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Comments to Congestion Management Program: Statement of Approach
and
Submission to Review of Snowy Regional Boundary –
Information Disclosure Statement dated 15 June 2006

The AEMC has released a statement of approach setting out how it intends to co-ordinate its work on the congestion management program. The statement of approach is intended to provide clarity on how the AEMC is going to approach a set of inter-related issues. It also reflects the Commission's desire to provide interested stakeholders with an opportunity to understand and respond to the issues.

This letter sets out Snowy Hydro's response on the AEMC's approach to the congestion management program and the AEMC's Review of the Snowy regional boundary information disclosure statement dated 15 June 2006. The letter considers in turn:

- The management of the program, including the time-lines and the interaction between different decisions, and

- The issues to which the AEMC will have regard in reaching its decisions.

Management of the program

The AEMC is considering the long term approach to congestion management; the process for boundary change; two short term measures for negative residues in the Snowy region; and two proposals to change the Snowy region boundary.

These issues are inter-related. Snowy Hydro welcomes the AEMC's decision to consider them together, and reach an integrated set of draft decisions by the end of 2006. This should allow more effective decision making. This approach does however create challenges which will need active management.

First, the AEMC is considering two short term proposals for managing negative settlement residues. Its approach to short term management needs to be consistent with the long term framework.

There is a potential problem in ensuring an integrated approach if the decision on short term proposals is in advance of decisions on the long term framework. However, the broad long term policy has been established by the MCE. The key elements are continued reliance on a regional structure and rejection of nodal pricing; a desire for stability and a staged introduction of any change to regional boundaries; and a desire for all regions to include major load.

The AEMC can ensure consistency by ensuring that it selects between the two short term proposals on the basis – at least in part – of their consistency with this long term policy direction. This may be reflected in a preference for:

- Proposals which are consistent with regional pricing, rather than proposals which are closer to nodal pricing, and

- Proposals which ensure all generation has access to load. The Snowy region is the only region without major load. Proposals which strengthen the access of generators in the Snowy region to load should therefore be preferred over proposals which weaken their access to load.

Second, the approach taken runs the risk of further delay to changes to the Snowy region boundary. It is widely accepted that that there should be a priority to resolving the regional boundary issues in the Snowy region. The region has been poorly defined since market start. The failure to implement changes to the boundary, as envisaged under the design of the NEM, has exposed Snowy Hydro to substantial financial cost and risk. The current short term management – through the CSP/ CSC trial – partially alleviates some of those problems but does not provide a long term solution.

There have been several attempts to improve the Snowy region. In 2001, NECA considered options for change to the regional boundaries in stage 1 of its RIEMNS report. Stage 2 was submitted to Ministers but not released. In 2002, NEMMCO commenced consultation on boundary change, but suspended this in light of the NEMMF review of transmission.

The AEMC now intends to reach a draft determination on the regional boundary by the end of 2006, and a final determination by the end of March 2007. It appears unlikely this will be advanced, although it could slip.

The AEMC has indicated that change is not practicable before 31 July 2007. Given these timelines, a change on that date appears unlikely. NEMMCO would generally require notification well before the end of the previous calendar year to implement a change by 31 July in the following year. It would be regrettable if the approach taken by the AEMC created further delay in implementing changes to the Snowy region boundary to make it consistent with market design.

The AEMC should endeavour to avoid further delays to the change to the Snowy region. It should establish and announce a target date for implementing a change. This should be no later than December 2007. The AEMC should ensure that is fully incorporated in its work program, and liaise with NEMMCO to determine how implementation can be expedited

after the AEMC decision is made. When considering proposals for regional boundary change, the AEMC should prefer proposals which can be implemented rapidly, over proposals which are likely to require further delay.

Decision making criteria

The AEMC has to base its decisions on the NEM objective. It has also adopted the practice of setting out particular criteria, based on the NEM objective, which are likely to apply to decisions on particular issues.

The statement of approach sets out how the Commission will consider proposals, stating:

> *"When considering congestion and region boundary related proposals, The Commission will have regard to a range of matters and in particular, the impact of the proposals on: dispatch efficiency; facilitation of trading in the NEM, including inter-regional trading; and the promotion of good regulatory practice"*

Snowy Hydro considers it helpful of the Commission to set the main issues to which it will have regard. It increases transparency for market participants on how decisions will be made, and allows them to develop proposals and submissions that address the issues of concern to the Commission. We would therefore appreciate the opportunity to suggest some additional issues to which the Commission should have regard, and to provide some illustration of how these criteria might be applied in practice.

The statement of approach does not limit the AEMC's decision making and allows it to consider a range of matters other than those highlighted. However, there are two additional matters which it would be worth highlighting up front. These are:

- *Investment efficiency:* the approach to congestion management is a major component of market design. It will affect the efficiency of new generation investment as well as dispatch efficiency. Short term proposals (such as the treatment of negative settlement residues) can be resolved assuming a given capital stock. The long term framework needs to ensure efficient investment, and

- *Price impacts:* the approach to congestion management affects bidding incentives for participants, pricing arrangements, and the extent to which wholesale prices are likely to reflect underlying costs. A focus simply on dispatch efficiency could result in a market design with poor allocative efficiency (since prices were not cost reflective).

As the AEMC will recognise, these additional criteria should ensure that decisions are based on their impact on static, dynamic and allocative efficiency. Our understanding of these proposed additional criteria, and the AEMC's criteria, is given below.

No single design of the market will perform perfectly against all criteria. In considering these and other issues as it develops its approach to congestion management, the AEMC should focus its attention on achieving improvements in areas where there are material problems due to the current approach to congestion management.

Dispatch efficiency

Dispatch efficiency requires that demand is met by running the lowest cost combination of generation, allowing for network limitations and system security constraints. While the criterion is clear, the way in which performance is assessed is important. If performance of proposals against this criterion is analysed in a simplistic manner, the analysis will produce unrealistic results, and a policy direction contrary to that set out by the MCE.

The AEMC has made clear that dispatch efficiency depends on two issues:

- The ability of dispatch to use the least cost generation, on the basis of bids and offers; and

- The extent to which bids and offers are likely to reflect opportunity costs.

Under regional pricing generators may have incentives to offer very low prices, confident that the price they will actually receive is set by the marginal generation at the Regional Reference Node. Generators at particular locations in Queensland, New South Wales and Victoria may bid at prices – such as minus $1,000/MWh – which are clearly not cost reflective, and are designed to gain access to the transmission network.

A greater degree of locational pricing may increase incentives for cost-reflective bids and offers. Generators are unlikely to offer at minus $1,000 if this sets their price. However, a conclusion that locational pricing increases cost reflective offers, which in turn increases dispatch efficiency, would be too simplistic. It would lead the AEMC to a position which is contrary to the policy established by the MCE, after many years of discussion.

To illustrate this, the AEMC can draw on experience at Snowy Hydro, as it is the only generator in the NEM with experience of the inefficiencies that can arise from locational pricing. Tumut is nodally priced under the CSP trial, and Murray is also effectively nodally priced. The risks associated with nodal pricing create dispatch inefficiencies:

- During high price periods in NSW, and northward flows, Tumut has to bid in a way which ensures there is around 50 MW of spare capacity in the transmission line. If the line constrains, this exposes Tumut to a basis risk from price separation. If Tumut were located in the NSW region, there would be an immediate gain in dispatch efficiency. Tumut would no longer be exposed to the risk of price separation, and could bid to be dispatched at higher levels

- When the Murray-Tumut line constrains on northward flows, Murray is exposed to the prices that arise from the Snowy RRN being located on a transmission loop flow. At present, Murray is protected from these impacts through NEMMCO clamping. A solution which left Murray fully exposed to the pricing is also likely to lead to withholding of substantial amounts of capacity – including 'spare' capacity to ensure the line does not constrain, in a similar way to Tumut.

These dispatch efficiency losses from current pricing arrangements have to be balanced against any dispatch inefficiencies under regional pricing arrangements.

In analysing the long term framework for congestion management, the AEMC should assess the materiality of problems under the current approach. It should also ensure that a balanced assessment is made of the impact of alternative approaches on dispatch efficiency.

Snowy Hydro considers that the most material problems for both dispatch efficiency and investment efficiency arise when the NEM adopts inconsistent models, with some generators being priced regionally and others nodally, and with some generators having access to load and others not. The most significant step forward would be for all generators in the NEM to be treated consistently. This requires adjustment to the Snowy regional boundary.

Price impacts

Rule change proposals, and options considered by the AEMC in its congestion management review, are likely to differ in their impact on prices, and the extent to which prices reflect underlying costs. In general, we consider the AEMC should prefer options which lead to more cost reflective prices.

As with dispatch efficiency, it is important that any assessment under this criterion is done well. In particular we would highlight two points:

- The AEMC should prefer cost-reflective prices because of their impact (at least in the medium term) on efficient consumption. For so long as the Snowy Region exists in its present form, the AEMC should not assess the impact of proposals on prices in the Snowy Region. As there are no consumers in the Snowy Region, there are no efficiency gains from cost reflective pricing. The AEMC should of course consider the impact of proposals on prices in New South Wales and Victoria, including through their effect on bidding incentives for generators located in the Snowy Region; and

- The regional pricing arrangements in the NEM create an infra-marginal rent for all generators whose SRMC is below SMP. However, it would be mistaken to regard prices above SRMC as inefficient. Rather, periods when prices exceed SRMC provide a price signal for market entry, and enable generators to recover their capital costs and ensure financial viability. Assessment of price impacts therefore needs to be undertaken with an understanding of market design.

Facilitation of trading in the NEM

The Statement of Approach refers to facilitation of trading in the NEM, including inter-regional trading. The AEMC's draft Rule determination on the Southern Generators proposal also states that it will consider the extent to which the proposal enhances the opportunities for inter-regional trading.

Snowy Hydro considers that this criterion addresses an important issue in the NEM, but may need to be expressed differently. Inter-regional trade is not desirable in itself. Rather, it is desirable if it leads to an increase in dispatch efficiency, or more cost reflective prices. There is no problem to be addressed if the lowest cost generators are running, and prices are at competitive levels, without inter-regional trade. As this illustrates, formulating the criterion as 'facilitation of trade' does not fully capture the issue.

Snowy Hydro considers that a better basis for assessment of proposals would be their impact on risk in the NEM. Aspects of the design of the NEM – including the gross pool, the energy-only market, and the regional framework – contribute to a high level of risk. Risk increases costs. There is a well established academic literature, and substantial practical experience, which shows that parties have to be compensated for bearing risk.

The risks faced by generators and retailers are largely adverse. One of the main ways of managing risk is through contracting between these two parties. Generators and retailers within a region do not face a basis risk due to price separation (other than through the impact of loss factors). This facilitates contracting within regions.

The regional structure of the NEM creates a basis risk when prices separate between regions. That price separation also creates settlement residues, and auction of rights to those residues assists with risk management.

The nature and level of risk from price separation, and the ability to manage it through SRAs or similar instruments, are affected by the approach to congestion management. As a result, assessing the impact of different proposals on risk is likely to involve assessing their impact on participants' ability to manage inter-regional price risk.

However, it would be a mistake to reduce this criterion simply to a consideration of the impact of proposals on the effectiveness of markets for hedging inter-regional price risk. The main way in which risk is managed in the NEM is through its regional structure. Most contracting is within regions, not between regions.

The greatest source of unmanageable risk in the NEM at present is the existence of the Snowy region, with substantial generation but no load. This exposes Snowy Hydro to a very high level of risk, as all of its output is exposed to basis risk from inter-regional price separation. Alternative approaches – and in particular the implementation of a boundary change which absorbed the Snowy region into New South Wales and Victoria – would substantially reduce the level of risk in the market.

In addition to creating a high level of inter-regional price risk, the existence of the Snowy region creates problems for the management of that risk which are effectively insoluble under the current regional framework. At present, southern generators face great problems in managing inter-regional price risk between Victoria and New South Wales, due to NEMMCO's practice of clamping. Under the Southern Generators proposal, this problem would simply be transferred to Snowy Hydro.

The AEMC should assess proposals, and options for the congestion management framework, on the basis of their impact on risk. This will entail consideration of the extent to which they expose participants to basis risk from separation between generator and retailer prices, and the extent to which they facilitate effective management of that risk.

Good regulatory practice

We agree with the AEMC's desire to promote good regulatory practice.

Investment efficiency

The congestion management framework and regional structure of the market have a major impact on efficiency. Market structure principally affects the efficiency of generation investment. Transmission investment is governed by regulatory rules designed to ensure efficiency, some of which are being considered by the AEMC.

The current regional boundaries, combined with the geographical location of the transmission network, create incentives for inefficient transmission investment. New investors can displace incumbent generation's access to transmission. This may result in profitable new investment, but no net increase in available capacity or benefit to consumers.

This problem is most acute when generators are competing for transmission access, but priced in different regions. The transmission network across the Snowy region creates a particularly sharp illustration. The 330 kV line through Dederang, Wagga and Lower Tumut goes from Victoria into the Snowy Region, into New South Wales and back into Snowy.

As a result, new generation at Wagga can displace Snowy Hydro generation on northward flows. Generation at Wagga can bid in low, confident it will receive the price at the New South Wales reference node. Snowy Hydro cannot compete in low bidding, since this would set the Snowy price. As TransGrid stated in its 2005 Annual Planning Report:

> *"At times when NSW is a heavy importer of power from the south the line ratings within the Snowy system and immediately north of Snowy may impose a limitation. The development of any generation in the south west of NSW (such as gas turbines in the Wagga area) will impose greater competition for the limited power transfer capability to the north. Such generation does not provide an effective increase to the net NSW generation at times where the transmission system is limiting."*

While we have focused on the Wagga plant to illustrate this point, other generation and transmission investments would have similar impacts.

This is a problem which may require broader consideration. However, it is particularly acute when the regional boundaries are poorly designed. An early change to the Snowy regional boundary would substantially reduce the risk of inefficient generation investment, by ensuring that new entrant generators compete on more level terms with incumbents for access to the transmission network.

Approach to modelling

We are separately providing comments on the discussion of modelling in the draft rule determination for the Southern Generators proposal. As general comments, we appreciate the AEMC's desire to use quantitative modelling to support its analysis, and recognise the complexity and difficulty in doing this. We consider that for short term proposals the modelling approach should assume constant contract positions. This means that modelled outcomes under the base case should be consistent with observed outcomes in the market. If they are not, there are evident errors in the modelling.

The AEMC's information disclosure statement of 15 June 2006 also sets out the approach to modelling analysis for regional boundary changes. We would make the following additional points:

- We are unclear why the AEMC is only considering the short to medium term benefits of a change to the Snowy region. The market requires some stability, and it would be desirable that longer term changes are established in this area of recognised priority

- When considering regional boundary change, the AEMC should ensure that the modelling outcomes are intuitively reasonable, and draw on the modelling in reaching its conclusions rather than basing its conclusions on the modelling. Modelling that allows for new generation investment will be more uncertain than short term modelling of dispatch outcomes, itself a difficult exercise.

- As discussed above, Snowy Hydro faces a significant risk from inefficient generation investments which would effectively displace Snowy Hydro generation capacity, due to the current regional boundaries. The AEMC has indicated that it will model the impact of "new investment in the most optimal network location". To be commercially realistic, and to fully capture this significant inefficiency from the current regional boundary, it is important that this modelling considers the optimal location from the point of view of maximising the profits for new investors, not from the point of view of minimising total system costs.

We would be happy to amplify any of the points in this letter if so desired by the AEMC.

Yours sincerely,

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