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AEMO 1st Interim Report on OFA

Supplementary submission

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1.0 Executive Summary

Stanwell's initial submission to the AEMO 1st Interim report was submitted in September 2014. This supplementary submission provides detail on some additional issues with OFA relevant to AEMO.

OFA does not resolve the original stated concerns

The OFA model was designed to address 7 concerns regarding the interface between transmission and generation. None of these 7 concerns are resolved by OFA. The three relevant to AEMO are:

Problem identified by AEMC	**OFA will not solve this problem**
1. Lack of dispatch certainty during congestion	Firm access is subject to de-rating, uncertain quality of provision, minimal TNSP incentive arrangements and a non enforceable planning obligation.
2. Disorderly bidding	Incentives will remain. There will be a strong incentive for firm participants to bid in a disorderly way in the presence of congestion if their dispatch is below their access level.
3. Difficulties managing 'price risk' between regions	*Dispatch* and *Access* are explicitly decoupled by OFA. OFA does not provide certainty of dispatch or access, particularly given that many unforeseen pricing events occur when the system is not in "normal" condition.

OFA is not technology neutral

OFA is not technology neutral and incentivises new non-scheduled generation over new scheduled generation. Non-scheduled generators obtain free firm access which is more "firm" than that purchased by scheduled generation.

OFA creates counter-intuitive values flows and possible barriers to exit

Counter-intuitive value flows could occur if an intermittent (or peaking) generator were to be available with non firm access under lightly constrained network conditions and pricing (local and node) below its economic dispatch level. Despite not wanting to be dispatched, such a generator would have an entitlement and, as a result, other non firm generators dispatching above their entitlement would need to pay access settlements to the available intermittent generator. This same logic also creates a barrier to exit.

OFA may reduce market transparency

OFA may also reduce market transparency as so many variables are necessary for a generator to determine its real time access. Many of these variables are not currently available in real time and it may not be possible for some of the variables to be published in a timely manner. This would be a detriment to market transparency and the efficiency of the market.

2.0 OFA does not address the stated concerns

The TFR states that the OFA model aims to address seven (7) concerns regarding the interface between transmission and generation. Stanwell considers that the OFA proposal does not adequately address any of these concerns.

Of particular interest to AEMO are concerns 1, 2 and 7.

Concern 1: Lack of dispatch certainty during congestion

AEMC Concern 1: The lack of certainty of dispatch faced by generators when there is congestion, compounded by the inability of generators to obtain firm access, even where they fund augmentations of the transmission network;

Dispatch is the act of generating electricity in response to AEMO dispatch instructions. Access is the ability of a generator to physically transport electricity on the transmission network[1].

OFA has no effect on the certainty of dispatch for generators whether there is congestion or not. In fact, OFA explicitly decouples dispatch and access. *Dispatch* processes remain subject to both congestion and market behaviour; however market behaviour may be influenced by the proposed access arrangements. *Access* remains subject to congestion through the pro-rata decreases in access for generators holding the same type of access (Firm or Non-Firm) when the transmission system is operating below the desired level of transfer.

Regarding the current (in)ability of generators to obtain preferred access even after funding network augmentation there are many caveats:

1. Under the current arrangements, generators could arguably have dedicated assets commissioned in order to obtain firm access, however the cost is likely to be prohibitive as would be the case under OFA
2. The firm access gained by a generator under OFA is not linked to a specific network augmentation, but is generic access to the Transmission system as a whole – albeit referenced to a specific source and destination. If a generator funds a network augmentation then all owners of firm access that utilises that augmentation will benefit equally (on a pro-rata basis), and all generators with non firm access that utilises that augmentation will also benefit equally (on a pro-rata basis), albeit less than firm generators.
3. Unlike most schemes investigated, Firm Access is “firm not fixed”. It is still subject to de-rating, can be diluted by subsequent Firm Access requests and appears likely to receive minimal compensation through Transmission Network Service Provider (TNSP) incentive arrangements where financial loss occurs due to access falling short of contracted levels.
4. The payment of the agreed charge for the provision of Firm Access does not require the construction or commissioning of the notional augmentation, only a requirement for the TNSP to ‘plan’ to provide the contracted level of access.

As examined on page 6 under OFA it seems likely that generators will not be able to reliably calculate their access amount. This would increase the uncertainty faced by generators in excess of the current dispatch risk.

Concern 2: Disorderly bidding

AEMC Concern 2: The resulting incentives for generators to offer electricity in a non-cost reflective manner in the presence of congestion;

[1] This is again distinct from an Access *right,* which is the right to physically transport electricity or be compensated for not doing so.

The TFR final report claims that the introduction of OFA would *"reduce the incentives for disorderly bidding"*[2] and refers to the FTR and ROAM reports for the extent of the resulting "efficiency benefit". Stanwell has consistently expressed its concern on excessive regulator focus on "disorderly bidding" as being an ineffective use of regulator and participant resources. The analysis contained in the consultant reports supports this position.

The consultant reports state that over the three historical years analysed: "*the cost of disorderly bidding in terms of productive efficiency has not been material"*[3]. ROAM estimate the cost as between $3m and $15m which is a small fraction of the resource cost of the NEM, however removing the effect of an observed n-3 event[4] reduces this range to $3m to $7.5m. The forecast improvement in the cost of disorderly bidding under OFA of $8.8m is heavily weighted to the last few years of the modelling which are the most likely to be affected by divergence between reality and assumptions.

The incentives for generators to offer electricity in a non-cost reflective manner (also known as "disorderly bidding") would remain in place under OFA. ROAM acknowledge that their base analysis does not account for the changed incentives for disorderly bidding[5] but conclude that the cost of disorderly bidding is generally small compared to the cost of an outage[6].

Stanwell considers that many of the root causes of "disorderly bidding" remain unaffected by OFA. For example under OFA, a generator that is dispatched below its access level during congestion remains incentivised to bid in a manner that will set the local price as low as possible because the firm access revenue will exceed the opportunity cost of forgone dispatch.

Similarly, there is an implicit assumption that the procurement of firm access will reflect economically efficient dispatch however this is unlikely. During congestion under OFA, low cost generators with no access, partial access or scaled firm access may be incentivised to bid in a way to reduce output in favour of high cost generators who have firm access. This has a detrimental affect on economic efficiency.

Even accepting the results of the ROAM modelling at face value highlights the ineffectiveness of the OFA proposal. The modelling shows that removing the majority of disorderly bidding across the NEM will result in a cost reduction of less than $10m per year, but shows no analysis of the cost of firm access which has "created" this "efficiency". Stanwell considers it highly likely that the cost would be orders of magnitude greater than the benefit.

Concern 7: Difficulties managing 'price risk' between regions

AEMC Concern 7: the difficulty that market participants have in managing the risk of price differences between different regions of the NEM, with a resulting negative impact on the level of contracting between generators and retailers in different regions.

This is similar to concern 1 regarding dispatch and access which is discussed on page 4. OFA does not provide certainty of dispatch or access, particularly given that many unforeseen pricing events occur when the system is not in "normal" condition.

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[2] AEMC, *Transmission Frameworks Review Final Report*, 11 April 2013, page 110

[3] AEMC, *Transmission Frameworks Review Final Report*, 11 April 2013, page 111

[4] An n-3 event represents a significant departure from system normal conditions. Such events are not captured under the majority of OFA modelling and so its inclusion in this one aspect creates inconsistency. Under such a derating it is likely that firm access holders would have had their rights significantly scaled back, possibly increasing incentives for disorderly bidding, however there appears to have been no modelling of this aspect of the event.

[5] ROAM page 29 "There may be new types of disorderly bidding that may replace the inefficiencies which may occur under the existing Package 1 framework. These potential events have not been reported on in this assessment."

[6] ROAM page 53 Table 6.2 shows the cost of 4 notional outages and the cost of disorderly bidding under those outages. In 3 of the 4 scenarios the cost of disorderly bidding is a small fraction of the outage cost. It is unclear how in the fourth case the cost of disorderly bidding under the outage actually exceeds the cost of the outage.

We note the NERA report which states that, despite FTRs being fully firm (or "fixed" in the lexicon of OFA), in relation to augmentations between pricing regions:

> "*FTRs have not been found to incentivize new merchant transmission investment…*"[7] and
>
> *"The return function on FTRs and ARRs remain uncertain for merchant investors, and further these potential investors are concerned about "free-riding" issues, including the fact that new investment in transmission could eliminate existing congestion and largely nullify the value of FTRs and ARRs in the near term."*[8]

3.0 OFA is not technology neutral

OFA risks incentivising new non-scheduled generator investment ahead of new scheduled generator investment, thereby reducing market transparency.

This is because the OFA model applies only to scheduled and semi scheduled generators (and interconnectors) as these are the only participant types that have variables in constraint equations that can be changed. Accordingly non-scheduled generators obtain costless access which is more firm than that which is able to be purchased by scheduled and semi-scheduled generators.

4.0 OFA creates counter-intuitive value flows and possible barriers to exit

Due to the definitions used in calculating flowgate entitlements, a number of counter-intuitive value flows may be produced, and the existence of a firm access agreement may provide a barrier to exit for existing plant. There appears to be no alternative definitions which would retain value for the purchaser of firm access but significantly reduce or remove these concerns.

A barrier to exit is created by the reliance on generator capacity as one input to a firm generator's flowgate entitlement. As a generator procuring firm access will be required to pay the firm access charge regardless of its capacity, it will be incentivised to retain its registered capacity at least equal to its firm access amount for the duration of the contracting in order to receive an offsetting cash flow in the event of congestion. A similar concern has been raised by the University of NSW in relation to transitional access.

One instance of counter-intuitive value flows would occur if an intermittent (or peaking) generator were to be available with non firm access under lightly constrained network conditions and pricing (local and node) below it's economic dispatch level. Despite not wanting to be dispatched, such a generator would have an entitlement and, as a result, other non firm generators dispatching above their entitlement would need to pay access settlements to the available intermittent generator.

5.0 OFA may reduce market transparency

One of the key requirements that does not appear to have been addressed is the requirement that generators be able to determine what their access entitlement is in real time and is likely to be in the short term.

Determining of access entitlements requires knowledge of the

- flowgate actual enablement,
- flowgate target enablement,
- generator capacity for all units affected by the flowgate[9],
- generator availability for all units affected by the flowgate, and

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[7] NERA, *Review of Financial Transmission Rights and Comparison with the Proposed OFA Model*, 12 March 2013, page 9

[8] NERA, *Review of Financial Transmission Rights and Comparison with the Proposed OFA Model*, 12 March 2013, page 8

[9] As expressed in the TFR, *"…entitlement would be based on the lesser of its agreed access level and its rated generating capacity, and would also depend on the prevailing network conditions"*.
AEMC, Transmission Frameworks Review Final Report, 11 April 2013, page 30

- flowgate participation factors.

Of all these factors, generators only have reliable access to generator capacity information[10]. In order for OFA to maintain the current level of market transparency, all the other factors need to be available to the generator in real time.

Currently generators do not have sufficient information to reliably determine the flowgate actual enablement, although for some constraints this is expressed explicitly. Most constraints include terms which are opaque to market participants such as line ratings, even when binding.

Flowgate target enablement will require publication of an additional dataset in order for participants to determine their access level. Where flowgate actual enablement is above target enablement, the difference is required to inform participants on the availability of non firm access. Where flowgate actual enablement falls below target enablement, the difference is required to inform participants of the extent of firm access scaling which is occurring.

Generator availability is currently published by generating unit in arrears and by region in advance. Under OFA generators would require access to this information at the unit level in real time as well as in advance through pre-dispatch in order to calculate how non-firm access is allocated, if it is available.

Flowgate participation factors are assumed to be derived directly from the published constraint equations, however, these equations can change without notice, including at the time of dispatch[11]. In addition, flowgate participation factors can change in response to TNSP or DNSP network changes, and current procedures do not provide market participants with an adequate understanding of either the real time or forecast effect of these changes on participation factors. Such changes could have a significant effect on how much firm access a generator has to the regional reference price, creating hedging risk for firm generators.

[10] It is relatively unusual for a generating unit to change its rated generating capacity and this information is published by AEMO.

[11] On 22 May 2014 the factors in the constraint N>>N-MPWW_ONE_9 were altered by AEMO in real time in the response to an internal performance appraisal.

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