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Dear David,

Thank you for the opportunity to respond to the Optional Firm Access (OFA): AEMO Draft Report. We note this report contains AEMO's draft decision on whether to proceed with a Rule change for access settlement. The report is also an update on AEMO's work on the modelling of access settlements and it contains a consideration of the different implementation options for access settlements.

**Stanwell supports AEMO's draft decision**

Stanwell supports AEMO's draft decision to not proceed with a Rule change for the stand-alone implementation of access settlement (known as 'stage one'). We agree with AEMO's analysis that market volatility and inefficient dispatch has been primarily caused by market incentives outside the scope of access settlements to solve. We agree that access settlement will either not change participant behaviour or that it may alter participant behaviour but with an uncertain effect as to the efficiency of the outcome[1].

We also agree with AEMO that the benefits of stage one will exceed its costs and that it would be complex for AEMO to develop stage one independently of the full OFA. Stanwell supports AEMO reporting back to the Energy Council ahead of the target timeframe with a final report in early 2015.

**Chapter 2: AEMO's role and direction**

Stanwell supports AEMO's continued involvement in providing technical assistance to the Australian Energy Market Commission (AEMC) work on OFA. In particular, Stanwell agrees with AEMO that the AEMC project will benefit from:

- Operation of AEMO's detailed access settlement model on historical events
- Further study and specification of access settlement logic in various market pricing conditions
- AEMO's technical input into related parts of the reform

[1] AEMO Draft report, page 19.

AEMO's continued involvement will identify and quantify other aspects of OFA which to date have only been approximated or not considered. This includes AEMO modelling the "bid to bind" incentive on generators with excess firm access[2]. Stanwell suggests that the "headroom bidding" incentive for access short generators should also be modelled by AEMO. It is likely that new action-response cycles from participants will evolve and AEMO is best placed to model the efficiency of these behaviours.

AEMO has acknowledged some limitations of its access settlement analysis including the requirements for stable bidding and minimal withdrawal of constrained on generation. Stanwell encourages AEMO to broaden its analysis of access settlement to include historical events which contain

- 5/30 rebidding
- Last minute rebids
- Withdrawal of constrained on generation
- Changes in non-scheduled generation[3]
- Changes in equipment ratings or network configuration[4]
- Changes in constraint formulation[5]
- Intermittently binding constraints
- Portfolio bidding

Given the complexity of access settlements, Stanwell is concerned that the AEMC are engaging third party modellers to estimate the dispatch efficiency gain under OFA using a "simplified representation of access settlements". AEMO's modelling to date has been of significant value because it has attempted to use appropriately complex modelling. In addition, this "simplified representation of access settlements" exercise has already been performed by ROAM Consulting, Frontier Consulting and IES. These groups obtained remarkably consistent results showing minimal benefit from removing "disorderly bidding". This is particularly noteworthy given the inherent level of estimation error.

While Stanwell supports AEMO's technical assistance with the analysis of OFA, Stanwell does not support AEMO acting outside its remit as a market operator[6]. The draft report contains numerous examples of AEMO making statements which go beyond its area of expertise as market operator. This includes references to "more efficient integration of transmission and generation", inter-regional competition and the market risk management of generators. These statements appear on page 9 of the draft report.

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[2] AEMO Draft report, page 27

[3] If a constraint is binding and non scheduled generation (which would be behind the constraint if scheduled) changes output, the apparent change will be to the flowgate volume.

[4] For example on 15 January 2015 AEMO switched in an additional SVC in Northern NSW which affected the binding QNI constraint.

[5] For example the previously identified 22 May 2014 event relating to N>>N-MPWW_ONE_9

[6] We acknowledge that AEMO also perform TNSP functions, however our understanding is that AEMO are undertaking this work as the market operator.

**Chapter 4: Implementation staging**
As stated earlier, Stanwell does not support the early introduction of access settlements. In addition, Stanwell does not support OFA being implemented only in some regions, regardless of whether the other regions are expected to implement OFA in the future. We consider that the difficulties being faced by the AEMC in implementing OFA in Tasmania confirm that the scheme is not robust to future market conditions.

**Chapter 5: Assessing access settlement**
As stated earlier, Stanwell supports AEMO's continued involvement in modelling access settlement. AEMO's technical expertise is also critical in modelling the impact of the changed behaviours expected by the AEMC.

Stanwell does not agree that AEMO's modelling cannot be used to assess economic benefits over time. For example, if AEMO's modelling of access settlements shows no benefits from the examples studied, there is no reason to suggest that benefits will materialise in the future.

**Chapter 6: Benefits**
Table 2 shows AEMO's opinion on what potential reforms could solve certain dispatch scenarios. This analysis does not include an indication on the size of the problems and the cost of the proposed reforms.

Table 2 indicates that AEMO believes that OFA will solve only one of the identified problems: the incentive for flowgate support generators to economically withhold volume when a constraint is binding. This "solution" will be in the form of incentives for TNSPs to enter into network support contracts with flowgate generators to ensure that flowgate volumes are maximised. Stanwell is sceptical as to whether OFA will have any more effect than the current arrangements. Further, even if effective, implementing "*a fundamental change to the market*"[7] does not seem a proportional response to size of the identified "problem". Stanwell is disappointed that AEMO did not acknowledge that simple improvements to the current network support arrangements may also resolve the identified problem. Instead AEMO only identified OFA as a solution.

**Chapter 7: Settlement Residue Auction (SRA)**
In our response to AEMO's first interim report, Stanwell noted that we support neither the cancellation of existing SRA units, nor the cessation of forward auctions prior to the rule change. In the draft report, we did not find any conclusion on the retirement of SRA units. Participants buy SRA units for hedging and speculative purposes and cancelling these units or shortening the forward contracting period may have adverse financial consequences.

Stanwell notes the discussion on negative settlement residues and how OFA is expected to reduce the risk of negative settlement residues. This is alleged to be a benefit of OFA and relates to the AEMC's concern 5 "*the difficulty that market*

[7] AEMC *Transmission Frameworks Review* Final Report, 11 April 2013, page i

*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."*

SRA units are defined as being non firm and are priced accordingly. SRAs are non firm in part because of the fully co-optimised nature of constraints which, by definition, include interconnector terms. This means that interconnectors are able to be de-rated and negative settlements are allowed to accumulate if there is net benefit to the market and therefore, customers. This was a conscious market design decision in order to benefit consumers overall.

If SRA non-firmness and negative residues is considered a problem, then the source of the problem - co-optimised constraints - could be studied. Stanwell has to date assumed that co-optimised constraints lead to better market efficiency and lower costs for customers than constraints without interconnector terms. The magnitude of this benefit could be studied compared to the cost of the non firmness of SRAs and the cost of OFA.

Stanwell undertakes both wholesale and retail transactions outside of Queensland, the location of our generators. We consider that SRA's are only one of a suite of available risk management tools and these tools are both appropriate and sufficient. Stanwell is disappointed that our repeated representations on the adequacy of current inter-regional risk management tools continue to be ignored in favour of views developed internally by the AEMC and AEMO.

**Chapter 8: Stakeholder feedback**

Thank you for providing this chapter which specifically addresses the comments participants provided in submissions. Although Stanwell does not agree with all of AEMO's responses to this feedback, Stanwell is pleased that AEMO has presented a transparent approach to considering this feedback.

Stanwell was surprised to read about a major change to the calculation of access settlement that the AEMC is considering - weighting the usage by price rather than time. Stanwell is disappointed that significant changes to the design of OFA continue to be considered only a few months before the final report is due to the COAG Energy Council. This highlights the complex nature of the reform which, if implemented, could have unforeseen, adverse consequences. In this case, Stanwell questions the changed bidding incentives that could arise from price weighting usage. It is difficult to draw firm conclusions without the specifics of the AEMC's proposal, however we note that price weighted usage is likely to be more volatile than time weighted usage and this will lead to greater complexity for participants. Further complexity adds to the ongoing costs of OFA to participants.

Thank you for providing an estimate of AEMO's cost to participate in the OFA project so far. AEMO states that the equivalent of 1.5 full time staff throughout 2014 have been involved in the project. AEMO describes this cost as "relatively small" however Stanwell believes this cost is high given that it is being funded

from within AEMOs standard budget. Although AEMO's involvement in the project has highlighted significant issues with the design, the cost of AEMO's involvement should alarm policy makers as to the hidden resource burden of ongoing market reviews.

**Appendix A: Access Settlement design refinements**

AEMO identified a number of issues with the AEMC's design including the treatment of loss factors, constraint violations, unusual settlement pricing conditions and 'five-thirty' problems.

While AEMO consider a number of the identified design issues to have been "resolved", we consider that many have merely been "addressed". Decisions on issues such as metering and auxiliary load, five-thirty, Market Price Floor scaling, flowgate price source and resettlement mean that while the approach is known, the distortions or risks remain or are unknown. Further, the expectation that administered pricing would "…*produce some anomalous outcomes that may require further design refinement*"[8] is of significant concern at this stage of the project.

The complexity involved in resolving these issues is further proof of the risk of unintended consequences from the OFA reform.

**Appendix B: Information requirements**

Stanwell is extremely concerned about AEMO's proposal to not publish access settlement information in pre-dispatch and 5 minute dispatch timeframes[9]. Without access settlement estimates, generators will not have adequate information in order to manage their positions. This will almost certainly lead to conservative behaviour which will act against the AEMC's goal to improve dispatch efficiency. For example, if a generator is not sure whether they are access long or short, they will probably generate at their access level.

Stanwell has not fully considered the implications of new data points such as sent-out generation and availability becoming public, however it will be essential for generators to determine their access position with a similar level of confidence as they can currently determine their energy position. If data privacy inhibits such ex-ante calculation it is likely to have a significant negative effect on market efficiency and risk profiles.

**Appendix C: Access Settlement implementation costs**

Stanwell notes AEMO's estimate of the cost of implementing access settlement to be between $900k and $2.4m. Stanwell has concerns with key aspects of the assumptions used in generating AEMO's cost estimate.

[8] AEMO Draft Report, page 34
[9] AEMO Draft Report, page 35

In particular, AEMO's estimate "includes the cost of converting this design into business requirements, but does not include any design or redesign of the model". This assumption seems most unlikely given the complexity of the reform and the continuing evolution of the AEMC's design. AEMO has already identified numerous market parameters that have required redesign as part of its modelling of access settlement as well as existing market features which are not yet incorporated. There is likely to be further design complications that will arise when access settlement is implemented. The redesign of these unknown market parameters will add to the cost of AEMO's estimate.

Stanwell also does not support AEMO netting off the benefit of not running the SRA auction. The SRA auction is completely funded by SRA participants and its cancellation is not a saving to AEMO and it should therefore not be netted off AEMO's estimate. As noted, SRA auctions are proposed to be replaced by the as-yet uncosted access auction(s) which, if treated consistently, should be added to AEMO's cost estimate.

We also note AEMO has specifically not included the cost of contract labour. Although it is difficult to assess the availability of internal labour for a future project, it seems prudent to include an allowance for contract labour. AEMO says "should contractors be required, this is likely to have a significant impact on the cost of the project due to the significantly higher cost of contract labour". Given the significant impact, AEMO should at least produce two cost estimates - one with contract labour and one without.

Although AEMO has put significant effort into scoping the costs for the project, it appears that the cost range provided in the draft report is likely to under estimate AEMO's likely cost.

**Appendix E: Access Settlement modelling runs**

We believe that the detailed modelling undertaken by AEMO has shown the extremely limited benefits of access settlement, and even in simple examples has highlighted a number of issues with the proposed model.

Through Stanwell's participation in the AEMC OFA Working Group, we have provided early feedback on the AEMO modelling results[10]. We note that while a number of improvements were made to the results published, there remain an unsettling number of values which do not appear correct. While many of these values do not appear to materially affect the outcomes, the existence of these errors raises concerns about what problems we *can't* easily identify. A detailed response to each example follows in Appendix A.

[10] Stanwell is pleased that AEMO has published these examples. We believe that the additional transparency has benefited both AEMO and participants.

Thank you for your consideration of Stanwell's response to AEMO's OFA Draft Report. If you would like to discuss any aspect of this submission, please contact me on 07 3228 4529.

Regards

**Luke Van Boeckel**
**Manager Regulatory Strategy**
**Energy Trading and Commercial Strategy**

# Appendix A

Stanwell have reviewed the access settlement examples provided by AEMO in Appendix E of the Draft report and believe that there are a number of significant findings which have not been elucidated.

## *AEMO Example 1: Tarong transformer Radial constraint.*

The simplest access settlement scenario presented by AEMO exhibits a number of complexities which call into question whether access settlement will provide improvements to dispatch efficiency.

**"Dispatch inefficiency" actually reflects participants displayed "value" of dispatch**

In the example provided, Roma Power station has bid it's capacity available at the Market Price Floor (MPF) while Condamine Power Station has bid its capacity available *near* the MPF at -$932.10/MWh.

There is nothing to say that the bids were not cost reflective (although it is likely), and the resulting "dispatch inefficiency" reflects the different price bands rather than the traditional tie-breaker circumstance under "disorderly bidding". Accordingly the "inefficiency" is actually an efficient market outcome – Condamine valued dispatch less than Roma and was backed off accordingly.

Had both sites bid MPF, which usually characterises "disorderly bidding" in response to network constraints, Condamine would have been able to dispatch more – although not at full load – and the "inefficiency" would be lower than presented in the example.

**Roma Power Station SRMC**

Significantly, the Roma Power Station SRMC has been adjusted in the example as it is listed in the NTNDP as being above the RRP of $84.00 and so SRMC bidding into a binding constraint could not be exhibited. It is critical to acknowledge that Roma Power station was actually operating in an "irrational" manner when only considering spot revenue – attempting to maximise output at a price which is below SRMC. The assumption that Roma would operate "rationally" with a revised SRMC and OFA/access settlements is therefore extremely weak.

While Roma's behaviour is likely rational when other considerations are included, those considerations do not form part of either the AEMO or AEMC/consultant modelling provided to date.

**No consideration is given to generator incentives.**
AEMO's analysis simply models dispatch and margins for observed and SRMC bidding behaviours, with and without Access Settlement. AEMO acknowledges that this does not necessarily represent optimal generator behaviour.

Even ignoring the two issues above, in the example presented, Roma – being access long – is incentivised to minimise the local price while the constraint binds, and accordingly could be expected to bid volume at or below the Condamine offer price[11]. Given Roma's dispatch at 41.16MW in table 7, 42MW would be sufficient to lower the local price to $19.67 and increase Roma's margin from ≈$650 to ≈$1050 for the half hour without changing dispatch outcomes by more than 1MW. Condamine's margin would decrease by a corresponding amount.

Condamine would then be incentivised to reduce output slightly to reinstate its margin – either by raising the local price or unbinding the constraint - at which point Roma would be incentivised to generate more, creating an iterative positioning process. Equilibrium would be reached when both parties were close to access neutral, with Roma dispatching in the order of 60MW. Such equilibrium is very similar to the result that would have occurred under current rules with both sites bidding at MPF and subject to a tie-breaker process – confirming that there is very little potential benefit from the introduction of Access Settlement.

**Dispatch efficiency will reflect access level, not cost**
While the example uses indicative transitional access allocation, alternative allocations will produce different results in terms of dispatch efficiency (but not market outcomes unless the constraint no longer binds).

For example if Roma held at least 64MW of firm access[12] it would be rational to minimise the local price up to full dispatch, thereby causing the "cheaper" Condamine site to back off equivalent to the observed outcome.

[11] We believe the CPSA offer price of $20.95/MWh indicated in the example is incorrect. For an SRMC of $18.77/MWh Sent out and an MLF of 0.9543 the at node offer should be $19.67/MWh.
[12] 64MW refers to Sent out volume. This would be fractionally non-firm at an availability of 33MW per unit with the presented auxiliary load and Marginal Loss Factors. Condamine Firm access is assumed to remain low enough to avoid firm access scaling.

## *AEMO Example 2: Latrobe Valley constraint.*

The second AEMO example displays a constraint with varying participation factors and multiple electrical paths to the regional reference node – providing a step up in complexity from the first example.

While there are a number of generators in the constraint, the majority were unavailable, offline, or inflexible[13]. The constraint in the example was binding very marginally[14] and the regional price was low, yet all applicable generators exhibited MPF bidding behaviour.

Unfortunately, the example provided contains material inconsistencies which render it's conclusions unusable without heavy qualification. In the SRMC bidding simulation, ALL dispatched units exhibit decreased output which leads to a lower flowgate volume despite none of the units being flowgate support generators.

While the example purports to exhibit a marginally improved dispatch efficiency this gain is primarily driven by the overall lower dispatch rather than an improvement in dispatch order. The value calculations are also significantly obscured by the modelling "noise" identified by AEMO, such as the Morwell units being 4 and 3MW away from target with zero ramp rates.

What the example does highlight is the potentially perverse value transfers occurring under Access Settlement, with the BDL1 and MOR3 units unaffected by congestion but receiving significant access payments while Yallourn becomes heavily incentivised to reduce it's offer of low priced generation due to the presence of BDL2 testing and competitor's firm access.

It is also unclear how the flowgate price has been determined in these examples. Stanwell understands that these examples should use time weighted averages, rather than the potential flowgate price weighted average approach being considered by the Commission.

- The $1025.47 FGP published in relation to table 10 implies that the constraint bound for all 6 dispatch intervals, but not at a consistent local price of -$1000. With all units bid at -$1000 it is unclear how this could occur.
- The $10.10 FGP published in relation to table 12 appears to imply that the constraint did not bind for all DIs, since the highest offer price of $14.19 (at node) more than $10.10 below the regional price of $28.58.

Stanwell would appreciate further detail as to the determination of the flowgate prices in this example.

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[13] AEMO refers to units as "testing" and having zero ramp rates. Stanwell has bundled these together as "inflexible" which we believe is consistent with AEMOs modelling approach.

[14] Total As Generated availability is 681MW, while the total as generated dispatch is over 678MW.

## *AEMO Example 3: cross-border impacts.*

While significantly more complex than either of the first two examples, this modelling is similar to example 1 where a low SRMC site has bid near but not at the MPF and been backed off accordingly. Were this single aspect of the backcast changed there would be a significant observed reduction in total generator cost without the need for access settlement.

It is not clear what the footnote "SRMCs chosen for demonstration purposes only" refers to. We suspect that this aspect of example 3 is also similar to example 1 – that is, a participant is observed to have been acting "irrationally" and is supposed to become "rational" in the presence of access settlements.

Stanwell has been unable to reconcile the Entitlement and DIC usage values presented in table 20.

We have been unable to determine how the flowgate prices are set. While we note that tables 14 and 15 combined imply a local price of -$1000, we are uncertain of how the individual prices are apportioned. There appears to be no such correlation for the flowgate prices in tables 19 and 20.

Other than noting that the modelled SRMC bidding behaviour results in a change in regional prices and hence another possible rebidding incentive, we have not found any material outcomes of example 3 that are not present in examples 1 and 2.