4th September 2014

Australian Energy Market Commission
PO Box A2449
Sydney South NSW 1235

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Project Number: EPR0039

Dear Mr Pierce

Optional Firm Access Design and Testing – First Interim Report

The Optional Firm Access (OFA) model proposal represents the most controversial and fundamental change to the NEM since its inception in 1998. This highly complex model has the potential to radically change incentives, behaviours and risk profiles faced by all Market Participants.

Given the significant scale of the proposal, it should only be considered for implementation if:

- There is a widely accepted serious and material failing of the current NEM design that needs to be addressed, and
- The OFA proposal unambiguously resolves this material failing and does not have material unintended consequences to the Retail, Wholesale Hedge, and Spot markets in the NEM.

Snowy Hydro's analysis to date has shown that the OFA proposal does not meet these two criteria. We believe the "problems" that the OFA model is intended to solve is in practice likely to be only imposing minimal economic costs.

Additionally the following contextual factors that exist in the market simply do not support the need for the OFA model:

- There is overinvestment in generation;
- There is overinvestment in transmission and distribution;
- Demand and energy growth has stalled;
- The wholesale energy price and forward contract prices are insufficient to make any new large scale generation investment financially viable; and
- The prospect of new large scale generation investment as a result of the large scale Renewable Energy Target is remote irrespective of whether or not the current fixed targets are reduced to the "true" 20% because the sum of total revenues from Large Scale Certificates and the wholesale energy price is insufficient to make these new entrants viable; and

- AEMO through their responsibility to publish the Statement of Opportunity for 2014 has concluded that no new generation investment is required for at least another 10 ears.

The OFA model if implemented in the current state of contextual factors would simply result in more regulatory risk, more inefficient transmission build, adverse impacts to the hedge markets, arbitrary wealth transfers amongst incumbent generators, and massive costs for incumbent generators who would receive a level of transitional access which would be significantly lower than the implicit access that they currently have in the NEM.

At the same time, the OFA model's direct implementation and operational costs will be significant. While the OFA concept has been explored at a high level, there still remain many questions of detail and implementation that require resolution. For instance:

- The key feature of the LRIC pricing model has not been developed sufficiently for Market Participants to critique. We note forecasting demand and energy growth one year ahead is inherently a difficult task and experience has shown that these forecasts are significantly wrong. We therefore remain highly sceptical that forecasted LRIC prices can be produced with any level of accuracy for the life of new transmission build driven by access requests;
- The governance arrangements with Regulatory bodies has not been assessed;
- The incentive schemes for TNSPs remains a work in progress;
- The detailed cost benefit analysis which must look at all related markets in the NEM i.e. retail, hedge, and spot markets has not been performed; and
- The transitional access allocation methodology has been shown to be clearly flawed and does not even meet the AEMC's stated aims and objectives.

Snowy Hydro has been actively involved with the AEMC Technical Advisory Group which has been asked to provide technical assistance on the OFA model. After more than six months involvement with this project it is clear that a lot of issues of detail have not been adequately canvassed to provide assurance that the OFA model if implemented would achieve its stated aims and not lead to unintended consequences.

More importantly, Snowy Hydro believes there are strong reasons to suggest that the OFA proposal even with matters of detail fully elaborated and resolved would lead to unintended and adverse consequences to the efficiency of the NEM. We strongly advocate that the design and testing of the OFA model ceases and instead resources may be more efficiently diverted towards improving current regulatory frameworks and instruments as they relate to transmission and access in the market.

What's the Problem?

The claimed benefits[1] of the OFA proposal are shown in the Table 1 below together with our high level critique for each claimed benefit:

Claimed Benefit	**Critique**
A more coordinated approach to generation and transmission investment (including a market-led approach to transmission investment)	A high level of co-ordination already exists with the application of the RIT-T.
Transfer some risk of transmission investment from consumers to owners of generators	Why or how is this better? The cost of transmission as an essential service is still most efficiently recovered directly from end consumers.
Better operation of transmission networks	Why not improve the current incentive schemes?
Firmer hedge against inter-regional price differences	Firm inter-regional hedges are achievable now with plain vanilla financial instruments. Why is this criteria elevated as a key benefit?
Create more certainty for generators	The OFA model creates more uncertainty for generators. All generators firm or non-firm face a level of pricing / basis risk which would increase the risk profile of all generators.
Better locational signals for generators	The RIT-T, fuel prices, water, land, labour constraints, marginal loss factors, Regional Reference Prices, and Forward contract prices all provide locational signals for new entrants. Why is there a need for OFA?
More efficient dispatch of generation	AEMO's modelling on Access settlement has shown that at least five other major factors influence dispatch to which OFA Access settlement has no influence to change incentives. Any improvement in efficient dispatch would be ambiguous and at best negligible compared to the adverse impact on the hedge markets by introducing basis pricing risk.

Table 1.

Six out of the seven benefits are meant to accrue to generators. It seems odd that all generators with the only exception of Alinta Energy and GDF Suez don't support the OFA.

[1] AEMC Briefing Presentation to the Clean Energy Council, page 4

We believe Alinta's and GDF's support is tenuous at best and contingent on receiving high transitional access allocation. Given the high degree of vertical integration this also means that the vast majority of Retailers also don't support the OFA model. The TNSP's remain luke-warm on the proposal as highlighted in the TransGrid[2] presentation to the Public Forum:

> *OFA a positive development if:*
>
> - *benefits can be demonstrated to exceed the costs*
> - *confidence that the arrangements can be practically implemented*

We understand the views of TransGrid are reflective of other TNSPs.

From this it is clear the vast majority of NEM Participants simply don't support the OFA model or have highly conditional support subject to practical implementation and cost/benefit issues.

We support the comments made by audience members at the Public Forum that the AEMC has an important role to play in its central role as the Rules Administrator. Audience members also made the comment that it would be problematic if the AEMC was the primary advocates of implementing the OFA model as this would reduce confidence in the Rule making process.

We have been disappointed that elements of the OFA from the Transmission Frameworks Report (TFR) Final Report has been taken as sacrosanct when in our opinion the report was a concept document which had not rigorously tested whether the core elements of the OFA model was indeed workable.

The OFA model is not the solution

If the OFA is to make any difference, it must induce investment in transmission that would not currently pass the Regulatory Investment Test-Transmission (RIT-T). Hence there are strong reasons to believe rather than minimising the joint cost of transmission and generation, the OFA model if implemented would lead to additional, inefficient new investment in the transmission system.

The RIT-T is an economic test that ensures that reliability investments are the least cost option and investments with market benefits only proceed if the net market benefits are positive. There is no evidence to suggest that the RIT-T is flawed and is preventing projects with net economic benefits from proceeding.

Transmission Network Service Providers (TNSP) as profit maximising entities are already actively researching all possible projects that might pass the RIT-T in order to benefit from their construction. Hence, it is unlikely that the RIT-T is not achieving its objectives and that economic transmission projects which may exist aren't being actively pursued.

Thus, under the OFA any transmission system augmentation to provide firm access to generators by definition cannot be welfare enhancing for the market as a whole. If they were, the RIT-T would have already built the transmission augmentation.

Another reason to suggest that the OFA would lead to more inefficient transmission build is due to the fact the OFA proposal materially increases the risks of the TNSPs. TNSPs

[2] TransGrid, Steven Clark presentation to AEMC OFA Public Forum

become the compensator of last resort when firm generators are constrained and the compensation pool from non-firm generators is inadequate. Given this risk, the TNSPs approach to access augmentation projects would be highly risk averse and therefore TNSPs would overbuild to the extent they can to minimise the risk of compensation. Again the end result will be that the transmission network will become less efficient.

We believe the OFA by introducing pricing (basis risk) on all generators is likely to have a material negative impact on the aggregate level of contracts offered by generators in the NEM. This negative impact would dwarf any uncertain and unquantifiable "benefit" to the Spot market and "benefit" to improved co-optimisation of transmission and generation investment.

Finally we suggest that while the issue of access encroachment for existing generators may be material and significant for the affected generators, it is not endemic and pervasive problem in the context of the entire NEM. The arguments for firm access to prevent encroachment are considerations of equity rather than market efficiency. Hence we believe if the problem was indeed material and a solution is required, that it should be targeted and not involve a fundamental change to the entire NEM design.

Conclusion

Our previous submissions to the TFR remain relevant and show that the current regulatory frameworks are working:

- The RIT-T already sends powerful signals for new generator and transmission investment. That is there already exists a high level of co-optimisation;
- The hedge markets are functioning satisfactorily and are enabling a high degree of competition in the Retail market by providing all Retailers (especially second tiered Retailers) with competitive prices and sufficient volumes to manage their risks;
- TNSP incentives can be sharpen by modifying the numerous incentive schemes; and
- In regard to disorderly bidding, we show that transmission outages are the root cause of market volatility. There is consensus amongst participants and policy makers as to how to value the economic cost caused by disorderly bidding through the calculation of resource cost. Previous and numerous studies have concluded that the resource cost is immaterial, and in any event the OFA proposal may change incentives for generators to bid disorderly, but may not necessarily reduce those incentives or the resource cost in total.

The only issue which we are sympathetic towards is access encroachment of existing generators by new entrant generators. However, we have an Open Access arrangement and not a Contract carriage model. Access encroachment may be efficient and indeed expected in a competitive market, even if it's perceived as a material problem for the affected generators.

In summary we do not support the OFA model. The OFA proposal is a complex and wide ranging "solution" to a number of smaller scale "problems". These "problems" if solved may yield only small benefits to the overall market. But it's not clear that OFA will even resolve these negligible "problems". The cost of solving these "problems" will be high, both in terms of unwanted and unintended side effects and the significant implementation and operational

costs. We believe that it is difficult to find circumstances under which the benefits of the OFA proposal would outweigh its costs.

Our involvement with the AEMC Technical Working Group has clearly highlighted the myriad of complex issues which would make the OFA unworkable. We strongly advocate a firm recommendation from the AEMC to stop the design and testing process and instead consideration should be given to direct resources to improving the current regulatory frameworks which influence transmission and market access.

The rest of our submission addresses specific consultation questions outlined in the First Interim Report.

Snowy Hydro appreciates the opportunity to respond to this consultation. Should you have any enquires to this submission I can be contracted on kevin.ly@snowyhydro.com.au or on (02) 9278 1862.

Yours sincerely,

Kevin Ly

Manager, Market Development & Strategy

3 Assessment framework

Whether there are any additional categories of impact to those that we have identified.

Snowy Hydro believes an explicit category for intra-regional hedging is required. We understand that the category "financial certainty for generation" is generic enough to incorporate effects on the hedge market but given the significance of the hedge markets to the functionality of the NEM we believe this warrants its own category.

On page 23 of the First Interim Report contains a very important paragraph which highlights that the AEMC has not fully understood the increased risks of hedging under the OFA model:

> *Optional firm access may negatively affect some generators in relation to financial certainty.* ***Non-firm generators would face a higher degree of basis risk - earning a local price (after payment of compensation to firm generators) that is less than the regional reference price (but at least equal to their offer price).*** *This basis risk may require complex bid adjustments, and monitoring of constraints for non-firm generators, depending on the dynamics of pricing around local prices.* ***However, we note that this risk does replace the current risk of being constrained-off for some, or part, of their output. That is, under optional firm access generators are trading (existing) volume risk for basis risk.*** *Further, the optional firm access model provides a product to mitigate against these risks, if these risks were deemed significant.*

Under the OFA model **all generators** (firm and non-firm) would be faced with basis risk. A firm generator may have its firm access scaled back and therefore still be subjected to local pricing. The risk tolerance a company takes is a function of the company's Board and risk management policies. Since constraints are sporadic, a company's prudent risk policies must ascribe a higher degree of risk to forward contracting / hedging under the OFA model. As a consequence of this there must be:

- A decrease in the availability of hedge volumes; and
- An increase in generators taking Spot market exposure.

The likely impact of a decrease in hedge volumes is second tier Retailers would find it increasing difficult to source competitive wholesale hedge contracts. This over time will reduce the level of competition in the Retail market.

The ACCC's recent report[3] to the Australian Competition Tribunal on the proposed acquisition of Macquarie Generation by AGL Energy Limited provides independent analysis and commentary that supports our assertion that maintaining generators intra-regional access to its Region's regional reference node is essential to maintaining a competitive, deep, and liquid forward contracts market which underpins the ability of second tier Retailers to enter the market and stimulate competition in the wholesale market. The ACCC comments are directed towards inter-regional trading between two different pricing regions (in the extract the NSW Pricing node is the focus of the hedging activities) but these observations are directly applicable to the OFA model since effectively all generators would be exposed to a

[3] ACCC's Report to the Australian Competition Tribunal, File No. 1 of 2014. Refer to http://www.competitiontribunal.gov.au/authorisations#list

Local price which would be different to the generators Regional Reference Node (RRN) price.

From section 7.13 – "Requirement of use hedge contracts referencing the NSW spot price".

> *Section 7.15 – Therefore, the ACCC considers that hedge contracts referencing a spot price in another region do not provide a substitute for hedge contracts referencing the NSW spot price. While interregional hedging strategies are possible, and may be engaged in to a small degree by market participants from time to time, hedge contracts referencing the NSW spot price provide clearly the most effective form of hedge cover for NSW retail loads and are an input that is fundamentally required by electricity retailers supplying end-users in NSW.*

The OFA model would introduce basis risk for all generators. This fact in combination with the ACCC's analysis outlined above supports Snowy Hydro's belief that to advance the NEO the NEM needs the availability of intra-regional hedges which are predominantly provided by intra-regional generators (Generators within the same pricing Region). Any reduction in the ability of generators to sell in their own region due to the Basis pricing risk won't be replaced in full (ie. one for one) by inter-regional products because these products are riskier (i.e. transmission outage risks and transportation losses) and hence Retailers (especially second-tier and start-up Retailers) will incur additional risk mitigation costs which will stifle competition in the NEM.

If generators are either forced to reduce forward hedge contracting due to increased risk, the consequence is generators taking more Spot market exposure. If this were to occur there would be the likelihood of increase market volatility and the exercise of localised market power.

An issue which the AEMC has not considered is the increased likelihood that non-firm generators behind a flowgate would withhold generation to align prices with their upstream RRN price in order to reduce price separation risk. This incentive was a well explored in the Snowy Region boundary abolition. It was well documented that the headroom required on the Tumut transmission lines was up to 100MW of underutilised transmission capability.

On the second issue "*However, we note that this risk does replace the current risk of being constrained-off for some, or part, of their output. That is, under optional firm access generators are trading (existing) volume risk for basis risk."*, under current market arrangements there is a well-defined method of allocating transmission capacity where generators bid to the Market Floor Price and in doing so share in the limited transmission access. There is no basis risk as the generator receives the RRN when it is dispatched. In contrast under the OFA there is still volume risk as dispatch is not guaranteed and there is additionally basis risk if a proportion of a generators output is priced at its Local price. Hence we don't agree with the statement that, "**under optional firm access generators are trading (existing) volume risk for basis risk.**" Volume risk for generators remains in the OFA model and there is additional basis risk.

In summary more weighting should be placed on certain categories when assessing the impact of the OFA model. We believe the two key categories where the risk, cost and benefit of the OFA model could have the most pronounced impact on the efficiency of the NEM are:

- Financial certainty for generation; and
- The new criteria of effective intra-regional hedging.

4 Firm Access Standard

We support the firm access standard applying at all times. Further to this we suggest that there may be good reasons to specify the conditions that would make the system an abnormal outage condition. This is because we suggest the nested caps be higher in these periods to reflect the fact that these are the periods which have the most impact on generators and a higher cap should incentivise the TNSP to minimise the probability of getting into this state in the first place and once in this state to return it to "normal" operating conditions are fast as possible. This is driven by the general principle that if the OFA is to be implemented, we want better incentivisation on TNSPs than that which currently exists in abnormal / constrained conditions.

We advocate that the nested caps are not linear but skewed to provide more at risk money in short periods to reflect risk of market driven events which are caused by reductions in transmission capability.

We would support the access planning standard being classified as a conduct provision.

5 TNSP incentive scheme

We support the incentive scheme where TNSPs are subjected to both rewards and penalties. However the penalty scheme should be steeper than the reward to recognise the higher risk on generators with the potential for the market to clear at much higher Spot prices.

The nested caps and collars could be structured to apply in Peak and Off-peak periods.

6 Issuance of the long-term inter-regional access product

The extent to which stakeholders would be interested in purchasing inter-regional Access.

We note that firm inter-regional hedges are already available and achievable now with plain vanilla financial instruments. Contract traders use these liquid financial instruments to achieve 100% firm hedges across different pricing regions.

Hence the issuance of long-term inter-regional access may only incrementally improve the availability of an already liquid and competitive market for inter-regional hedges.

If the long-term inter-regional access product were to replace the SRA products then Snowy Hydro would be likely to participate in the purchase/auction of inter-regional access. We note that inter-regional products are only used at the margin to help mitigate the risk of sold forward hedges. This observation is backed by ACCC's analysis to the Australian Competition Tribunal with respect to the AGL acquisition of Macquarie Generation[4].

Under the OFA model this inter-regional product may be slightly firmer but this won't mean more contracted volume is available to the market as trading across regions is inherently more riskier and costlier that trading within your own pricing region.

[4] Refer to: ACCC's Report to the Australian Competition Tribunal, File No. 1 of 2014. Refer to http://www.competitiontribunal.gov.au/authorisations#list

7 Short-term firm access

Whether the proposed short-term product is attractive, including: - whether it is appropriate that it only covers timescales less than the transmission expansion lead time (which we consider at this stage to be three years);

We don't see a need for this as the issuance of short-term firm access may drive perverse incentives to down play transmission capability to allow revenue to be earn on short term issuance. Snowy Hydro can't see why this is any different to incentives under AER's network capability scheme.

9 Transitional access

AEMC proposed approach for the initial allocation of transitional access;

The proposed approach is flawed. It does not even meet AEMC's stated aims and objectives.

Figure B.2 of the AEMC First Interim Report shows indicative transitional access. This is reproduced in the figure below with the red circles showing sub-regions where the level of transitional access would not be acceptable.

Sub-Region	Base	Taper	Off-peak	Windy	Winter	Mothball	Flowgate
Northern Queensland	100%	100%	100%	100%	100%	100%	100%
Central Queensland	99%	99%	97%	97%	96%	99%	99%
Brisbane	100%	100%	100%	100%	100%	100%	100%
South Western Queensland	84%	84%	84%	85%	82%	84%	82%
Hunter Valley NSW	100%	97%	100%	100%	100%	100%	100%
Central Coast NSW	100%	100%	100%	100%	100%	100%	100%
Sydney	100%	100%	100%	100%	100%	100%	100%
Western NSW	100%	90%	100%	100%	100%	100%	100%
Southern NSW	100%	80%	99%	100%	100%	100%	100%
NSW Snowy	63%	73%	26%	48%	60%	63%	63%
Victoria Snowy	100%	100%	92%	96%	100%	100%	100%
Northern Victoria	87%	87%	100%	93%	100%	87%	87%
Latrobe Valley	95%	95%	91%	96%	95%	95%	95%
Melbourne	86%	86%	100%	100%	100%	86%	86%
Western Victoria	100%	100%	100%	100%	93%	100%	100%
South Eastern South Australia	90%	90%	88%	80%	74%	90%	90%
Adelaide	100%	100%	100%	100%	100%	100%	100%
Northern South Australia	97%	97%	90%	87%	86%	99%	97%

Focusing on the NSW Snowy sub-region our analysis shows that the initial allocation methodology is fundamentally flawed:

- The initial transitional allocation methodology is based on the marginal value of a constraint that has never bound:
  - The 39 line is a recent major TransGrid 500kV investment; and
  - The 39 line has **1000MW** headroom;
- Does not consider constraints that bind regularly or are likely to bind (ie. voltage constraints)

Table 2 below critiques the Initial Transitional Allocation methodology against the AEMC's own stated aims and objectives. This analysis concludes that the methodology is flawed.

Issue	Assessment
Does it meet the AEMC's Aim? "Generators' current levels of access will continue for some time"	• No • Both Lower Tumut and Upper Tumut have generated at 100% of their registered capacity in the last 2 years.
Does it meet the four Initial Transitional Access objectives set out in the Transmission Frameworks Review	1. To mitigate any sudden changes to prices and margins for market participants on commencement of the optional firm access regime. (Objective violated) 2. To encourage and permit generators – existing and new – to acquire and hold the levels of firm access that they would choose to pay for. (Objective violated – we would not "choose" to pay for 37% more "firm" access. Why should we have to pay for access which we already implicitly have for free?) 3. To give time for generators, TNSPs and other market participants to develop their internal capabilities to operate new or changed processes in the optional firm access regime without incurring undue operational or **financial risks** during the learning period. (Objective violated - would have to drastically unwind our forward contract positions as the low initial transitional allocation would create significant basis/pricing risk) 4. To prevent abrupt changes in aggregate levels of agreed access that could create dysfunctional behaviour or outcomes in access procurement or pricing. (Objective violated – This allocation would be an abrupt change to the current level of access for Tumut generators)

Table 2

whether stakeholders agree that transitional processes should seek to protect existing investments from significant commercial/financial effects due to regulatory change, but that they should not unduly dilute or delay the benefits that the optional firm access model is intended to promote;

If a case can be made for OFA, we believe there is no need for immediate implementation because the access encroachment for all generators would still exists with all generators getting equal allocation for each sub-region. For example, Northern Power Station still faces the same encroachment risk from intermittent generator nearby.

AEMO[5] has publicly stated that "For the first time in the history of the National Electricity Market (NEM), no new thermal baseload electricity generation is required over the next

[5] AEMO Media Release. http://www.aemo.com.au/News-and-Events/News/2014-Media-Releases/No-New-Power-Generation-needed-for-the-next-10-Years

decade to maintain system reliability, due to the continuing decline in electricity consumption."

AEMO estimates there may be up to 8,950 MW of surplus generation capacity in the NEM in 2014-15. Coupled with the fact that there is uncertainty in RET policy and low wholesale energy prices means that new wind generation will be limited. Hence the current level of encroachment should not get worse and is likely to exist at current levels to 2024 (see Figure 1 below).

e 1: Summary of supply adequacy shortfalls

	Low scenario		Medium scenario		High scenario	
ion	Timing	Shortfall	Timing	Shortfall	Timing	Shortfa
ensland	Beyond 2023–24	-	Beyond 2023–24	-	Beyond 2023–24	34 MWh 0.0001%[a]
South Wales	Beyond 2023–24	-	Beyond 2023–24	-	Beyond 2023–24	-
oria	Beyond 2023–24	-	Beyond 2023–24	-	Beyond 2023–24	-
th Australia	Beyond 2023–24	-	Beyond 2023–24	-	Beyond 2023–24	-
mania	Beyond 2023–24	-	Beyond 2023–24	-	Beyond 2023–24	-

ow the 0.002% reliability requirement.

Figure 1: Supply adequacy in the NEM

We therefore conclude to allocate access based on the current initial access methodology would simply be an arbitrarily transfer of wealth amongst existing generators with no economic justification.

In line with not rushing to implement and therefore disrupt asset values and introduce unnecessary risks we advocate staged auctioning with at least a 5 year notification period prior to the auction and access settlement commencing 10 years after the go ahead date on the OFA model is given. This staged transition would also be consistent with the fact the NEM does not require any new large scale generation or transmission investment for the next ten years.

10 Staged implementation

Initial thoughts on benefits or costs associated with the different implementation options.

It's a national electricity market where many constraints / flowgates involve different interconnectors and generators across all Regions. Hence it would only make sense if the OFA model can be economically justified that the model is implemented on a NEM wide basis.