Loy Yang Marketing Management Company Pty. Ltd.

AGL Southern Hydro Pty. Ltd.

International Power (Hazelwood, Synergen, Pelican Point, Loy Yang B and Valley Power)

TRUenergy Pty. Ltd.

NRG Flinders Pty. Ltd.

Hydro Tasmania

10th July 2006

Australian Energy Market Commission
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AUSTRALIA SQUARE NSW 1215

Emailed: submissions@aemc.gov.au

Proposed Management of Negative Settlement Residues in the Snowy Region by Reorientation of Constraints

The group of Southern Generators (Loy Yang Marketing Management Company (LYMMCo), AGL Southern Hydro, International Power, TRUenergy, NRG Flinders and Hydro Tasmania) would like to thank the AEMC for the opportunity to assist the Commission in its consideration of the issues in relation to the proposed management of negative settlement residues in the Snowy Region, by reorientation of constraints to Dederang.

This proposal by Snowy Hydro is being considered by the Commission as an alternative to the Rule change suggested by the Southern Generators that was recently endorsed by the Commission.

The Southern Generators are concerned it will be difficult for the AEMC to separate the economic gains of these two competing proposals. This concern arises from the uncertain effect of the proposed mis-pricing (due to constraint re-orientation) on offer formation in relation to the Snowy generators. Because the Snowy generators would receive in effect the Victorian price rather than their local price, they may be incentivised to make offers at prices very different from their opportunity cost.

We note that the AEMC has conducted limited modelling of the Snowy re-orientation proposal as a counterfactual to the Southern generators proposal. Further modelling would be necessary to determine the relative merits of the Southern Generators' proposal and the re-orientation counterfactual, as it is important that this modelling includes extreme negative price offers for Murray generation because, as indicated by NEMMCO, it is this scenario which can result in negative residues with the re-orientation proposal. (See Appendix 1).

Therefore, we consider that it may be more relevant to assess these alternatives from a market design perspective, and in particular, through consideration of their consistency, or otherwise, with the overall direction of market development.

Economically Efficient Dispatch

The Southern Generators agree with the AEMC's comment that dispatch will be efficient if both:

- There is no intervention in the dispatch, eg clamping; and
- Spot market offers reflect opportunity costs.

The Southern Generators' proposal removes the present need for intervention in the dispatch process. The modification to the settlement process proposed by the Southern Generators acts through avoiding distorted incentives for generator offers. The counterfactual proposal by Snowy Hydro involves both intervention by NEMMCO in real-time dispatch and the isolation of Murray generation from the settlement impacts of its spot market price offers. The counterfactual proposal therefore fails to meet both the conditions for economically efficient dispatch.

Consequently, the Southern Generators' view is that the Commission should reject the Snowy Hydro re-orientation proposal in that it is not consistent with the Commission's own criteria for the long-term development of efficient dispatch in the market.

We accept that the regional model in the NEM does not necessarily fully expose all generation to the settlement impacts of its spot market price offers but do not consider that this justifies moving further from the ideal. We concur with the AEMC view that small incremental regulatory changes could take the market towards more efficient dispatch, in an evolutionary manner.

We note that our concern in relation to the effect of constraint re-orientation on economically efficient dispatch is shared by both NEMMCO and Dr Darryl Biggar (ref. Appendix 1)

Locational Pricing

When NEMMCO's dispatch engine, (NEMDE) searches for a least cost market solution, it uses price offers as a proxy for opportunity cost. This is generally reasonable and preferable to assigning costs on the basis of say, fuel type.

For example, whilst a peaking gas plant would normally be considered to be high cost in the merit order, there may be circumstances (such as a take-or-pay contract for gas) where the effective marginal cost of operation could be relatively low. In a similar way, NEMDE does not have knowledge, (nor should it) of parties desire to generate because of contract market exposure.

In general therefore, participants make offers to achieve desired dispatch outcomes. The restraint on generators achieving maximal capacity dispatch by offering 'too-low' prices is that ideally the spot market settlement they receive is potentially affected by their offer price. Where this breaks down, the resultant market dispatch may be economically inefficient. The only way to rigorously preserve efficient dispatch is by exposing generators to the risk of offers impacting on settlement.

The proposal by Snowy Hydro weakens the link between Snowy's market offers and their market incentives based on market settlement.

The Southern Generators accept that the MCE has rejected the application of full Nodal Pricing but also recognises that some exposure to locational price has been accepted by the MCE as a potential tool for the management of transmission congestion. The Southern Generators also recognise that there are circumstances in the market where participants are isolated from the settlement impacts of their offer prices. These matters may well form the subject of future consultations on congestion management.

In contrast, the Snowy Hydro re-orientation proposal leads the market in the wrong direction by distorting locational prices that already exist.

It is worth considering the impact of using the re-orientation approach more widely in the NEM, to address network congestion. For example, the reorientation of constraints affecting the Hunter Valley & western NSW generation, (81/82 lines) could be used to create price competition for western ring generation at the cost of mis-pricing Tumut generation. The Snowy Hydro proposal creates the scenario where they are able not only to control the physical binding of the transmission flow-paths but also the nodes at which their generation plant output is priced, effectively controlling this NEM regional boundary at will. At least one independent analyst agrees with the Southern Generators' view that the distortions caused by re-orientation are likely to be as significant as NEMMCO clamping[1].

Potential Dispatch Outcomes - Scenario Analysis

As is well understood, Murray output has a "gate-closing" effect on Victorian to NSW flows of greater than the actual Murray output, because it does not make equal use of the uncongested Wagga path. For every 1 MW increase in Murray output, the flow from Victoria into NSW must reduce by 1.33MW.

[1] See submission on the AEMC's Draft Rule Determination by Darryl Biggar for the AER, pg 9.

This phenomenon is fine if accurately priced. The Southern Generators' proposal achieves that, allowing Murray generation price to be below that of Victorian generation, and thus Murray generation to be discouraged from "closing the gate". Murray generation will only be able to "close the gate" if

Murray gen bid price is <

Vic gen price – 0.33(NSW gen bid price-Vic gen bid price)[2]

Of course, if the marginal cost of Murray generation was genuinely that much lower than the marginal cost of Victorian generation, such a gate closure would be efficient.

We can be reasonably comfortable that Murray generation would not be bid below its marginal cost if its output were settled at the Murray locational value of supply, i.e. it is paid a price lower than Victorian generation. However if Murray generation were paid at the higher Victorian price, it will no longer have that critical linkage between its bid and settlement price. The result is that it its actual bid price is no longer seen as relevant to its marginal cost, except as a tool to adjust output. The profit maximising behaviour is likely to be that whenever Vic price exceeds its marginal cost, to bid at whatever price maximises volume. This would appear to be the market floor price upon its entire capacity[3]. If that were to occur, the result would then be to actually reverse flows back into Victoria by about 200MW.

Instability in Dispatch

Because the re-orientation requires intervention by NEMMCO, even if this is of the form of an algorithm to select one form of constraint formulation over another, it may result in dispatch instability.

Once the re-orientation is applied, negative residues would no longer arise. This should then permit NEMMCO to re-orient the constraint back towards Murray. If they were to do this, the perverse incentives upon Murray generation would disappear, and bids would be restored to those exceeding marginal cost. The negative residues would then re-appear, and a cycle develop.

Inter-regional Trading

For the reasons outlined above there is a risk that this re-orientation proposal may not increase the extent of inter-regional trading between NSW and Victoria that is likely to occur with the Southern Generator' proposal. There is the potential for a similar reduction in inter-connector firmness to that identified for "flow clamping". It is unlikely therefore to have an equivalent positive impact on competition, by enabling risks to be better managed and efficiency of pricing in the NEM.

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[2] Ignoring loss factors and other constraints

[3] Presuming that the increase in Murray output does not substantially affect the price in the large Vic/SA regions.

If you wish to discuss any aspect of this submission, please feel free to contact Roger Oakley on 03 9612 2211.

Yours faithfully

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Appendix 1: Problems caused by mis-pricing Murray Generation to the Victorian price

The proposal from Snowy Hydro is similar to the "Constraint Re-orientation" proposal suggested by NEMMCO in 2005 to avoid negative residues in the Snowy region during northwards flow.

We draw your attention to the following quotes regarding the consultation conducted by NEMMCO that concluded against the Constraint Re-orientation proposal:

> "*Regarding the issue of the gate closure effect, NEMMCO agrees that increased Murray generation at the expense of transfers from Victoria to Snowy would result in reduced flow into NSW-Tumut, …The effect under the proposed change* (re-orientation), *however, could be more pronounced than under the current arrangement since flow from Victoria to Snowy could become negative under the proposed change, which would not be the case under the current arrangements."*[4]
>
> "*Having re-examined the position in the light of these submissions, NEMMCO concludes that the proposed reorientation approach could create under a range of likely scenarios incentives to maximise Murray output. This could then result within a short space of time in dispatch outcomes similar to, or more pronounced, than those arising through the current method of managing negative residues by constraining flow from Victoria to Snowy*."[5]
>
> *"Even though NEMMCO does not intervene directly in the market under this approach (re-orientation) there still arises an inefficiency in dispatch. This inefficiency in dispatch arises due to the mis-match between pricing and dispatch at the Murray node. Under this approach Murray is paid the VIC price even though the efficient price for Murray output is significantly lower than the VIC price (in the case of northerly flows). Murray has an incentive to respond by reducing its bids to the point where it is dispatched to the level it would like to be dispatched at the VIC price."*[6]
>
> "*However, because this approach introduces a new mis-match between pricing and dispatch at the nodes in the Snowy region, generators in the Snowy region will not have an incentive to truthfully bid their true costs. This has the potential to introduce just as significant a distortion in dispatch as if NEMMCO intervened directly to control flows as in the first alternative above. In fact, it is theoretically possible for the distortion in dispatch to be more significant than in the alternative above.*[7]

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[4] NEMMCO: Revision to procedures for Management of Negative Residues-Final Determination: 20 Sep 2005, page 11.

[5] Ibid

[6] Darryl Biggar (ACCC Consultant) submission to NEMMCO: Procedure for Management of negative residues, May 2005 Pg 11

[7] Ibid, pg 12

Each of these comments related to the severity of problems caused by settling Murray power station at a price outside the loop, i.e. at Dederang. NEMMCO concluded that although the present practice of managing negative residues by reducing interconnector flows to zero-was a serious distortion, it is probably less distortionary than mis-pricing Murray.

In summary, NEMMCO reported that -

> NEMMCO has considered all the issues raised and has in particular closely studied the issue of possible changes to incentives. NEMMCO has reached the conclusion that changes to incentives under the new proposal would be a distinct possibility under a number of likely scenarios along the lines suggested in a number of the submissions received. Based on this, NEMMCO has concluded that a change in the Procedure as it applies to the Victoria to Snowy Directional Interconnector is not justified. This is because the end result under the proposed change is likely to be similar, if not more pronounced, than the outcomes that have occurred under the current approach.