T process, so there has been almost no scrutiny to date of the proposed approach. AEMO are now consulting on the adoption of a similar approach for the Draft ISP.

The Panel is of the view that the methodology proposed by AEMO and EY for calculating competition benefits is not sufficiently robust (i.e too much uncertainty remains) to allow AEMO to determine that competition benefits are likely to be material and should be included in the analysis for the 2022 ISP.

This conclusion is not only due to the limited consultation that has been undertaken on the issue but also due to the following flaws that we consider are apparent in the proposed methodology:

- The proposed methodology makes numerous simplifying assumptions regarding which generators are likely to exercise market power before and after the ISP project. These ‘with’ and ‘without’ assumptions are likely to materially overstate competition benefits.
- The methodology proposed by EY uses a misleading comparison between generation development paths with and without the transmission project that is likely to overstate or even double-count benefits.
- The proposed approach to estimating competition benefits from increased consumption resulting from reduced consumer (i.e. retail) prices (confusingly called ‘demand response’ by AEMO and EY) is based on highly simplified and unreliable assumptions regarding demand elasticities, future retail prices and consumer behaviour that are not supported by any robust evidence. Those assumptions are so unreliable that all competition benefits categorised as ‘demand response’ should be removed from the methodology and no weight should be placed on them.
- The proposed methodology assumes that generators with market power immediately before the transmission project would have retained the same level of market power for 10 years if the transmission project did not occur. Competition benefits are therefore assumed to apply for 10 years from commissioning of the transmission project. In reality, many other factors

are also likely to erode or change that market power much sooner, including regulatory reforms, the entry of new generators or other transmission projects.

As a result, the Panel is of the view that consumers are very unlikely to actually see a material amount of these competition benefits.

The Panel is therefore unable to support the inclusion of competition benefits in the 2022 ISP. There is a very good reason they have not been included previously in RIT-T or ISP analyses. There is too much uncertainty in their estimation to be allowed to materially change investment decisions in transmission infrastructure. Unfortunately, adapting the approach put forward by TransGrid for HumeLink does not advance the issue across any threshold for certainty or materiality to be included now. Undertaking the required level of further analysis would also simply not be possible in the very limited time available prior to publication of the Draft ISP.

#### **1.4 Recommendations**

Given the timing of the process, limited consultation on the issue, the lack of robustness of the proposed methodology and the resulting extremely high level of uncertainty inherent in the estimates of competition benefits, the Panel recommends that AEMO determines that estimates of competition benefits remain too uncertain to be judged material and therefore will not be included in the draft or final 2022 ISP.

If AEMO chooses to include some amount of competition benefits in the draft or final 2022 ISP, then we strongly recommend excluding components of the methodology with the highest uncertainty and least maturity and amending the methodology to address flaws that are likely to overstate competition benefits, including:

- Considering options for undertaking alternative assessments of which generators are likely to be able to bid strategically after the transmission project and/or discounting the competition benefits to reflect the likelihood that some degree of market power will remain after the project.
- Changing the approach to determining the generation development plans used in the modelling with and without the transmission project to avoid using a misleading comparison between generation development paths that overstates or double-counts benefits.
- Excluding all competition benefits categorised as ‘demand response’ on the basis that they are too unreliable to place any weight on them.
- Reducing the period for which competition benefits are assumed to apply from 10 years post commissioning to *either* 10 years from the time of the analysis *or* 5 years post commissioning.

## 2 Comments on AEMO's proposed methodology

### 2.1 Rules and AER requirements

The National Electricity Rules prescribe the market benefits that can be included in preparing the ISP. These benefits include competition benefits. The AER's Cost Benefit Analysis Guideline provides a high-level explanation of this benefit category<sup>4</sup>:

#### Explanatory box 1: Competition benefits and bidding behaviour

Valuing competition benefits entails modelling the likely impact of a development path on the bidding behaviour of generators (and other market participants) who may have a degree of market power relative to the counterfactual development path.

However, not all changes in bidding behaviour may count as competition benefits. Where changes in bidding behaviour result in lower cost generation displacing higher cost generation, this **may** be counted as a competition benefit. Where changes in bidding behaviour do not affect the generation that is dispatched, this **may not** be counted as a competition benefit. This will be the case even if the bidding behaviour results in changes in wholesale prices. Changes in prices that do not affect the generation that is dispatched are wealth transfers (transfer of surplus) between producers and consumers, and so must be excluded from market benefit calculations.

A more comprehensive explanation is given in the AER's RIT-T Guideline which also provides worked examples of the two approaches that have been developed - Biggar and Frontier - are provided. The AER notes<sup>5</sup>:

*"The key requirement in calculating competition benefits is a robust approach to the methodology for determining 'realistic' bidding behaviour. We do not wish to prescribe the methodology for determining realistic bidding behaviour other than to suggest it should:*

- *be based on a credible theory as to how participants are likely to behave in the wholesale spot market over the modelling period; and*
- *take into account the impacts of other participants' behaviour on the bidding behaviour of any given participant."*

The rules also require the market benefits to be 'material'<sup>6</sup> and that AEMO must:

- (3) *consider all classes of market benefits as material unless it can provide reasons why:*

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<sup>4</sup> AER Cost Benefit Analysis Guideline August 2020 p.21

<sup>5</sup> AER "Application Guidelines – Regulatory Investment Test for Transmission" August 2020 Appendix A pp 88-91 <https://www.aer.gov.au/system/files/AER%20-%20Regulatory%20investment%20test%20for%20transmission%20application%20guidelines%20-%2025%20August%202020.pdf>

<sup>6</sup> NER Section 5.22.10(c)

- (i) *a particular class of market benefit is likely not to materially affect the outcome of the assessment of the development path; or*
- (ii) *the estimated cost of undertaking the analysis to quantify the market benefit is likely to be disproportionate given the level of uncertainty regarding future outcomes.*

There is no further guidance in the rules as to how ‘material’ is to be measured or defined. There is also no guidance as to what level of analysis would be ‘disproportionate’.

The Panel is of the view that the materiality of competition benefits needs to be considered in the context of the level of certainty/uncertainty in the measurement methodology. This is consistent with the reference in the rules to ‘*the level of uncertainty regarding future outcomes*’.

We consider that it is implicit in the rules and required by various aspects of the AER’s Forecasting Best Practice Guidelines, that benefits should only be included in the ISP and treated as material if they can be robustly estimated with sufficient confidence that basing a decision on them will result in an outcome that is in the long term interests of consumers.

This approach is consistent with the approach AEMO, EY and TransGrid have taken to the ‘dynamic’ aspects of competition benefits. The AER’s guidelines allow both static and dynamic competition benefits to be included in an ISP and RIT-T but all of the parties who have investigated these benefits have concluded that dynamic benefits are so uncertain and difficult to model accurately that they should not be included. We agree with that conclusion, but consider that static benefits are also extremely uncertain and should either be excluded or discounted to reflect that high level of uncertainty.

The Consultation Paper states (p3):

*AEMO’s decision to not routinely calculate competition benefits as part of the ISP Methodology was driven by the significant complexity and uncertainty associated with modelling these benefits. This complexity and input uncertainty is compounded when considering benefits of multiple projects that collectively form a candidate development path (CDP), rather than individual elements that meet an identified system need. AEMO therefore concluded that the estimated cost of undertaking the analysis to quantify the market benefit is likely to be disproportionate, given the level of uncertainty regarding future outcomes.*

We agree with this assessment.

## 2.2 The role of TransGrid's approach to HumeLink

As context we note the role of TransGrid's application of the RIT-T in this consultation<sup>7</sup>:

*"Concurrently with AEMO developing the ISP Methodology, TransGrid has been progressing the RIT-T for the HumeLink project. In its Project Assessment Draft Report (PADR), TransGrid concluded that it did not expect competition benefits to be material in terms of identifying the preferred option for this RIT-T. However, through additional testing of expected competition benefits undertaken following the PADR, TransGrid identified that competition benefits did constitute a material class of benefits for the HumeLink project and therefore the net market benefit. As a result, TransGrid did include competition benefits in its RIT-T for HumeLink using an approach outlined in its Project Assessment Conclusion Report (PACR).*

*... Given that HumeLink was identified as an actionable ISP project in the 2020 ISP and TransGrid has subsequently identified material competition benefits through its RIT-T process, AEMO considers it necessary to develop and consult on a targeted methodology for calculation of competition benefits that balances computational complexity with the NER requirement to consider all classes of market benefits unless not likely to impact the outcome of the optimal development path (ODP)"*

As an overarching comment, we are concerned that the methodology proposed has not been subjected to the usual rigour of the NEM's regulatory framework. No formal consultation process exists for the PACR stage of a RIT-T and so usual expectations of peer review, analysis and critique has not found its way to the public domain.

AEMO began consultation on the ISP Methodology in late 2020, holding several public forums and publishing an Issues Paper, a draft ISP Methodology and a final ISP Methodology. The Issues Paper released in February mentioned competition benefits<sup>18</sup>:

*"Additional classes of benefits may also be considered, including the changes in costs due to intra-regional network losses, ancillary services, and competition benefits. The magnitude of these benefits classes is typically low, and may be challenging to quantify appropriately given the level of uncertainty regarding future outcomes. AEMO will consider the appropriate degree of inclusion for these benefits classes, particularly if they are expected to materially affect the assessments."*

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<sup>7</sup> Consultation Paper, p7, 8

<sup>8</sup> See p. 40 [https://aemo.com.au/-/media/files/stakeholder\\_consultation/consultations/nem-consultations/2021/isp-methodology/isp-methodology-issues-paper.pdf?la=en](https://aemo.com.au/-/media/files/stakeholder_consultation/consultations/nem-consultations/2021/isp-methodology/isp-methodology-issues-paper.pdf?la=en)

TransGrid chose not to make a submission by the 12 March closing date, nor to make a submission on the Draft Methodology by the 28th May closing date. It had the opportunity to raise its views on the inclusion of competition benefits to enable a wider and more considered debate. But it chose not to even when it is reasonable to assume they were engaging with EY to develop their PACR methodology. There were no comments in submissions to the Issues Paper on competition benefits<sup>9</sup>.

It is possible that had TransGrid or AEMO raised the issue earlier in the course of consultation on the ISP Methodology there would have been wider and more considered engagement and greater confidence in the approach as a result. We do not understand why AEMO has sought to consult on amending the ISP Methodology to add these benefits only 3 months after the Final ISP Methodology was published. We cannot see how AEMO could come to a conclusion to include these benefits now given the extremely limited consultation and the short time before the release of the Draft 2022 ISP.

Given this, we are led to the conclusion that TransGrid was driven to include these benefits so it could still argue the project meets the RIT-T *net market benefits* test given the nearly 250% increase in capex in the preferred option in the PACR (\$3.3 billion) over the preferred option in the PADR (\$1.35 billion).

### **2.3 AEMO's proposed approach and key issues where feedback was sought**

In this section we provide some specific feedback on aspects of the methodology for assessing competition benefits.

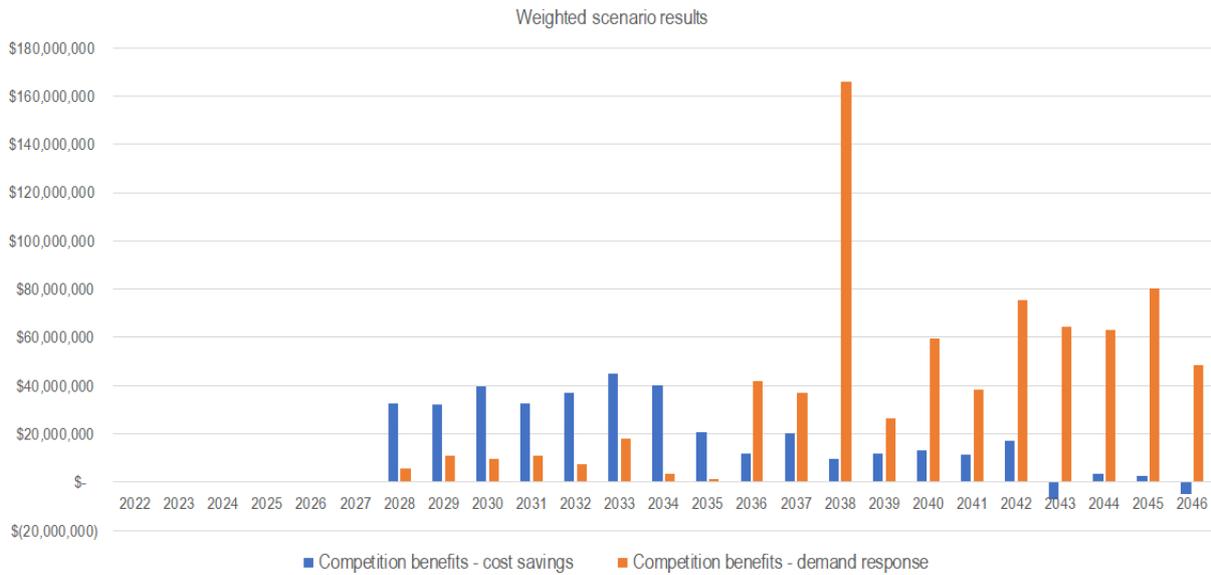
AEMO's proposed methodology segments competition benefits into static and dynamic and then discards the dynamic benefits as being too uncertain and too difficult to model. The methodology then splits the estimation of static benefits into two categories: "Cost Saving" and "Demand Response". The first category is an estimate of the reduction in the cost to the market from reducing the ability of "strategic" players with market power dispatching higher cost generation than would otherwise be the case. The second category is an estimate of the benefits to consumers from increased consumption due to the lower prices resulting from the reduction in strategic bidding<sup>10</sup>.

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<sup>9</sup> See <https://aemo.com.au/-/media/files/major-publications/isp/2021/consultation-summary-report-isp-methodology.pdf?la=en>

<sup>10</sup> The use of the term 'demand response' in the historic context of a 2004 paper by Frontier Economics as opposed to the contemporary use of the term by consumers was a mistake and has hindered engagement.

To illustrate these two claimed benefits over time, the following is taken from the HumeLink PACR (weighted scenarios):<sup>11</sup>



AEMO have sought specific feedback on four key elements:

**Strategic bidding** – the appropriateness of limiting the strategic participation in the game theoretic model to certain coal-fired generators. Our comments can be found at section 2.4.

**Selection of the generation development plans** – the appropriateness of keeping the generation and storage investment fixed as per the ‘no network development’ counterfactual case when determining the level of competition and hence competition benefits with and without the CDP. Our comments can be found at section 2.5.

**Competition benefits due to demand response** – the appropriateness of including this type of competition benefits given that the calculation of this carries significant uncertainty and high computational burden and is influenced by the selection of generation development plans noted above. Our comments can be found at section 2.6.

**Applicability to the ISP framework** – the appropriateness of the proposed rationalisations to make the calculation of competition benefits in an ISP tractable, including selecting the circumstances where the calculation of competition benefits could materially affect the outcome of the CDP assessment, and choosing the time horizon and scenarios to model in these circumstances. Our comments can be found at section 2.7.

<sup>11</sup> Analysis of data published here: [www.transgrid.com.au/projects-innovation/humelink#Resources](http://www.transgrid.com.au/projects-innovation/humelink#Resources)  
 The spike in benefits in year 2038 (FY2037-38) is apparent in all scenarios and coincides with a spike in other benefit categories in this same year including ‘Avoided unrelated TNSP expenditure’, ‘Avoided fuel consumption from generation dispatch’, ‘Avoided voluntary load curtailment’ and ‘Avoided costs for non RIT-T proponent parties’.

## 2.4 Strategic bidding

The proposed approach makes assumptions around which generation portfolios are likely to engage in strategic bidding and then models their behaviour with and without a “candidate ISP development path”.

Modelling of bidding behaviours is inherently uncertain and subjective. For example, selection of the four generators is based on a 2019 Frontier Economics report on the impact of the Liddell closure<sup>12</sup>. The Frontier analysis was completed prior to the NSW Government making its Roadmap commitment of 12 GW of renewable generation and 2GW of firming capacity by 2030.

There is also no alternate approach presented that would allow stakeholders to compare and contrast the proposal. Modelling could be complemented by further analysis of the technical opportunities to exercise market power with and without any development path. We draw attention to analysis of Pivotal Generators undertaken as part of the ACCC Retail Electricity Pricing Inquiry. The Panel is of the view that such analysis would be an appropriate, complimentary approach that would allow for a ‘top down’ contrast against the ‘bottom up’ approach afforded by the EY methodology. Such an approach is expected to demonstrate that the analysis of market power is much more complex than the simplifying assumptions in the proposed methodology and that some market power is likely to exist after the completion of the transmission project.

The proposed AEMO methodology makes numerous simplifying assumptions regarding which generators are likely to exercise market power before and after the ISP project. There is no attempt to test these assumptions against actual bidding behaviour in the market. In particular, the methodology assumes that after the augmentation, all generators bid based on their SRMC and no generators exercise market power. This assumption is extremely unrealistic and ignores observable behaviour in the wholesale market.

All coal generators are assumed to have no market power after the augmentation and change their behaviour to bid based on SRMC, but no evidence is provided to demonstrate why that will be the case, especially if most of the new entry generation is wind or solar and coal generation is still required to meet demand at certain times of the day.

It is highly likely that some hydro and gas generators or storage units will also have the ability and incentive to bid above SRMC prices at certain times after the transmission project is completed. This is particularly likely to be the case for HumeLink given the size of the relevant

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<sup>12</sup> Frontier Economics “Modelling of Liddell Power Station Closure” December 2019 <https://www.energy.gov.au/sites/default/files/Frontier%20Economics%20Modelling%20of%20LiddeII%20Power%20Station%20Closure.pdf>

units and their common ownership. Indeed, HumeLink could *increase* the market power of certain participants and their ability to bid strategically. The methodology proposed by EY and AEMO ignores these issues on the basis that it is too difficult to model the market power and bidding behaviour of hydro and gas generators and storage providers.

## **2.5 Selection of Generation Development Plans**

The methodology proposed by EY uses a misleading comparison between generation development paths that is likely to overstate or even double-count benefits.

In the counterfactual case without the transmission project, EY assumes that there is a overbuild of generation to meet demand instead of the transmission project. However, in the development path with the transmission project EY still includes all of that overbuilt generation *in addition to* the transmission project.

This is inconsistent with the approach taken to development paths and benefit assessment in the remainder of the ISP. The overbuild of generation would not be efficient and would not be built if the market knew the transmission project was being built. This approach will inevitably overstate competition *benefits* by assuming that there is also an unrealistic oversupply of generation that obviously results in a reduction in market power.

As a minimum, AEMO should change this part of the methodology to be consistent with the remainder of the assumptions in the ISP and remove the generation overbuild in the development path with the transmission project.

## **2.6 Competition benefits due to price elasticity of demand (demand response)**

### **2.6.1 What AEMO propose**

The proposition put by EY is that the increase in competitive bidding that results from the network augmentation leads to lower prices than would have been the case without the augmentation. These lower prices are sustained in the long term and results in increased demand by all classes of consumers producing a “demand response” benefit.

EY state<sup>13</sup>:

*“... if the demand is highly responsive to the price changes ... the competition benefits due to demand response is higher and vice versa”*

The use of the term ‘demand response’ in the historic context of a 2004 paper by Frontier Economics - as opposed to the contemporary use of the term by consumers as referring to more

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<sup>13</sup> EY 3.2.4 page 15

real-time actions from consumers in response to price or other signals - was a mistake and has hindered engagement.

EY surveyed the limited data on demand elasticities and made what they considered 'conservative' assumptions to lessen the size of any benefit and then adjusted the elasticities to adjust from retail prices to wholesale prices because the latter are the basis for competition benefits eg if the wholesale price is half the retail price then elasticities would be halved.

AEMO propose to adopt an elasticity of 0.05 as proposed by EY.

### **2.6.2 Panel comments**

We do not support inclusion of this category of benefits in the ISP. We do agree with AEMO's comment (p. 12):

*"...the calculation of this carries significant uncertainty and high computational burden and is influenced by the selection of generation development plans noted above."*

We do not agree with the proposition implicit in the EY approach that 'more modelling' equates with 'better modelling' or that 'if only we run another simulation, we will get a better answer'. We look to the fundamentals, which show that the modelling is based on unproven assumptions that mean it cannot be relied on as discussed below:

- The empirical data on elasticities is very limited at best and we are not given the empirical basis for the elasticities that will be used. Applying a so-called 'conservative' elasticity does not make the modelling results less uncertain and hence their inclusion more justifiable.
- These benefits are based on assumptions of the elasticity of demand to electricity prices. EY notes that 'elasticity of demand values are generally estimated relative to residential or retail electricity price. EY also notes that '*[c]ompetition benefits modelling is applied at the wholesale price level whereas elasticity of demand is relative to retail electricity price' so a conversion factor must be applied*'. There are several major limitations in this approach and the underlying retail and wholesale price estimates:
  - No evidence is provided that the very limited historical elasticities are a good guide to elasticities for the period to 2050 when there will be fundamental changes in the electricity market. For example, it assumes the wholesale price will remain the same proportion of the delivered retail electricity price over that period, despite material changes in those proportions over recent years and the likelihood of even greater changes in the next 10 years. The forecasts in the ISP and the NSW Roadmap amongst many others, suggest that expansion of renewable generation will drive a fall in wholesale prices as a percentage of the delivered price as other components such as network costs and system security services increase in importance.

- Estimates of future retail prices are extremely difficult to calculate, especially over the 10-15 year period used for these estimates. The ISP's estimates of retail prices rely on the approach used by the AEMC for its price trends reports. However, the AEMC price trends report only estimates retail prices for the next 2 years and is also based on a large number of simplifying assumptions. Any expected falls in retail prices due to transmission project would likely be swamped by the potential for an increase in network charges if interest rates increased from their record low levels.
- The modelling assumes retailers will pass on the full predicted price reductions. No empirical evidence is provided on this assumption. Recent history of how retail prices have changed in response to wholesale price reductions shows limitations of this assumption.
- The assumption that C&I customers will respond to forecast lower prices fails to understand C&I customer behaviour is not supported by evidence or by Panel members' extensive experience in this area:
  - Most C&I customers' electricity consumption is set by their technology and its asset life; once they have invested in their production facility a fall in prices is taken as an increase in margin, not the opportunity to expand consumption
  - When these consumers consider whether to replace or expand their technology/production assets, electricity price is just one factor that varies in importance depending on the business. A statement that 'the price of electricity is going to fall because an ISP investment will usher in SRMC pricing that will slightly lower the power price' would be almost irrelevant in their investment decision. Unless there is a retailer willing to commit to a long term hedge for the life of the next asset, it is very unlikely to result in a C&I customer expanding production and increasing electricity consumption
- The graph above that shows incidence over time of demand response benefits in TransGrid's PACR has most of the benefits occurring from 2036 with huge benefits in 2038. TransGrid then applies the same low discount rate to these benefits as is applied to other costs and benefits, which is inconsistent with the high level of uncertainty as to whether those benefits will arise. We do not think any certainty (even so-called 'conservative' assumptions) can be given to these claimed benefits.

The Panel is of the view that this category of benefits warrants an even more conservative approach: exclude this class of benefits or set the price elasticity of demand for this class of benefits at zero until a more defensible approach has been subject to the usual scrutiny.

## 2.7 Applicability to the ISP framework

The EY approach was developed for a RIT-T. It is not clear to us that it will scale effectively to the ISP and the Candidate Development Paths being considered as opposed to individual projects like in a RIT-T.

The Panel agrees with the underlying premise that strategic portfolio concentration will reduce over time and that this will be, in part, due to some of the ISP Development Path investments. However, while it is possible to accept that increasing competition (or, more accurately, reducing the ability to engage in strategic bidding) is an outcome of more transmission capacity, allocating benefits to specific projects or development paths does not appear to be supported by a robust methodology.

The Panel also has significant concerns with the time horizon assumed for calculating competition benefits. AEMO's proposed methodology assumes that competition benefits will continue to exist for 10 years from commissioning of the transmission project. This is based on an assumption that generators with market power immediately before the transmission project would have retained the same level of market power for 10 years if the transmission project did not occur.

AEMO's approach is an improvement on the approach adopted by TransGrid in the HumeLink PACR, which appears to have assumed competition benefits will continue for the entire 20 year modelling period. However, we consider that even a 10 year period is highly unrealistic and likely to overstate the magnitude of any competition benefits.

In reality, many factors are likely to erode generators' market power and their ability to engage in strategic bidding much sooner. Persistent exercise of market power is likely to result in further regulatory reforms, as has already been seen in reforms like the 'bidding in good faith' and '5 minute settlement' rule changes by the AEMC and the Federal Government's 'big stick' legislation. A large amount of new generation is also expected to enter the market over the next few years as the NEM decarbonises and decentralises. This is expected to erode the market power of existing generators as coal generators, who previously had market power, exit the market sooner than planned.

In the context of assessing the net benefits of an individual project under the RIT-T or the ISP feedback loop or TOOT test, we also think it is problematic to assign the full amount of competition benefits to a single transmission project for a lengthy period of time. If that specific transmission project had not proceeded, it is reasonably likely that another transmission project would proceed in the near future and have a similar effect on market power. For example, it seems extremely unrealistic for AEMO, EY and TransGrid to assume that if HumeLink did not proceed, all existing NSW coal generators would retain their current levels of market power for

10+ years rather than having it eroded by another transmission project such as future stages of the QNI upgrade or new Renewable Energy Zones.

A shorter time horizon will also help address the increasing uncertainty of the benefits later in the modelling period due to the issues discussed above.

If AEMO does include competition benefits, we recommend applying a shorter time horizon of no more than 10 years from the date of the analysis – irrespective of the proposed commissioning date of the projects in question – or 5, not 10 years, post commissioning.

A higher discount rate for this class of benefits – such as the 10% ISP sensitivity - would be another way to recognise that these benefits are less certain than other benefits. However, based on AEMO's approach to discount rates in the Final IASR we assume that AEMO would prefer not to apply different discount rates to different classes of benefits.