INFORMATION

Improving access to Western Power's network

Modelling the impacts of constrained network access – EY Report

The Public Utilities Office has published the modelling report prepared by Ernst & Young (EY) on the impacts of constrained network access.

EY's Report includes updated results to what was presented in the Public Utilities Office's Consultation Paper released on 9 August 2018 on the proposed approach to implementing constrained access.

Background

Following an industry forum on 3 August 2018, the Public Utilities Office released a Consultation Paper on the proposed approach to implement constrained access on 9 August 2018. The initial findings of the modelling results presented in that paper are shown in Table 1 below.

Table 1 – Relative outcomes in the Fully Constrained Access and Unconstrained Access cases, compared to the Partially Constrained Access case, Base scenario ($ million, NPV 60 years), Initial results

	Total market payments	Network costs	Net impact	Total revenue for existing generators	Total net revenue for existing generators
Fully constrained	-$288	No change	-$288	-$289	-$194
Unconstrained	-$709	+$700	-$9	-$654	-$508

EY's Report published on 1 October 2018 has updated these results, which are reproduced in Table 2 below.

Table 2 – Relative outcomes in the Fully Constrained Access and Unconstrained Access cases, compared to the Partially Constrained Access case, Base scenario ($ million, NPV 60 years), Final results

	Total market payments	Network costs	Net impact	Total revenue for existing generators	Total net revenue for existing generators
Fully constrained	-$800	No change	-$800	-$500	-$400
Unconstrained	-$1,000	+$700	-$300	-$650	-$500

What are the reasons for this difference?

During the period between the release of the 9 August 2018 Consultation Paper and the finalisation of EY's Report, the Public Utilities Office consulted with individual generators on their specific modelling results and with Western Power.

Based on feedback received from stakeholders during these discussions, the modelling was refined, including to take into account a fault level limitation at Kwinana that places a limit on the amount of new gas capacity that can be connected at Kwinana. This fault level limitation was published in Western Power's 2017 Annual Planning Report and is described in EY's Report.

The combined effect of the Kwinana fault level limitation and the existing transmission network constraints that were identified from the initial modelling outcomes resulted in the final capacity mix forecast in each scenario and case (except the Unconstrained case) being limited to certain locations and technologies, as described in EY's Report.

This has resulted in a larger divergence in the forecast capacity mix between the Fully Constrained and Partially Constrained cases across the scenarios than was initially forecast by EY. The main driver of the difference is the effect that network constraints can have on the commercial viability of new entrant capacity, particularly where the locations for new entry are limited.

The resulting divergence in the timing, location, and quantity of capacity between the Fully Constrained and Partially Constrained cases in turn drives differences in wholesale market prices and total market payments.

Findings

In the Base scenario, consumers are forecast to be approximately $800 million better off under a Fully Constrained network access model than they would be under a Partially Constrained model. This does not include the cost of any transitional assistance to generators with existing firm access rights.

The primary driver for these savings are lower total market payments in the Fully Constrained case compared to the Partially Constrained case. This in turn is driven by the greater amount of generation capacity that can be economically installed in the Fully Constrained case, relative to the Partially Constrained case.

This is because the Fully Constrained case provides a more effective way to address network constraint limitations, several of which play a substantial role in the allocation of capacity credits for new and existing generation capacity. Flexibility in how capacity credits are allocated to new and existing generation capacity provides more opportunity for different types of new entrant generation technologies to be profitable at more locations on the network.

In contrast, the commercial viability of new entrant generation capacity in the Partially Constrained case is limited to certain technologies at fewer locations in the network, because the combination of firm access rights and the effect of network constraints limits the ability of new entrants to receive capacity credits.

For most existing generators, the negative net revenue impact is primarily a consequence of lower wholesale market prices and being displaced in the merit order as a result of forecast new entry rather than being constrained off as a result of network constraints. For some generators, specifically existing firm access generators, network constraints can have a direct negative effect on net revenues where it impacts on the allocation of capacity credits.

Conclusion

Addressing the existing inequity where some generators have the right to generate up their maximum output at any time will free up existing network capacity and make it available to all electricity producers equally, making better use of existing network capacity and ensuring least cost delivery of electricity to consumers.

The updated modelling results clearly demonstrates the case for adopting a network access model where the dispatch of all generators is subject to network constraints.

A Fully Constrained network access model provides a more effective way to address network constraint limitations and, as a result, more opportunities for new entrant generation capacity to enter and compete in the Wholesale Electricity Market.

A Partially Constrained network access environment presents a barrier to new market entry because it is less effective at addressing network constraint limitations and, as a result, presents fewer commercially viable opportunities for new entrant capacity.

Any future outlook where barriers to entry restrict the ability for new entrants to enter and compete in the Wholesale Electricity Market makes it more difficult to meet the objectives of delivering least cost electricity to consumers. This difficulty will be further amplified as more new entrant capacity is needed or incentivised, for example, in circumstances where large amounts of existing generation capacity is retired, or where existing systems place a limit on the amount of new generation capacity that can be connected to the Western Power network such as the Generator Interim Access solution.

Next steps

The Public Utilities Office has extended the date for submissions to its Consultation Paper to allow stakeholders additional time to consider the modelling results and provide informed submissions.

Submissions are now requested by 12 October 2018, and can be emailed to PUOSubmissions@treasury.wa.gov.au

Generators that wish to discuss their individual modelling results should contact the Project Lead:

Mr Ashwin Raj
Manager, Energy Networks
Public Utilities Office
Phone: (08) 6551 1047
Email: ashwin.raj@treasury.wa.gov.au

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