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Mr John Pierce
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Lodged on-line: www.aemc.gov.au

AEMC reference: EPR0039

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Dear Mr Pierce,

Optional Firm Access, Design and Testing – Submission to AEMC’s First Interim Report

AEMO welcomes the opportunity to respond to the AEMC’s OFA First Interim Report. Development of the OFA arrangements is a key policy initiative for the National Electricity Market (NEM), with wide reaching implications for market participants and customers over the long term.

As you are aware, AEMO is working closely with colleagues at the AEMC to develop aspects of the OFA model through our separate terms of reference relating to the OFA access settlement mechanism from the SCER. This submission has been developed separately to that work-stream, and seeks to address elements of the OFA model outside the scope of AEMO’s terms of reference. The submission presents AEMO’s response to the AEMC’s proposals from the perspective of our role as an energy market institution with in depth experience of the relevant issues.

AEMO has a number of statutory functions that relate to transmission planning, including its National Transmission Planner role and its Victorian transmission planning role. As such, the majority of this submission focusses on planning related issues, although where relevant we have sought to also raise other points for the attention of the Commission.

Optional Firm Access proposals

AEMO has long been a supporter of reforms to achieve the long term market benefits that will arise from adoption of some form of financial access rights, consistent with the objectives of the OFA proposals.

The OFA proposals have been developed by the AEMC over a significant period in response to long standing issues in the electricity market. AEMO shares the AEMC’s goal to establish transmission frameworks which promote efficient investment and operations in both the transmission and wholesale sectors for the benefit of customers over the long term.

Further, we appreciate that this reform process has been running for several years, and it is clearly important to reach a final decision within a reasonable timeframe in order to provide the market with greater clarity regarding the arrangements going forward.

However, this initiative is being undertaken in the context of a rapidly changing market environment. In some respects, changing market conditions reinforce the need for reform. Going forward, lower levels of demand may mean that transmission network operators cannot justify transmission replacement expenditure based on reliability standards for load. Generators may benefit from having a mechanism which allows them to contribute towards the cost of replacing the assets that they rely on to get their product to market.

Given the scale of the changes being proposed, and the potential for these arrangements to have far reaching impacts on investment decisions and the resulting costs faced by consumers for many years to come, there is merit in adopting a relatively flexible approach to key design elements in order to ensure that the design is right from the outset. It is clear that if proposed arrangements fail to keep pace with dynamic market conditions, there is a risk that the case for change will not be made and the opportunity to implement beneficial reforms will be lost.

In our submission, we have sought to highlight aspects of the proposed model that we consider would benefit from further clarification or review by the AEMC prior to decisions being taken in respect of next steps. Consistent with this, AEMO would be supportive of further investigation by the AEMC on how some of the core elements of OFA design might operate in the context of recent market developments, and would be happy to work with the AEMC to carry out such an assessment.

The key messages set out in our submission are:

- There is likely to be merit in examining in greater detail, the degree to which the OFA will improve generators' ability to defend financial derivatives in the wholesale market.
- Certain aspects of the proposals have the potential to trigger inefficient investment, with the risk that customers bear the additional costs. With this in mind, it is important that the OFA model is developed having regard to how it might work in a range of future scenarios, including continuation of the current low/negative growth market conditions. In light of these existing conditions (and trends), AEMO is concerned about proposals to allocate transitional access rights for free insofar as such rights could trigger obligations for new transmission investment to underpin the freely provided right. AEMO also seeks clarification on the nature of the network redundancy required as part of the Firm Access Planning Standard.
- It is important that cost allocations between customers and generators are broadly efficient or they will distort decision making by participants, increasing the risk that OFA driven network investment does not optimally address the needs of generators and customers. There is a risk that the stylised LRIC model will not send efficient price signals, with long term consequences for network investment decisions.
- AEMO does not foresee any specific issues arising as a result of the different transmission framework that applies in Victoria.
- The Rules which establish the OFA incentive scheme should be flexible and not prescriptive.

The attached submission explains these matters further and proposes amendments to the OFA model which could assist in avoiding potential problems. Further analysis would need to be undertaken to work through and fully develop the proposed amendments and, as discussed, we would be happy to work with the AEMC and market participants to deliver this.

If you would like to further discuss any matters raised in this submission, please contact Jess Hunt, Principal Analyst – Regulatory Policy Development on (08) 8201 7315 or jess.hunt@aemo.com.au.

Yours sincerely



Murray Chapman
Acting Executive General Manager Corporate Development

Attachments: AEMO submission

AEMO Submission to OFA Design and Testing First Interim Report

AEMO welcomes the opportunity to provide feedback on the AEMC First Interim Report for the OFA proposals. As noted in our cover letter, our key messages are as follows:

1. There is likely to be merit in examining in greater detail, the degree to which the OFA will improve generators' ability to defend financial derivatives in the wholesale market. The value of an OFA right to a participant in managing risk underpins the whole arrangement.
2. Certain aspects of the proposals have the potential to trigger inefficient investment, with customers bearing the additional costs. With this in mind, it is important that the OFA model is developed having regard to how it might work in a range of future scenarios, including continuation the current low/negative growth market conditions. In light of these existing conditions (and trends), AEMO is especially concerned about proposals to allocate transitional access rights for free insofar as such if rights could trigger obligations for new transmission investment to underpin the freely provided right. AEMO also seeks clarification on the nature of the network redundancy required under the Firm Access Planning Standard.
3. It is important that cost allocations between customers and generators are broadly efficient or they will distort decision making by participants, increasing the risk that OFA driven network investment does not optimally address the needs of generators and customers. There is a risk that the stylised LRIC model will not send efficient price signals, with long term consequences for network investment decisions.
4. AEMO does not foresee any specific issues arising as a result of the different transmission framework that applies in Victoria.
5. The Rules which establish the OFA incentive scheme should be flexible, not prescriptive.

This submission explains these matters further, and proposes amendments to the OFA model which would resolve potential problems.

1. Contribution of the OFA to improvements in the ability to defend financial contracts

The AEMC's First interim Report identifies financial certainty for generators as a key benefit associated with OFA.¹

As part of AEMO's terms of reference to develop the OFA access settlement model, set out a plan to test the hypothesis that the new access settlement mechanism will encourage generators to submit offers closer to marginal cost during network congestion.

As set out in AEMO's first interim report, AEMO intends to review events in recent years with material price volatility, interconnector congestion and counter-price flows and events of obvious widespread offering away from costs. All of the major events identified as candidates for review so far were either dominated by, or significantly affected by, market design issues outside of the scope of access settlement. These market design issues include:

- portfolio rebidding

¹ AEMC, *First Interim Report – Optional Firm Access, Design and Testing*, July 2014, pp 20-23.

- five-thirty rebidding
- last-minute rebidding, and
- non-scheduled generation.

Therefore it is likely that access settlement, had it been introduced alone, may have changed, but would not have entirely eliminated these outcomes. These findings are likely to make it difficult for AEMO to assess the incremental dispatch benefits associated specifically with access settlement.

AEMO's First Interim Report on the OFA access settlement mechanism discusses these issues in more detail.² We are concerned that if there are limitations in the incremental benefit of access settlement as a stand-alone reform due to prevalence of these other issues, there could be flow-on implications for the attractiveness of firm access rights in the context of the broader OFA.

The value of a firm access right to a participant in managing price risk underpins the broader OFA arrangements. If the access settlement product does not provide a material increment in financial certainty in practical market conditions, then participants' incentive to purchase firm access rights could be reduced. At the core of this concern is whether the market design issues listed above, independently or in concert with intra-regional congestion, might be a greater cause of trading risk to generators than the form of constrained-off volume risk described in the Transmission Frameworks Review.

Therefore we suggest that the AEMC consider the the OFA reform in the broader context of these market design issues as part of the evaluation process. We note that mitigation measures are currently being considered in relation to some of the listed market design issues, and outcomes of those processes will also likely be relevant.

Ultimately, it will be the decision of generators whether the access settlement product confers on them a right which is valuable and useful. Their purchases of firm access drive the entire OFA model. Thus, generator views on the benefits of acquiring firm access should be carefully considered

2. Risk of customers bearing the costs associated with different investment

The NEM was devised in a period where we expected ongoing growth in on-grid demand at close to the growth rate of the economy. Even the OFA proposals were devised in the context of concerns about increasing issues associated with transmission congestion, and the efficiency of new generator location decisions. The current environment and forward outlook now is completely different.

Our latest National Transmission Network Development Plan (NTNDP) forecasts that only \$5 billion of transmission network investment is required over the next 25 years³, compared with over \$7.3 billion of investment provided for during the transmission businesses' current 5 year regulatory periods.⁴ Further to this, the 2014 Electricity Statement of Opportunities (ESOO) finds that the National Electricity Market (NEM) potentially has between 7,650 MW

² AEMO, *Optional Firm Access – AEMO First Interim Report*, July 2014, pp 16-18. Available at: <http://www.aemo.com.au/Electricity/Market-Operations/Optional-Firm-Access>.

³ AEMO, *2013 National Transmission Network Development Plan*, 12 December 2013. Available at: <http://www.aemo.com.au/Electricity/Planning/National-Transmission-Network-Development-Plan>.

⁴ AER, *State of the Energy Market 2013*, 20 December 2013, pp 62.

and 8,950 MW of surplus capacity in 2014-15, with no new generation capacity being required to meet supply adequacy for 10 years.⁵

If we are to enter a protracted period of very low or even negative growth in on-grid supply, then the processes to develop the regulatory arrangements and Rules need to fully consider how to drive efficient outcomes in such an environment. In the case of OFA, this should include the drivers to reconfigure the network over time to provide the optimal network with potentially a different spatial location of generators and loads rather than a process which simply rebuilds the existing network as it ages.

There are also new risks to TNSPs associated with providing firm access that may not have been considered relevant during the initial development of OFA. For instance, a generator that obtains short term access rights for nominal cost via the auction process will be entitled to the same level of compensation as a generator that holds long term firm access. Where unforeseen changes in load diminish a generator's access, TNSPs may have limited opportunities to respond to the shortfall within the short term.

In its current form, the proposed OFA model could give rise to inefficient investment as a result of:

- the nature of transitional access rights
- the inflexibility of the firm access planning standard (FAPS), and
- the role of the LRIC pricing model in driving long term investment decisions proposals which could have the effect of requiring TNSPs to invest beyond the FAPS

We separately address the matter of redundancy standards in section 3 below.

2.1. *Transitional access rights*

To the extent that the transitional arrangements allocate the capability of the existing network, the costs are already sunk. Distributing these rights for free in transition can be argued to be reasonable. However, if the transitional access rights confer a future right that require initial access allocations to be maintained in the face of changing network conditions, then it is not merely sunk costs that are being allocated. As the AEMC notes, there is a risk that customers will be forced to fund upgrades to maintain access rights that the generator was given for free and which the generator may not value in full.

Clearly, whether or not these concerns eventuate depends on the duration of the transitional period. AEMO prefers a short transition period.

Proposed solution:

TNSPs should not be obliged to invest in order to meet access obligations if those rights were given away. There also needs to be provisions put in place that ensure no investment is made that does not deliver value for money to the market. The value to the market could be discovered in a number of ways. For instance:

- TNSPs could be required to identify an expected future breach of the FAPS in respect to a transitional OFA, price a solution and then invite the holder of the access to decide whether to fund the upgrade or accept a reduction in the number of units covered by that right.

⁵ AEMO, *2014 Statement of Opportunities*, August 2014. Available at: <http://www.aemo.com.au/Electricity/Planning/Electricity-Statement-of-Opportunities>.

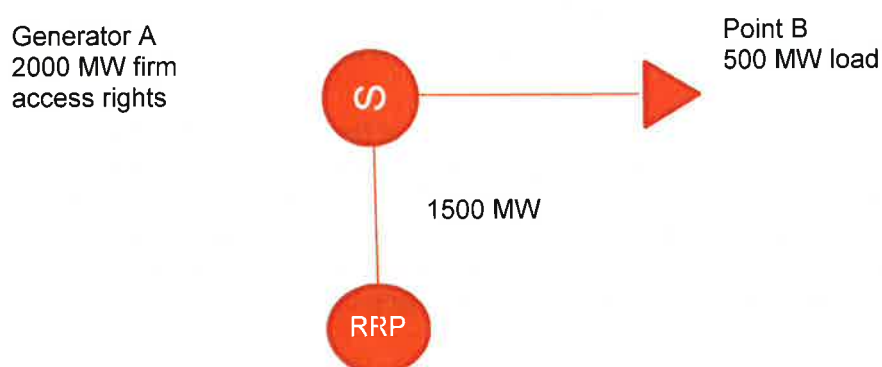
- Rather than grandfathering all existing network capability to incumbent generators, the AEMC could withhold a proportion of generators' transitional access allocation and auction it off. For instance, 85% of existing network capability could be allocated to incumbent generators and the rest could be auctioned.

2.2. Inflexibility of the FAPS

The adoption of a deterministic FAPS which must be maintained for the duration of a long term contract, irrespective of the costs, is unlikely to be efficient. This aspect of the OFA model runs counter to the AEMC's final decision on transmission reliability frameworks.⁶ In that review, the AEMC recommended that there should be scope to vary deterministic reliability standards when circumstances change such that the investment required to meet the standard is no longer efficient.

Changing market conditions mean that the sale of firm access rights brings additional risks that may not have been foreseen during the earlier stages of the TFR. A generator's access may be constrained as a result of changes to load patterns if reductions in demand have the effect that the generator is no longer able to utilise historic flow paths. Figure 1 depicts a scenario where this could occur.

Figure 1 – Allocating access rights under changing market conditions



In Figure 1, Generator A receives 2000 MW of transitional access rights. If transitional access rights are allocated on the basis of existing network capabilities when there is 500 MW of load at Point A, and this load ceases to operate (for instance, due to a major industrial closure) then the TNSP faces a firm access shortfall. The TNSP could undertake an upgrade to meet the shortfall, however it is not clear that this investment is required or would be sufficiently valued by the market to justify the cost.

It is important to ensure that the reforms do not lead to an outcome where TNSPs are obliged to invest in order to meet firm access obligations in circumstance where the market value of the investment is untested. The currently proposed OFA model would suggest that the TNSP is obliged to invest to ensure that the generator's firm access right to the regional reference point is maintained, even if the network is unconstrained or if lower demand means that the generator holding the right no longer has any use for their full access allocation.

⁶ AEMC, *Review of National Framework for Transmission Reliability – Final Report*, November 2013.

Proposed solution:

To reduce the risk of inefficient investment, the arrangements should ensure that the benefits to the market of a proposed investment are always tested. A number of mechanisms for achieving this could be incorporated into the design.

Where new investment or non-network options are required to maintain existing firm access rights, there could be an obligation on the TNSP to test the market and seek opportunities to buy back the firm access rights rather than simply build. For instance, where a network upgrade is required in order to maintain the FAPS, TNSPs could be required to undertake a tender process where firm generators are given the opportunity to sell their firm access rights back to the TNSP. If generators are willing to sell their access rights for a price that is less than the cost of the upgrade, then other things being equal, the upgrade should arguably not go ahead. Such an arrangement could be implemented by making it mandatory for the RIT-T to include consideration of a firm access buy back option.

2.3. *Costs of OFA investment should be reflective value to beneficiaries*

The OFA model will lead to the case where some of the TNSP's costs come from generators and the provision and maintenance of firm access rights OFA's while others will come from customers for the provision of secure and reliable supply. This will apply to both operating and capital costs. Revenues will then be raised from customers and generators to recover costs over time.

AEMO's focus in the first instance is on the overall efficiency of the market rather than wealth transfers. This reinforces the importance of the points above in ensuring that capital spending to support OFA rights is tested to ensure that it reflects value to the beneficiary of that investment. This is a hard lesson learned in the NEM over recent years. There is also a need to ensure that overall spending on the network is efficient; i.e. that the network is developed in an integrated manner to efficiently meet the needs of customers and generators.

There are likely to be significant risks associated with obliging TNSPs to invest in order to maintain the FAPS, when the original decision to purchase a specific level of access was based on stylised or inaccurate price signals. AEMO is concerned that an earlier application of the LRIC pricing model is not an adequate substitute for a detailed cost benefit analysis using the latest available information.

Efficiency could be compromised if pricing structures do not provide an appropriate price signal to the party driving TNSP costs. This will undermine the benefits associated with moving towards a more commercially driven model of network investment. It would be undesirable for costs imposed on a TNSP to meet obligations for generators to be imposed on customers or vice versa. Pricing signals must broadly match actual cost allocations between customers and generators for efficient investment decisions to be made. Otherwise, such pricing signals will distort decision-making by participants, leading to sub-optimal investment decisions.

Proposed solution

To minimise costs shifting between generators and customers, access rights could be characterised as conferring priority access but not firm access. The purchase of access rights would protect generators against the risk of subsequent entry by another generator, but would not confer any obligations on TNSPs to ensure that generator access is maintained in light of diminished load. In this case the only costs to TNSPs associated with a given generator would be the costs associated with providing initial access levels, which would be funded by the generator through the pricing model. Subsequent connecting generators whose connection diminishes the access of pre-existing firm generations would need to either:

- fund augmentations to ensure that existing generator priority access rights are maintained, or
- accept non-firm status

To ensure pricing signals remain accurate and broadly reflective of cost allocations between generators and customers, LRIC prices should be updated by the TNSP to reflect the costs of investment options considered at the planning phase (i.e. following publication of the RIT-T project assessment draft report).

2.4. LRIC pricing model may result in inefficient long term investment decisions

As noted in the above section, pricing signals provided by LRIC must be broadly reflective of the efficient cost allocation between generators and customers. AEMO is concerned that the stylised LRIC pricing model, which will lock in firm access commitments years if not decades in advance, will be limited in its capacity to provide efficient price signals over the long term. If efficient price signals are not provided, then OFA driven investment to meet the needs of generators will not be optimal.

The pricing regime needs careful design and especially in terms of how well the cash flows to TNSPs from generators through LRIC prices paid for OFAs matches the actual outgoings to provide and maintain those rights. Differences, whether they be positive or negative, would fall to customers. If those differences were large, this could lead to significant distortions in pricing and decision making. The valuing of the inherent risks associated with implementing long term rights also needs to be considered.

We do not agree that any model in which generators bear a proportion of the costs associated with transmission investment represents an improvement for customers. This is clearly not the case if the costs are associated with the execution of inefficient investments that would not have occurred in the absence of OFA.

Investments which are driven by historic decisions based on long term forecasts run a high risk of being inefficient, particularly in a rapidly changing energy context.

At present TNSP investment decisions are based on detailed cost benefit analyses using the latest available information via the RIT-T process. The AEMC's proposed model would require TNSPs to invest to meet the firm access planning standard even where the net benefits of doing so are negative. The RIT-T's role would be limited to choosing between different options rather than assessing the need for the project in the first place. This runs the risk of being regressive.

The OFA proposals are inconsistent with the AEMC's decision in the reliability standards review where the AEMC recognised that the deterministic standards come at an unacceptably high cost. In that review the AEMC recommended that there should be scope to vary a reliability standard if circumstances change so that the costs associated with meeting the standard exceeds the benefits.

Proposed solution:

AEMO suggests that there should be mechanisms in place that require TNSPs to consider alternatives to building to meet the FAPS to minimise the risk that the investment is inefficient, as could be the case due to changing circumstances. Investments required to meet the FAPS be subject to a RIT-T so long as they meet the minimum cost threshold, including where the investment is triggered by the need to replace an existing asset.

We understand that the AEMC is considering whether it is still appropriate to assume that LRIC prices should be fixed for the life of the agreement. AEMO supports further investigation of mechanisms which make the OFA arrangements more flexible. We note that the AEMC recommended the adoption of flexible arrangements in the transmission reliability frameworks review.

There could be some form of reopener mechanism which permits prices to be varied where the original price signal underestimated or overestimated the true cost of providing firm access. Where the original price was too low, generators who still want the firm access rights would have the opportunity to purchase rights based on updated pricing model inputs. Where the original price was too high, generators would get the benefit of lower prices. This process is likely to require oversight from the AER.

2.5. *Obligations to invest beyond the FAPS*

AEMO has particular concerns about two aspects of the AEMC's proposed model which have the potential to drive unnecessary investment.

First, the AEMC suggests that there may be a need for a mechanism which allows TNSPs to invest to resolve congestion at certain flow-gates even though they are not required to meet the FAPS.⁷ TNSPs are responsible for developing the FAPS methodology in a way that reflects jurisdictional variations. There is scope to ensure that the FAPS covers investments which are favourable to generators without resorting to a regime which provides for additional investments beyond the FAPS.

Second, the AEMC suggests that TNSPs should factor in the probability of forced outages occurring during a force majeure event when they plan the network to meet the FAPS.⁸ It is difficult to see how this proposal can coexist with a model where the FAPS sets out the contingencies that the TNSP must plan for, and where TNSPs will be exposed to an incentive regime. Planning arrangements which seek to maintain access levels during force majeure events run a very high risk of leading to overinvestment. This would not result in an efficient level of reliability.

⁷ AEMC, *First interim Report – Optional Firm Access, Design and Testing*, July 2014, pp 47.

⁸ AEMC, *First interim Report – Optional Firm Access, Design and Testing*, July 2014, pp 49.

Proposed solution:

There should be no obligations to invest beyond the FAPS.

3. Redundancy standards

AEMO seeks clarification of the nature of the redundancy standards proposed by the First Interim Report. The First Interim Report refers to a "mandatory standard that requires a TNSP to plan its network so as to be able to provide agreed access levels for firm generators under specified peak conditions. This would specify the level of redundancy that TNSPs must build into their network."⁹ Whilst not clear, we are concerned that this could be interpreted to mean an 'N-X' deterministic redundancy standard.

AEMO has understood that the OFA framework required TNSPs to ensure capacity on the network was planned to meet firm access rights under peak conditions with no explicit redundancy requirement, but that the power system will remain in a satisfactory operating state following an outage. This is the approach AEMO has used for the indicative allocation of transitional firm access to date for the AEMC in the context of the OFA work.

If our understanding is correct, the Firm Access Planning Standard would not require the TNSP build additional redundancy into the network in comparison to pre-OFA circumstances. Rather, redundancy in this sense means having sufficient network capability to meet firm access requirements and ensure the network is still in a satisfactory operating state following a contingency event.

If deterministic redundancy standards (eg N-1) formed part of the Firm Access Planning Standard (and we understand that is not intended to be the case), then AEMO would be particularly concerned. Deterministic redundancy standards are ill suited to an uncertain demand environment because they create a presumption in favour of network solutions.

To avoid any further confusion in relation to the AEMC's intention in relation to the Firm Access Planning Standard, and its implications, AEMO suggests that the AEMC confirm in greater detail what is intended.

4. Application in Victoria

Subject to our concerns about the FAPS discussed in sections 2.2 and 2.5 above, AEMO does not foresee any major problems associated with the application of OFA in the context of the Victorian transmission planning model. The issue around redundancy standards discussed in section 3 does not arise in Victoria.

Indeed in some respects the model works better in Victoria since the TNSP does not have an incentive to over-build their network in order to improve their performance on the incentive scheme.

⁹ AEMC, *First interim Report – Optional Firm Access, Design and Testing*, July 2014, pp 24.

Proposed solution:

Consistent with the existing market impact component of the STPIS, the OFA incentive scheme should apply to AusNet Services. The incentive scheme is designed to give effect to the operating standard, which is within the remit of AusNet.

We do not consider that this approach would result in AusNet bearing undue risk. Indeed, if the AEMC adopts the parameters suggested in the first interim report, then AusNet is likely to be less exposed than they currently are under the market impact component (except where the market impact of the constraint is less than \$10/MWh). Further, AEMO would continue to use a transparent process to determine what investment is required to meet the FAPS and AusNet would continue to be able to contribute to that process.¹⁰

The Victorian transmission planning model establishes a contestable framework where TNSPs other than AusNet may provide transmission services. Contestably procured transmission assets do not form part of the declared shared network and are not regulated by the AER. In these cases, AEMO could give effect to the OFA incentive scheme via contractual agreements. As well as establishing a contractual framework that emulates the OFA incentive scheme for the contestable TNSP, the contractual provisions would need to take into account any potential shortfall on AusNet's network which arises as a result of events on the contestable TNSP's network (and vice versa). AEMO already negotiates and administers these types of provisions in relation to the market impact component of the STPIS.

5. Effectiveness of incentive schemes

Designing an incentive scheme is inherently complex. For instance, the proposal for system of nested caps has the potential to create perverse incentives on the TNSP to run up high access shortfalls during periods where the cap on the TNSP's liability is binding. This would occur if the TNSP is subject to a target based on a rolling average, such that a high shortfall in the current year results in an easier target in future years.

It is common to require several rounds of refinements to get an incentive scheme to work as planned. If the Rules pertaining to the incentive scheme are overly prescriptive then there is a high risk that suboptimal arrangements will be locked in. Past experience demonstrates that it is crucial that the arrangements permit the AER to modify the scheme over time.

The AER has previously indicated that it would seek to update the market impact parameter if disorderly bidding is addressed.¹¹

The Rules should include only high level principles for the OFA incentive scheme. The arrangements should be flexible enough to permit the AER to design an incentive scheme which considers the detailed practical consequences of different approaches, and which is able to be refined over time.

¹⁰ For instance, AEMO consults in the assumption and inputs used to develop the Victorian Annual Planning Report:

¹¹ AER, *AER submission to first interim report – Transmission Frameworks Review*, January 2012, p.4. Available at: <http://www.aemc.gov.au/getattachment/45884e51-575c-42cb-b15f-2706702534bf/Australian-Energy-Regulator.aspx>.