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Dr John Tamblyn  
Australian Energy Market Commission  
Level 5, 210 Elizabeth Street,  
Sydney, NSW, 2000

By email: [submission@aemc.gov.au](mailto:submission@aemc.gov.au)

Dear Dr Tamblyn,

#### **AEMC CONGESTION MANAGEMENT REVIEW – DRAFT REPORT**

The NGF appreciates the opportunity to provide feedback on the analysis and recommendations in the Commission's Congestion Management Review draft report.

Whilst the NGF would have liked to see different findings in relation to constrained-on payments for generators and transmission access, the suite of recommendations will deliver improved arrangements and processes for the management of congestion in the NEM.

The attachment to this submission provides the NGF's comments and suggestions in response to each of the recommendations. The NGF has given each recommendation due consideration and has attempted to provide constructive feedback on issues of relevance to generators.

Synergies Economic Consultants and ROAM Consulting were engaged by the NGF to undertake independent assessment of a number of issues for generators associated with congestion management. Reports from these consultants on market access and positive flow clamping are included in this submission for consideration by the AEMC.

If you have any questions in relation to the comment provided by the NGF please do not hesitate to call Mr. Tony Callan on (02) 9285 2712.

Yours faithfully,

John Boshier  
Executive Director

## AEMC CONGESTION MANAGEMENT REVIEW DRAFT REPORT RECOMMENDATIONS

### Recommendation 1 and 10 – Localised Spot Pricing and Transmission Pricing.

***Improvements to arrangements for negotiated transmission access to the node remain an outstanding issue for a number of generators. The NGF believes aspects of Rule 5.4A are ineffective and need to be improved.***

The Commission noted that outside the Snowy region there was little evidence of material and persistent congestion in the NEM. Previous submissions to the Commission by the NGF have expressed a different view point. In particular, the NGF has argued that current arrangements will not necessarily ensure emerging congestion is adequately managed and that some generators in the NEM have experienced issues associated with the ineffectiveness of current arrangements for negotiating levels of market access with network service providers.

Whilst there is a diversity of views within the NGF on the materiality of congestion in the NEM, there is agreement that Rule 5.4A Access Arrangements Relating to Transmission Networks should be strengthened. This Rule has proved ineffective and consideration needs to be given to strengthening current arrangements to allow generators to put in place workable access agreements with network service providers where required. One key improvement would be the provision of an arbitration process for disputes associated with terms and conditions of access agreements.

The NGF engaged Synergies Economic Consultants to consider the issue of market access and provide some suggestions for strengthening Rule 5.4A. Their report to the NGF is attached. The Synergies work clarifies the issues associated with Rule 5.4A and provides two potential solutions for the purpose of comparison – the Strong Model and the Weak Model.

At this stage the NGF would like to see a review of Rule 5.4A and the Synergies report provides a good starting point for discussion of possible ways to provide better certainty for generators seeking to negotiate a required level of market access.

### Recommendation 2 – Constrained-on Payment Regime

***Constrained-on payments to generators under constraint conditions would fairly compensate generators dispatched into higher priced offer bands. The NGF proposes a regime that provides some compensation whilst addressing the funding concerns.***

Constrained-on operation occurs when a Generator is called to operate when it would otherwise choose not to. A Generator's unwillingness to operate may be for operational, financial or strategic reasons.

### Limitations of AEMC Analysis

In the current framework, if a generator is required to generate when it would choose not to (i.e. it is constrained-on) for security and reliability reasons under a NEMMCO Direction, it will receive compensation based on a cost-based formula<sup>1</sup>. A generator may also receive compensation in the form of network support payments from a transmission network service provider (TNSP), which payments are contractually agreed in advance between the TNSP and generator. For all other circumstances payments are not made as a matter of course.

Although the Rules currently provide a basic framework for ensuring generators can be constrained to operate, the framework is seriously deficient in several respects, particularly in terms of the pricing and payment mechanisms. For example:

- there are no clear signals that indicate to generators the likely frequency and duration of constrained-on operation; and
- the price paid under the compensation arrangements does not reflect the true opportunity cost for the generator to supply.

This has important consequences that detract from the advancement of the long term interests of consumers. For example, generators (existing or prospective) are not provided with clear locational signals, so future investment is likely to be affected. It may also result in unwanted strategic behaviour which is none the less rational for generators. For example, generators might deliberately choose not to offer supply by either not entering a bid or entering bids close to or at the \$10,000 (VoLL) in order to ensure that if they are required to operate they will do so under a Direction from NEMMCO.

TNSPs are currently allowed to contract with generators to provide network support. This provides a modest degree of amelioration of the adverse long term economic consequences of the current deficient model for out-of-merit operation. However, the effectiveness of network support arrangements is also somewhat limited as:

- these arrangements are generally used by TNSPs to address network reliability, when the costs of a network augmentation outweigh the contractual costs of network support. As such they are not made generally available to generators for the purpose of managing the risk of being constrained-on. Moreover, even when they are utilised, the contractual duration is generally too short a period to elicit an efficient generation response;
- it is not clear that the distribution rents from such arrangements are efficient (in the sense that they do not offset the efficiency consequences of failing to reflect true marginal costs in pricing);
- there is the likelihood of contractual hold-ups as both generators and TNSPs who have sunk investments are poorly placed to negotiate good contracts; and

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<sup>1</sup> Section 4.8.9 of National Electricity Rules.

- there is limited transparency associated with the individual payments made to specific generators.

### **Constrained-on Payment Scheme**

Given the shortcomings of the current arrangements the NGF believes that an improved compensation scheme for generators based on generators making an election between two alternative compensation approaches – short run price (bid price) or long run price (LRMC) should be introduced for all constrained-on events.

The reason for allowing generators to choose between the two approaches is that the existing compensation arrangements for constrained on generators (where they either accept the prevailing spot price or generate pursuant to Directions) may be reasonable for peaking gas fired generators but in many situations will be inadequate. (such as for base load or hydro generators).

Under this approach every three to five years a generator would elect the method for compensation (compensation approach). Once this decision has been exercised it would only be under exceptional circumstances that a change would be permitted in the interests of regulatory certainty and transparency. Similar approaches have been applied in other international markets such as California<sup>2</sup>.

If a Generator selects the short run approach it would receive its bid price for each MWh sent out during that trading interval to relieve the congestion. This approach is the most efficient approach (in the absence of a true locational pricing framework) as the prices ultimately paid by consumers reflect the Generator's opportunity cost of being dispatched out-of-merit.

The AEMC notes that implementing a constrained-on payment may result in transitory market power being misused by constrained-on generators. While this is a possible outcome, when generators receive a level of compensation based on their bid or spot price, concerns about the potential for the misuse of market power should not be given preference over increased efficiency in dispatch or improved locational signals for investment.

When designing markets, the rules of operation of the market should seek to ensure that market participants reveal their opportunity costs and are compensated (if called upon to operate) accordingly. Rules that deal with participants whose revealed opportunity costs indicate a misuse of market power should sit outside of the detailed trading rules.

The issue of market power does not provide a reason to ignore the adverse consequences of constrained on payments being deficient. Rather the better approach is to address the limitations of market power as a specific measure. Ignoring this basic principle significantly increases the likelihood that markets will fail to advance the long term interests of consumers.

Market power issues can be (and are currently) effectively addressed through the current laws and regulatory measures. However if the potential risks are seen to be

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<sup>2</sup> In California, reliability must run generators (those that would be constrained-on) had the option of being paid on terms similar to LRAC or on terms that more closely reflected their short-run opportunity costs. This was a feature of both the pre and post crisis market structures given it was designed to deal specifically with constrained-on circumstances, worked well and was largely supported by industry stakeholders.

demonstrably greater than the status quo, consideration could be given to some additional targeted requirements as discussed below. These laws and regulations could be brought to bear if a constrained-on generator is demonstrably misusing market power.

These concerns could be mitigated through effective regulatory mechanisms, such as the following additional provisions:

- the current market monitoring responsibilities of the Australian Energy Regulator (AER) to be expanded to cover bids made by constrained-on Generators; and
- if the AER believes a Generator has exercised market power and/or believes the level of compensation paid for a particular constrain has been 'excessive' it should have the power to conduct a formal review and assign penalties where relevant (comparable to current NEL/NER provisions).
- Alternatively to the above point:  
Allow the AER to reasonable 'cap' the price or payments received by a generator when constrained-on.

The proposed compensation mechanism, which relies upon transparency and some of the existing regulatory measures (clarified if necessary to confirm their application to constrained on bidding behaviours) to manage the potential for the misuse of market power (e.g. market monitoring by the AER) but allows some signalling of the true economic costs of transmission congestion, will be markedly superior to the status quo.

If the Generator selects the long run approach it would receive its Long Run Average Cost (LRAC) of production. This approach is currently used by NEMMCO to provide compensation to generators directed to operate, in order to relieve network congestion.

The LRAC is calculated using the following formula:

$$\text{Variable Cost} + \text{Energy Generated (MWh)} * \frac{1000 * \text{Unit Fixed Costs (\$/kW/yr)} * \text{Registered Capacity (MW)}}{\text{Annual Generation (MWh/yr)}}$$

This approach has two key components – variable and fixed costs. The variable cost component represents the additional net direct costs the generator would have incurred as a result of being required to operate to alleviate network congestion. The second component represents a contribution to fixed costs based on new entrant pricing, whilst recognising the depreciated state of the generation asset. In terms of fixed costs, the above formula will provide the generator – if it is paid LRAC for all of expected annual generation – its actual direct costs of output and the annualised, depreciated fixed costs of the similar, notional new entrant.

Compensation would be paid for each MWh sent out to relieve the resultant congestion. This choice will further improve the overall efficiency of the system. It provides a further mechanism for generators to manage the risk of being constrained-on that, if chosen by the generator, is a superior reflection of the underlying economics of the transmission constraint.

This approach (through the short run approach) more closely reflects the basis of remunerating generators in the National Electricity Market that is, according to opportunity cost<sup>3</sup>. While LRAC pricing, under the long run approach, rarely reflects the generator's opportunity costs it will, compared to the status quo, result in a reduced level of overall market distortion.

The payment shortfall (level of compensation paid), under either of the possible approaches could be recovered through an uplift payment, preferably through TUOS. By recovering the payment shortfall via TUOS consumers located in the region will face the direct costs associated with alleviating current levels of network congestion, be that through network augmentations or constrained-on payments. Furthermore by explicitly recognising and pricing constrained-on payments, through a transparent mechanism, market participants will be able to make more informed and efficient locational investment decisions. This will in turn enhance the dynamic efficiency of the NEM which will clearly operate to promote the long term interests of consumers, notwithstanding the fact that the approach may cause a small increase in TUOS. This amount could be levied by NEMMCO on the relevant TNSP's who could recover the shortfall as an annual cost pass through, similar to the process currently used for network support payments.

Uplift payments may be volatile and could present risk issues for the TNSP's. To mitigate this risk, payment could be sourced from settlement residues or auction proceeds where there is a clear link to an interconnector. Where such a link does not exist, payments could be capped to minimise volatility. Where a constraint is consistently resulting in 'constrained-on' payments an obligation could be placed on the relevant TNSP to negotiate an appropriate network support agreement.

### **Recommendation 3,4,5 – Inter-regional Settlement Residues (IRSR).**

***The proposed changes to the IRSR arrangements will increase the 'firmness' and usefulness of these instruments and thus enhance competition across regional boundaries.***

The NGF believes that NEMMCO should minimise market intervention which is directed to achieving outcomes unrelated to system security and reliability. This is primarily due to the arbitrary nature of intervention and the resultant financial risks it creates for Market Participants.

Although participants can predict (to some level) when intervention may occur, it is not known for certain when and for how long NEMMCO will deliberately clamp power flows. This can have significant implications on market outcomes - efficiency of dispatch and prices - as it introduces additional complexity and uncertainty at times when interconnector constraints are binding and higher prices are likely to occur. Intervention also increases the level of uncertainty for Market Participants associated with the ability to use IRSR units as an interregional risk management tool.

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<sup>3</sup> The payment rule is that generators are remunerated at the opportunity cost of the marginal generator, as represented in the generators voluntary offer price.

The NGF therefore supports the AMEC's recommendation to increase the threshold for NEMMCO intervention, to limit the accumulation of negatives settlement residues, from \$6,000 to \$100,000. However, increasing the threshold for intervention will have little impact on the overall efficiency of market dispatch, prices or competitive pressures, if clamping eventually occurs.

The NGF is conscious that the clamping issues have emerged in response to concerns being expressed about the firmness of settlement residues. While interventionist measures such as positive flow clamping will 'firm-up' IRSRs, the NGF believes that the more appropriate response is to separate the funding issue from the market dispatch issue.

The NGF considers that the most efficient way to address the issue of negative settlement residues is to allow the market to operate without intervention in the form of clamping and to identify an alternative means to fund accumulated negative settlement residues.

A number of alternatives could be pursued to fund negative settlement residues. An uplift representing the total value of the residues could be applied to either wholesale energy prices or transmission prices. The uplift could be applied to prices (wholesale or transmission) in the importing region as consumers will benefit from the flow of cheaper energy. Alternatively, residues could be charged to generators. However due to the nature of the NEM it would be difficult to ascertain the level of liability to be assigned under a 'causer pays' framework. In terms of allocative efficiency and administrative simplicity an uplift payment levied on TNSPs would be preferred. An additional benefit of this type of model is that the true costs of problems caused by the simplified pricing model in the NEM would, to an extent, become more transparent. This will help identify efficient improvements in the pricing model. The proposal to discontinue the practice of netting off negative residues against positive residues within each billing week is therefore supported, as previously argued by the NGF, in favour of funding by the importing region TNSP (eg via auction proceeds).

In regard to the positive flow clamping proposal, ROAM Consulting was engaged by the NGF to consider the proposal from a market operations perspective and comment on the implications of implementing the proposal. It is clear from their analysis that there are a number of issues that would have to be resolved before the proposal is further considered. A summary report from ROAM is attached for the consideration of the AEMC.

### **Recommendation 6 and 7 – Constraint Equation Formulation**

***An independent review of existing constraint formulation processes is required to fully define the current concerns associated with a lack of process effectiveness and transparency. An arbitration process for constraint formulation disputes would further improve the existing process.***

Constraint equations can have a significant impact on the commercial performance of market participants and the efficiency of the dispatch process. Given the importance of constraint equations, market participants should be provided with sufficient information to understand NEMMCO's approach to constraint equation development,

formulation and implementation, to be able to assess the impact of constraints on dispatch and pricing and, if appropriate, challenge NEMMCO's assessments.

The NGF therefore supports the AEMC's recommendation for NEMMCO to develop constraint equation guidelines in consultation with stakeholders and the requirement for NEMMCO to adhere to the published guidelines. These measures will assist in providing market participants with a higher degree of transparency and predictability. However, due to the complexity of formulating constraint equations and the dynamic nature of the NEM further consideration should be given to the adequacy of this recommendation.

In particular, the NGF believes that the level of confidence market participants have in the dispatch process will be enhanced if the existing constraint equations and the constraint formulation process is subjected to a periodic independent review, to be performed by an expert. The NGF would prefer that the expert be appointed by an independent body such as the AEMC, but recognises that if this responsibility was inconsistent with the NEM governance structure, the review could be managed by NEMMCO.

The independent review would consider the development, formulation and implementation of the constraint equations.

The NGF believes that the key benefit of this approach is that in addition to transparency, it provides a formal approach to scrutinise the constraint formulation process as well as the appropriateness of the constraint equations themselves. In turn, this provides a vehicle for more informed analysis and debate of the process and its outcomes that is likely to be more accessible to market participants than just the publication of guidelines. Over time, it will also provide confidence to the market that the constraint equation guidelines are being observed in practice.

Accordingly, the NGF believes that an independent review of the constraint formulation development and implementation process is necessary to:

- facilitate a more informed debate about the constraint equation formulation process;
- provide a vehicle to improve the constraint development and implementation process; and
- thereby increase the confidence market participants have in the dispatch process generally.

The NGF believes that the first review of the constraint formulation and implementation process should precede the development of the constraint equation guidelines. This will ensure that the guidelines that are initially developed will have the benefit of the independent review and its outcomes.

Future reviews (perhaps conducted every 2 years) would then:

- test a geographically representative sample of constraint equations to ensure they have been formulated, developed and implemented in accordance with the constraint guidelines;



- comment on the appropriateness of the constraint guidelines and whether they will result in efficient dispatch; and
- produce a public report including recommendations.

### **Recommendation 8 and 9 – Information Resource**

***An enhanced congestion information resource must include information that assists participants to manage market risk and not be a resource burden on NEMMCO.***

The NGF is very supportive of the recommendation to develop an information resource to inform market participants on the nature and timing of constraints.

However, the nature of NEM operations is such that there is a very large volume of data associated with network constraints and unless the information resource is strictly targeted to the needs of market participants then there is a risk that the burden of maintaining the resource may well exceed its usefulness. To avoid this outcome an incremental approach to the development of the resource could be considered with the first step being the establishment of a resource that brings together existing data into a single easily accessible source. Information of limited value could then be stripped out of the database. Additional constraint related information can then be added to the resource to address clear data deficiencies and the needs of market participants.

In general, congestion related information falls into categories associated with time periods, that is;

- Real time
- Pre-dispatch period
- PASA time periods; and the
- Longer term.

For each time period, information could include (where appropriate);

- Identification of potential congestion events;
- The consequences of the congestion on market operations;
- The potential need for network support, or transmission augmentation; and
- The implication for an individual generator's physical access.

In relation to the real time data, there would be some benefit for market participants to have access to real time transmission flow data, transmission equipment that is out of service and equipment rating changes. The NGF acknowledges that there are some concerns associated with the publication of real time generation dispatch data that would need to be fully considered as part of the consultation process.

For the longer term, the information resource will need to clearly identify with sufficient notice the potential for transmission augmentation or regional boundary change. To a large extent much of this information is already available from a

number of sources. That is why the NGF suggests the first step of this initiative should be to access what information is currently available, assess the value of the information, and then bring the valuable information together into an easily accessible, and preferably single, source.

As mentioned earlier, the NGF supports a review the effectiveness of the Rule 5.4A. An improved process attached to the timing and siting of new generation, and provision of adequate access, requires an information resource that includes information on network injection capability at key locations across the NEM.

A number of jurisdictions do provide this information and whilst the NGF acknowledges that a single number does not exist for a specific location an indication of an indicative range of injection capabilities for system normal and agreed system conditions is possible. Over time and depending upon the planning work to be undertaken by the proposed National Transmission Planner, estimates of the cost of network augmentation to increase injection capability could be included to provide new generators with an additional locational signal, which depending on the prevailing transmission pricing arrangements, could be used to deliver more efficient (from a NEM perspective) investment decisions.

The NGF looks forward to working closely with NEMMCO and other stakeholder to develop the constraint related information resource.