

**NEM: REGION STRUCTURE REVIEW  
CONSULTATION**

**Response to CRA Report on  
NEM- Transmission Regional  
Boundary Structure**

12 November 2004

*This submission represents the views of the following Generator, Retailer and Transmission Network Service Provider organisations:*

AGL, Delta Electricity, Loy Yang Marketing Management Company, Macquarie Generation, Stanwell Corporation, Yallourn Energy, Powerlink Queensland and TransGrid.

# NEM- Transmission Regional Boundary Structure

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# Executive Summary

## INTRODUCTION

This submission represents the views of a group of Generator and Retailer market participants, comprising AGL, Delta Electricity, Loy Yang Marketing Management Company, Macquarie Generation, Stanwell Corporation and Yallourn Energy and Transmission Network Service Providers Powerlink Queensland and TransGrid (also, “the Group”).

CRA’s report for the MCE dealt with a number of inter-related transmission and market operation issues in the NEM:

- the formulation of constraint equations;
- the criteria for setting future regional boundaries; and
- the management of residual intra-regional congestion outside regional boundary reviews.

## CRA PROPOSALS

### Constraint equations

CRA supported the use of a direct physical representation (DPR) or “fully optimised” form of constraints (option 4/5) to all network constraints. Recommendation 1 of the CRA report is to amend the Code to confirm this and recommendation 2 requires NEMMCO to review whether a full network model is necessary in order to meet its obligations for system security.

Under the option 4/5 representation of constraint equations, some generators may have incentives to bid below their short run marginal cost of production (SRMC) where intra-regional constraints bind. CRA argues that the form of the general constraint equation should not be modified to prevent or deter distorted bidding. Rather, recommendation 3 of the CRA report is to refer such behaviour to the relevant (competition) authorities. If deemed necessary, NEMMCO could continue its practice of limiting network transfers. Further, the intra-regional pricing regime proposed below could help manage this problem.

### Regional boundaries

CRA noted that, “At a practical level... the regional structure of the NEM has not presented an obstacle to broadly efficient investment.” This provides the context for this review.

The CRA report noted that there were benefits and costs involved in creating or altering regional boundaries. The benefits were improving the efficiency of dispatch and promoting efficient investment decisions. The costs involved both:

- one-off transitional costs, such as amendments of existing contractual arrangements and settlement systems; and

- ongoing additional trading costs due to changes in liquidity and market risks, leading to a higher cost of capital.

These benefits and costs could only be estimated in a very approximate manner. Consequently, it was very difficult to set a threshold for amending regional boundaries.

CRA suggested a number of criteria, which were embodied in their recommendation 5:

- an increase in dispatch efficiency of at least a net \$1 million per annum; or
- a change in locational price indicators sustained over the review cycle in excess of levels to be published annually that would provide indicative investments in generation plant an increase in annual revenue of 25% of reasonable new entrant cost for each [year?].

At the same time:

- no region shall have a maximum demand of less than 200 MW; and
- a separate region shall not be created where in the reasonable opinion of the relevant authority there is little scope of market-based investment within the review period.

Recommendation 6 provides that NEM boundaries should be established for a 5 year period commencing no earlier than 3 years after the date of the final determination.

CRA's recommendation 7 provided for more information to be available to potential investors concerning likely congestion, shadow prices and possible network augmentations.

Recommendation 8 was based on promoting consistency between the application of the ACCC's Regulatory Test and NEM boundary reviews.

### **Intra-regional congestion**

In light of the fairly rigid process for regional boundary change, CRA proposed a regime for selective intra-regional pricing and contracting to deal with intra-regional congestion that was not persistent enough to warrant a regional boundary change.

CRA acknowledged that an intra-regional pricing regime would be a major step in the evolution of the NEM and should be progressed cautiously. Therefore, CRA proposed that the MCE make an in-principle decision to selectively price intra-regional congestion (recommendation 4). CRA's report provided a description of constraint support pricing (CSP) and constraint support contracts (CSCs) that could be used as a basis for this development. Recommendations 9 and 10 supported these proposals.

## GROUP RESPONSE

### Constraint management

It is acknowledged that the ‘naked’ Option 4 formulation can provide potentially distortionary incentives on certain generators under constraint conditions. In existing Option 4 implementations, distortionary incentives are addressed by a crude form of counter-price flow (CPF) management. NEMMCO takes action to eliminate CPFs when they appear in pre-dispatch or when they appear as a result of a market event. However, a more robust and transparent approach to reducing the occasional CPF outcomes of Option 4 could be achieved by implementing a ‘look forward’ NEMDE run. This approach will significantly address the shortcomings of the current Option 4 implementation and provide a consistent and workable long term solution to constraint management.

### Regional boundary criteria

CRA’s proposed regional boundary criteria are not based a robust analytical framework. With respect to the \$1 million dispatch efficiency benefit criterion, no justification was provided for this particular threshold. In this respect, the CRA summary report does not take the debate on regional boundary criteria any further than the Firecone report for the MCE, which suggested that it would be preferable for the boundary criteria to be based on the cost of constraints rather than the hours.

The price change and demand criteria are similarly arbitrary and not even based on an explicit cost-benefit rationale.

Perhaps the most concerning of all the proposed regional boundary criteria is the effective veto of the ‘relevant authority’ (presumably NEMMCO or the AEMC) over a regional boundary change where it believes there is little prospect of market-based investment over the review period. This criterion effectively puts the authority in a central planner position.

A much better way to set criteria for regional boundaries is to use the cost-benefit framework developed under the ACCC’s Regulatory Test. This framework has been applied in several cases and is now reasonably well understood by the market. Furthermore, application of such a framework reflects the fact that transmission infrastructure investment and regional boundary change are both methods of dealing with the same underlying problem of network congestion.

The alteration or creation of a regional boundary in the NEM is often associated with a number of costs. Some of these are readily quantifiable but many others are not. Therefore, in order to ensure an overall net benefit results from a boundary change after taking account of all costs, we propose that over the relevant minimum period (eg 5 years):

- a *new region proposal* be required to lead to a minimum quantifiable net market benefit of \$10 million; and

- a *change to an existing regional boundary* be required to lead to a minimum quantifiable net market benefit of \$5 million.

The cost-benefit framework for creating a new regional boundary should also apply to the potential for eliminating a region. However, there is a case for adopting a different net benefit threshold for eliminating a region compared with creating a new region. While eliminating a region is likely to cause a disruption to trading activities – a cost that is difficult to quantify – it is also likely to reduce unquantifiable trading costs in the longer run. On balance, the unquantifiable cost of the short-term disruption should be at least offset by the longer-term unquantifiable benefit of fewer regions. Therefore, the criterion for elimination of a region should be a simple positive net market benefit (ie >\$0).

The Group agrees with CRA’s observation that the frequency of regional boundary reviews and change must strike a balance between efficacy and market disruption. The regional boundary change process should work as follows:

- ANTS should trigger the review process (by end of year 1);
- the review should be based on a forward-looking snapshot of the entire NEM, taking into account proposed transmission and other projects;
- the decision to change a boundary should come into effect (end of year 5) no less than 3 years after the decision has been made (end of year 2); and
- the review process should be cyclical with the result that any change will be in effect for a minimum of 5 years.

## CSP/CSC proposal

The key rationales for an intra-regional pricing and contracts regime appear to be that it:

- provides more refined locational price signals;
- while allowing:
  - regional boundaries to change infrequently; and
  - avoiding the price volatility and risks of the nodal pricing and FTR approach.

Clearly, a prerequisite of developing a new intra-regional pricing and contracting regime is that there are net benefits from doing so. In fact, CRA itself states that:

“A threshold question, however, is whether *any* mechanism to create commercial incentives to assist in managing intra-regional congestion is needed.” [emphasis added]

It is not clear that this threshold is met, given the observed similarity between nodal and regional prices.

Even assuming that there would be a net benefit in introducing intra-regional pricing, the question becomes whether a CSP/CSC regime would yield greater benefits than a revised and more frequently-applied set of regional boundary criteria.

The CSP/CSC proposal raises very similar and potentially even more controversial issues as an increase in the number of regions or nodal pricing, none of which were resolved in the CRA report. For example, similar allocation issues and commercial impacts arise for CSCs as for the allocation of FTRs or IRSRs. Given these similarities, it is unclear why CRA recommended that CSP/CSC development and allocation should be applied so flexibly when CRA also recommended long lead-times and terms for the alteration of regional boundaries and associated IRSRs or FTRs.

CRA's proposal also raises a raft of problematic governance issues that were left unresolved. In particular, it is likely to be undertaken by NEMMCO, the AEMC or the AER, bodies without direct accountability to the market.

The Group believes that the primary mechanism for managing significant network congestion in the NEM is, and should continue to be, the alteration of regional boundaries. Given a robust set of boundary change criteria along the lines discussed above, the management of intra-regional congestion should reduce to a second- or third-order issue. For this magnitude of problem, the Group considers that the Option 4 constraint representation with CPF restriction will achieve a workable solution.

The Group's position is that the Option 4 with CPF restriction proposal be given a period of at least 12 months to prove its effectiveness and any decision made to progress CRA's proposal, should only be on the basis that:

1. The CSC allocation methodology is clarified and supported by both jurisdictions and the market;
2. The test for implementing the scheme is the same net market benefit test as applies to transmission investment and that the Group has recommended for considering a regional boundary change; and
3. The nature and governance of the authority responsible for implementing and operating the scheme is determined and agreed by both jurisdictions and the market.

The material Tumut-Murray constraint can be addressed by a Snowy regional boundary review immediately upon acceptance by the MCE of the Group's proposed boundary change criteria.

## **Information**

Any scheme that attempts to manage network constraints must be linked with the provision of comprehensive and accurate information to market participants.

CRA's proposal for more readily available information pertaining to the likely evolution of congestion is something that is already earmarked to be covered by the ANTS as of 2005.

The proposal for broad indications of possible network augmentations that would pass the Regulatory Test is inappropriate. There is a real question over who could and should provide such broad indications. TNSPs already provide annual planning documents for the market's consideration that will provide some of this information in any event.

The routine reporting of shadow prices is a sound proposal. NEMMCO could report the data on a weekly basis via its website in a similar manner to current price data reporting.

The concept that a linkage between the existing ACCC Regulatory Test and NEM boundary reviews is sensible in principle but unworkable in practice. The Regulatory Test is applied to network augmentations on an as-needs basis. However, CRA has recommended (and the Group has agreed) that boundary review processes follow a five-year cycle, like a TNSP regulatory review cycle.

## CONCLUSION

The management of intra-regional congestion in the NEM has been a controversial issue over the past few years. While the degree of overall market inefficiency resulting from the present state of affairs has probably been relatively small, constraint management raises significant commercial issues for particular participants.

In the view of the Group, significant intra-regional congestion that causes inefficiency should be dealt with under the regional boundary criteria. These criteria should be amended so that they are based on the same cost-benefit framework applied in the ACCC's Regulatory Test. Once adequate criteria have been formulated to deal with the major constraints, the need for ongoing hand-wringing over intra-regional constraint formulation should ease and a simpler approach to the remaining constraints should be possible.

To this end, the Group has proposed a simple Option 4 with counter-price flow enhancement to deal with persistent intra-regional constraints that are not sufficient to trigger a regional boundary change. This solution, while not perfect, at least represents a compromise that the participants of this Group can support. If such a solution is implemented, we consider that there will be no need to devote more of the market's resources into the further development of CRA's incomplete and problematic CSP/CSC proposal.

The Group's position is that the Option 4 with CPF restriction proposal be given a period of say 12 months to prove its effectiveness and any decision made to progress CRA's proposal, should only be on the basis that:

1. The CSC allocation methodology is clarified and supported by both jurisdictions and the market;
2. The test for implementing the scheme is the same net market benefit test as applies to transmission investment and that the Group has recommended for considering a regional boundary change; and
3. The nature and governance of the authority responsible for implementing and operating the scheme is determined and agreed by both jurisdictions and the market.

The material Tumut-Murray constraint can be addressed by a Snowy regional boundary review immediately upon acceptance by the MCE of the Group's proposed boundary change criteria.

# 1 Introduction

## 1.1 BACKGROUND

This submission has been prepared by a group of Generator and Retailer market participants, comprising AGL, Delta Electricity, Loy Yang Marketing Management Company, Macquarie Generation, Stanwell Corporation and Yallourn Energy as well as Transmission Network Service Providers Powerlink Queensland and TransGrid (also, “the Group”) in response to the recommendations contained in CRA, “NEM – Transmission Region Boundary Structure, Consultation Draft”, September 2004 (CRA summary report).

The CRA summary report sought to address two primary matters:

- the criteria for setting future regional boundaries for price regions; and
- the representation of the technical characteristics of transmission networks used by NEMMCO in its processes to manage network congestion that is the prime cause of differences in price between the regions.

The terms of reference for CRA were:

- review and develop proposed regional boundary criteria and means of managing network congestion consistent with the policy set by the MCE;
- develop options on a mechanism for changing wholesale regional boundaries or other means of *transparently* and *consistently* managing network congestion in the NEM;
- recommend a revised mechanism for wholesale regional boundaries and criteria, having regard to policy objectives; and
- provide a basis to enable the Australian Energy Market Commission (AEMC) to implement a revised mechanism for wholesale regional boundary changes.

## 1.2 CRA’S KEY FINDINGS

### 1.2.1 Constraint equations and distorted bidding

The CRA summary paper and numerous other CRA papers have supported the use of a direct physical representation (DPR) or “fully optimised” form of constraints (option 4/5) to all network constraints. Recommendation 1 of the CRA summary report is to amend the Code to confirm this and recommendation 2 requires NEMMCO to review whether a full network model is necessary in order to meet its obligations for system security.

Under the option 4/5 representation of constraint equations, some generators may have incentives to bid below their short run marginal cost of production (SRMC) where intra-regional constraints bind. These incentives arise due the interaction of the constraint equation with the price-setting algorithm and settlement rules. Specifically, a generator that is located on the far side of an intra-regional constraint will not be able to influence the price at the regional reference node (RRN). Therefore, so long as the generator is willing to generate

at the price prevailing at the RRN, it has an incentive to bid as low as possible in order to be selected for dispatch. Consequently, we sometimes observe bidding by such generators as low as -\$1000/MWh.

CRA characterises such bidding variously as “disorderly market behaviour where participants exploit what are in effect loopholes in market rules”<sup>1</sup> and “the exercise of short-term market power through the prices and bids that may emerge during times of congestion”.<sup>2</sup>

CRA argues that the form of the general constraint equation should not be modified to prevent or deter distorted bidding. Rather, recommendation 3 of the summary report is to refer such behaviour to the relevant (competition) authorities. If deemed necessary, NEMMCO could continue its practice of limiting network transfers. Further, the intra-regional pricing regime proposed below could help manage this problem.

### 1.2.2 Regional boundaries

CRA then dealt with regional boundary criteria and found that, “At a practical level... the regional structure of the NEM has not presented an obstacle to broadly efficient investment.” A caveat was added that there may be “more subtle adverse effects that may not yet have become apparent.”<sup>3</sup> This was notwithstanding the fact that there have been no regional boundary changes since the start of the NEM. CRA went on to observe that if the current Code criteria for regional boundaries were applied and changes implemented, this “would imply frequent boundary changes in response to congestion that may only be of a transient nature.”<sup>4</sup>

The CRA summary report noted that there were benefits and costs involved in creating or altering regional boundaries. The benefits were improving the efficiency of dispatch and promoting efficient investment decisions.<sup>5</sup> The costs involved both:

- one-off transitional costs, such as amendments of existing contractual arrangements and settlement systems; and
- ongoing additional trading costs due to changes in liquidity and market risks, leading to a higher cost of capital.

These benefits and costs could only be estimated in a very approximate manner. Consequently, it was very difficult to set a threshold for amending regional boundaries. One option was to evaluate each potential change on a case-by-case basis. CRA noted that this would default to a least-cost expansion plan solution, which they believed “would not be consistent with the role of the regulatory

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<sup>1</sup> CRA Summary Report, page 16.

<sup>2</sup> CRA Summary Report, page 18.

<sup>3</sup> CRA Summary Report, page 17.

<sup>4</sup> CRA Summary Report, page 45.

<sup>5</sup> CRA Summary Report, pages 15-16.

authorities within a decentralised market such as the NEM.”<sup>6</sup> Instead, CRA suggested a number of criteria, which were embodied in their recommendation 5:

- an increase in dispatch efficiency of at least a net \$1 million per annum; or
- a change in locational price indicators sustained over the review cycle in excess of levels to be published annually that would provide indicative investments in generation plant an increase in annual revenue of 25% of reasonable new entrant cost for each [year?].

At the same time:

- no region shall have a maximum demand of less than 200 MW; and
- a separate region shall not be created where in the reasonable opinion of the relevant authority there is little scope of market-based investment within the review period.<sup>7</sup>

Recommendation 6 provides that NEM boundaries should be established for a 5 year period commencing no earlier than 3 years after the date of the final determination.

CRA’s recommendation 7 provided for more information to be available to potential investors concerning likely congestion, shadow prices and possible network augmentations.

Recommendation 8 was based on promoting consistency between the application of the ACCC’s regulatory test and NEM boundary reviews.

### 1.2.3 Intra-regional contracting/pricing

In light of the fairly rigid process for regional boundary change, CRA proposed a regime for selective intra-regional contracting and pricing to deal with intra-regional congestion that was not persistent enough to warrant a regional boundary change. The regime would seek to provide locational price signals to generators to create additional incentives for economically efficient behaviour. The CRA summary report also noted the scope for such a selective regime to manage ‘inappropriate’ bidding behaviour.

CRA acknowledged that an intra-regional pricing regime would be a major step in the evolution of the NEM and should be progressed cautiously. A great deal of further work would be required by NEMMCO, the ACCC and possibly NECA or their successor institutions. Therefore, CRA proposed that the MCE make an in-principle decision to selectively price intra-regional congestion (recommendation 4). CRA’s summary report provided a description of constraint support pricing (CSP) and constraint support contracts (CSCs) that could be used as a basis for this development. Recommendations 9 and 10 supported these proposals.

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<sup>6</sup> CRA Summary Report, page 46.

<sup>7</sup> CRA Summary Report, page 49.

### 1.3 GENERAL COMMENT

Overall, the CRA summary report and supporting documents are not well structured and explained. The summary report moves from regional boundary/constraint management issues to retail issues to regional boundary criteria and then returns to constraint management, without a clear framework. This makes it difficult to understand the logic and reasoning behind particular recommendations. As clear from this submission's structure outlined below, the summary report's disjointed structure means that its recommendations are best discussed out of their original order. Furthermore, extensive references are made to previous CRA reports that were developed for NEMMCO. This is not a satisfactory approach for a report with the potential implications for market participants and efficiency that the CRA summary report has.

### 1.4 STRUCTURE

This submission is structured as follows:

- Section 2 addresses recommendations 1 and 2;
- Section 3 addresses recommendation 3;
- Section 4 addresses recommendations 5 and 6;
- Section 5 addresses recommendations 4, 9 and 10; and
- Section 6 addresses recommendations 7 and 8.

## 2 Constraint equation representation

### 2.1 CONSTRAINT FORMULATION

CRA recommendation 1 states that:

*“On the basis that no change to the current economic objective of the five-minute spot market dispatch process is made, NEMMCO should apply the Direct Physical Representation (DPR, or “fully optimised”) form of constraints (Option 4/5) to all network constraints. The Code should be amended to confirm this.”*

### 2.2 COMMENTS ON RECOMMENDATION

A consistent application of the fully optimised form of constraint formulation (known as Option 4) with counter price flow management is supported.

### 2.3 GROUP’S PROPOSAL: ENHANCEMENT TO OPTION 4 FORMULATION

The derogation for the Snowy intra-regional constraint is an Option 4 implementation with counter price flow (CFP) management. Presently, NEMMCO manages counter-price flows by taking action to eliminate them when they appear in pre-dispatch or when they appear as a result of a market event. To ensure counter price flows are managed in a consistent and transparent fashion it is recommended that an enhanced ‘look forward’ approach be implemented in the NEM dispatch engine as shown in the following diagram.

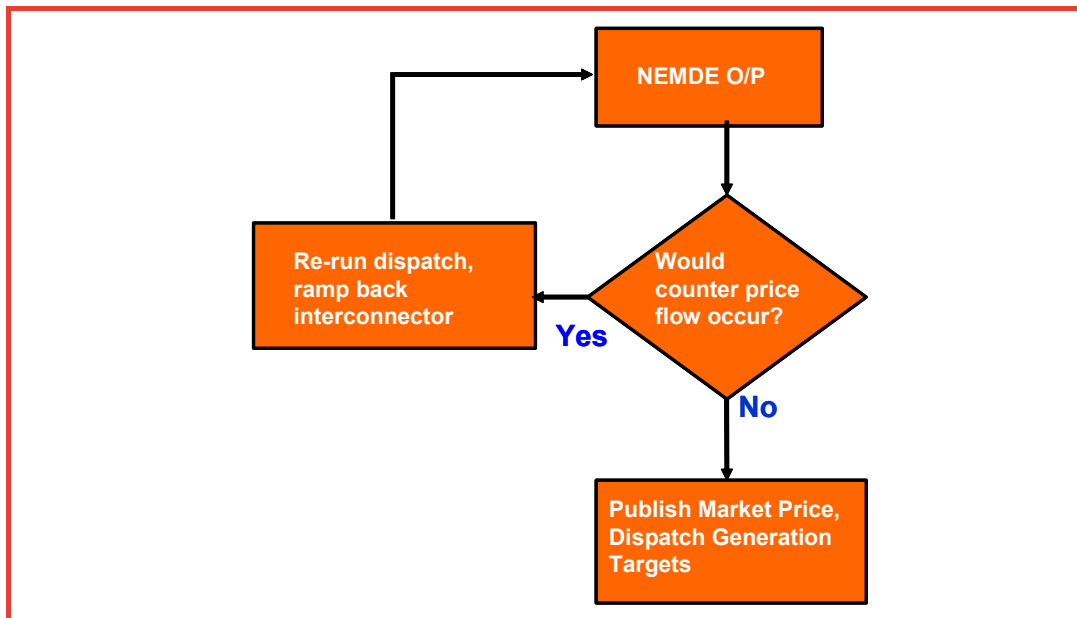


Figure 1: Enhancement to Option 4 constraint formulation

The proposed occasional double run of the NEM dispatch engine (NEMDE) should eliminate counter price flows without manual intervention by NEMMCO. It is the understanding of the Group that the operating speed of NEMDE is sufficient for this approach to be feasible.

It is also recommended that the implementation of an Option 4 formulation across the NEM include the equalisation of near identical constraint equation coefficients to avoid inappropriate and perverse constraint outcomes on generators.

The benefits of this proposal are:

- no counter price flows due to ‘disorderly’ bidding;
- no complexities for market participants to manage;
- equalisation of close equation coefficients to eliminate unfair dispatch outcomes; and
- can be consistently applied across the NEM.

The proposed Option 4 enhancement will significantly address the shortcomings of current Option 4 implementations.

## 2.4 FULL NETWORK MODEL

CRA recommendation 2 states that:

*“Following resolution of the form of the constraint equation NEMMCO should review full network model if it believes it is necessary in order to meet its obligations for system security.”*

## 2.5 COMMENTS AND GROUP’S PROPOSALS

The nature and purpose of a full network model is an unknown quantity. To date, NEMMCO has not clearly defined just what a full network model would mean to constraint management.

A review of a full network model is not supported because Option 4 was in part proposed by NEMMCO for system security issues. If the NEM was to ever see regional loop flows, then the operation of the Option 4 implementation would need to be reviewed at that time with knowledge of the exact changes to the NEM structure. With an appropriate counter price flow management regime there is no existing need for a full network model to be implemented.

## 3 ‘Disorderly’ bidding

### 3.1 IMPLICATIONS OF DISORDERLY BIDDING

Certain types of generator bidding that may follow from the binding of an intra-regional constraint may reduce the efficiency of dispatch. This is because the generators that bid below SRMC in order to get selected for dispatch may or may not have lower production costs than the generation that is displaced (which may be through an interconnect). Therefore, such bidding may result in reduced economic surpluses in the market.

### 3.2 CRA RECOMMENDATIONS

As noted in section 1, CRA’s preferred response to opportunistic bidding that can arise where an intra-regional constraint binds is to refer it to competition regulators. Recommendation 3 spells this out.

In addition, recommendation 3.1 provides for NEMMCO to continue to constrain network transfers in the short term to preserve settlement residues and 3.2 notes that the proposed intra-regional pricing/contracting regime would help manage such bidding where major network loops came into existence.

### 3.3 COMMENT ON RECOMMENDATIONS

The question is whether such ‘disorderly’ bidding is properly regarded as an exercise of market power. Market power generally refers to an ability to ‘give less and take more’. However, what is happening in these situations is that the generator is ‘giving more, saying it will charge less and then actually charging more’. Moreover, a generator will have incentives to engage in this sort of behaviour whether one or 100 generators are located in the same sub-region or area – in other words, an increase in the number of competitors would not relieve the problem; in fact, it would worsen it. Therefore, it is questionable whether this behaviour constitutes an exercise of market power, at least in its commonly used meaning.

For clarification, the ACCC’s approval of NECA’s rebidding Code changes did not follow directly from its enforcement of the part IV competition provisions of the Trade Practices Act, but rather from the Code requirement that virtually all Code changes are to be authorised by the ACCC.<sup>8</sup> Therefore, simply ‘referring disorderly bidding’ to the ACCC is unlikely to result in any control over this behaviour unless accompanied by a relevant Code change proposal. Even then, as with the rebidding Code changes, the ACCC is likely to be reluctant to intervene in participant bidding behaviour that does not involve an exercise of market power for a proscribed purpose or anti-competitive agreements.

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<sup>8</sup> See Code clause 8.3.

If the good faith bidding provisions in clause 3.8.22A are applied in a way that seeks to prevent disorderly bidding – by, for example, proscribing certain negative bids – this would represent a major behavioural intervention in the market and could create a great deal of uncertainty and dispatch inefficiency.

### **3.4 GROUP'S PROPOSALS**

The Group believes that disorderly bidding may lead to dispatch outcomes that are inconsistent with economic efficiency. However, it is incorrect for this bidding to be labelled an exercise of market power. Rather, the proposed formulation of constraint equations as discussed in section 2 should limit the market impact of disorderly bidding to acceptable levels, particularly when this is combined with a robust and consistently-applied set of regional boundary criteria. This point is elaborated upon in section 4 below.

## 4 Regional boundary criteria

### 4.1 CONSTRAINTS AND EFFICIENCY

The CRA summary report evaluates a number of ways forward for regional boundary criteria. It starts by acknowledging that according to empirical analysis and subject to some exceptions:

“...pricing outcomes from a full nodal model are not significantly different to those resulting from the current regional concept. Accordingly, there is not a *prima facie* case to argue that greater variability in price differentials between nodes would result in substantially different and better pricing signals.”<sup>9</sup> and

“Modelling has indicated that for the overwhelming majority of the time and for the foreseeable future, nodal spot prices in the NEM are not expected to differ materially from likely regional spot prices... At least at this point in time, there would therefore be no benefit, in terms of materially improved pricing accuracy in moving to a nodal spot pricing regime on the basis of spot prices alone.”<sup>10</sup>

It is worth recalling how efficiency benefits might arise from more refined locational pricing signals:

- dispatch (productive efficiency) – more refined prices could lead to lower-cost plant being dispatched ahead of higher-cost plant, so long as generators’ bids approximated their avoidable cost of dispatch;
- consumption (allocative efficiency) – consumers in the affected locations may alter their consumption levels as a consequence of differing local prices; and
- investment (dynamic efficiency) – potential investors in load, generation, MNSP and DSM projects may alter the timing and/or the location of their investments, which may increase the size of consumer and producer surplus in the longer run.

Importantly, if intra-regional congestion is low, the benefits of increasing the number of regions are likely to be commensurately small. This means that, assuming there are some costs from altering regional boundaries, which CRA recognises, it may not be worth altering regional boundaries even if this could improve the technical elegance or simplicity of dispatch. This provides the context for the discussion of CRA’s recommendations.

### 4.2 CRA RECOMMENDATIONS

CRA’s recommendation 5 seeks to capture some of the benefits outlined above. There is an explicit \$1 million per annum test for net dispatch efficiency gains and a locational price variation criterion that is intended to indicate a level of price difference where dynamic efficiency gains could arise. Both of these criteria are subject to additional conditions on the minimum maximum demand within a

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<sup>9</sup> CRA Summary Report, page 23.

<sup>10</sup> CRA Summary Report, page 34.

region and where the authority (NEMMCO?) believes that there is little prospect of market-based investment within the review period.

CRA's recommendation 6 places minimum time periods for introduction of regional boundary changes (3 years after the date of the final determination) and for the term of regional boundaries (5 years).

### 4.3 COMMENTS ON RECOMMENDATIONS

There are a number of problems with the CRA criteria.

#### 4.3.1 One million per annum dispatch gains

The CRA summary report notes that it is difficult to set a threshold for regional boundary change because of the difficulty of calculating both benefits and costs. CRA goes on to say that because of this, it has focussed on review periods, minimum region size, minimum 'value' from the change and minimum price differences. Then, 'out of nowhere', as it were, CRA comes up with the \$1 million per annum figure 'to ensure a clear benefit is obtained', while at the same time conceding that the level of benefit is a matter of judgement.

No justification is provided for the \$1 million per annum figure. There is no discussion of an appropriate methodological approach to use to derive the cost or benefit numbers that go towards a net benefit calculation. In this respect, the CRA summary report does not take the debate on regional boundary criteria any further than the Firecone report for the MCE, which suggested that it would be preferable for the boundary criteria to be based on the cost of constraints rather than the hours.<sup>11</sup>

In addition, the CRA summary report does not suggest the need for scenario or sensitivity analysis to ensure a robust net benefit in a reasonable variety of circumstances. This will become more relevant the larger are the absolute values of the benefits and costs to be considered. For example, if costs are \$39 million per annum and benefits are \$40 million per annum, one might be less inclined to implement a change than if costs were \$0.1 million and benefits were \$1.1 million. Further, given that regional boundary change may impose some one-off costs, it is not clear what would be the result if a change led to estimated net costs in its first year but significant net benefits in later years.

Finally, the \$1 million per annum criterion related to "a transmission connection point" instead of to a change to a regional boundary. The logical inference from this wording is that where a proposed regional boundary change affects more than one transmission connection point, a separate analysis must be conducted for each point. This would be extremely wasteful and highly contrived where the benefits and especially the costs were attributable to the overall change rather than a particular connection point.

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<sup>11</sup> Firecone, *Regulatory and Institutional Framework for Transmission, Final Report*, November 2003, page 70.

### 4.3.2 Price changes

The criteria for a minimum price change is based on what would provide an arbitrary 25% change in revenue for a hypothetical new entrant. This appears to be an attempt to reflect the type of price change that could affect locational decisions and promote increases in dynamic efficiency. However, no justification is provided for why 25% is an important level, rather than 5% or 50%. Furthermore, this criterion is an alternative to, rather than a condition on, the criterion requiring a \$1 million per annum net dispatch efficiency benefit. This suggests that a regional boundary could change even if it would create a net dispatch benefit of less than \$1 million per annum, so long as there was a sufficient estimated price change. As noted in section 4.4.1 below, a better approach would be to apply a general cost-benefit framework similar to the ACCC's Regulatory Test, so that wherever benefits arose – whether in lower-cost dispatch (static efficiency) or better locational decisions (dynamic efficiency) – they would be treated in the same way and would provide an equal justification for changing a regional boundary.

### 4.3.3 Minimum maximum demand criterion

The proposed minimum maximum demand criterion of 200 MW could be seen as a quantification of the current requirement for a region to include at least one significant load or generation centre.<sup>12</sup> The purpose of this new criterion is to ensure that, together with the price change criterion, there is a 'minimum value' effect from a change.<sup>13</sup> However, as with the price change criterion, it is difficult to see why it is necessary to have an independent requirement for region size if net economic benefits arise. For example, it may be efficient to create a new small region that was connected to the rest of the market by a congested line if this would encourage new generation investment in that small region rather than elsewhere.

Moreover, the minimum maximum demand requirement is not linked to the price change criterion, meaning that it may not even guarantee a 'minimum value' effect if the driver of the regional boundary change is dispatch savings rather than large price changes.

### 4.3.4 Prospects for market-based investment

Perhaps the most concerning of all the proposed regional boundary criteria is the effective veto of the 'relevant authority' (presumably NEMMCO or the AEMC) over a regional boundary change where it believes there is little prospect of market-based investment over the review period. This criterion effectively puts the authority in a central planner position, which CRA elsewhere makes a point of arguing against.<sup>14</sup> Given that the proposed implementation period for a

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<sup>12</sup> Code clause 3.5.1(b)(2)(i).

<sup>13</sup> CRA Summary Report, page 47.

<sup>14</sup> CRA Summary Report, pages 46-47.

regional boundary change is 3 years and the change must be in place for at least 5 years, this criterion requires the authority to look ahead up to 8 years and make a judgement about the prospects for market-driven investment. Importantly, while such investment may be in the form of a discrete generation project, it may equally be in the form of a local DSM arrangement between a retailer or DNSP and one or more end-use customers.

### **4.3.5 Minimum time periods**

Recommendation 6 is that regional boundaries should be established for 5 year periods commencing no earlier than 3 years after the final determination has been made. This recommendation recognises the need for market certainty and advance warning regarding the future structure of the NEM as it pertains to contracting and investment behaviour. However, the recommendation fails to address issues such as what triggers the review process and what proportion of the NEM is put up for review.

## **4.4 GROUP'S PROPOSALS**

### **4.4.1 Cost-benefit framework**

A much better way to set criteria for regional boundaries is to use the cost-benefit framework developed under the ACCC's Regulatory Test. This framework has been applied in several cases and is now reasonably well understood by the market. Furthermore, application of such a framework reflects the fact that transmission infrastructure investment and regional boundary change are both methods of dealing with the same underlying problem of network congestion. Table 1 below sets out the general nature of the benefits and costs to be taken into account under the Regulatory Test. Note that the framework can factor in benefits arising from generator locational decisions to the extent that these decisions result in lower fuel, capital or transmission augmentation costs over time.

There are a number of computer simulation models now available that can estimate dispatch and pricing outcomes of the NEM over a number of years. Many of these models, if used correctly, can calculate most of the benefits and costs that could flow from a prospective regional boundary change. If this modelling is conducted properly, including consideration of relevant scenarios as required by the Regulatory Test, then there is much less need for the regional boundary criteria to include non-welfare-related caveats relating to minimum price changes and region size. At the same time, it is important to consider the likely liquidity of risk-management instruments that would need to accompany a new region. However, issues relating to the availability of contracts for new regions should be considered explicitly rather than through the use of arbitrary criteria such as minimum maximum demand for a region.

<b>Effect</b>	<b>Regional boundary change benefit</b>	<b>Regional boundary change cost</b>
<b>Fuel costs</b>	Savings in fuel costs caused by changes in dispatch patterns and the use of cheaper plant (e.g. fuel cost savings arising from the replacement of gas generation by coal generation)	Increases in fuel costs caused by changes in dispatch patterns
<b>Capital expenditure</b>	Avoided or deferred capital expenditure on generation and network assets, assuming demand does not change (e.g. better locational decisions may imply that new generation investment can be deferred)	Advancement of capital expenditure on generation and network assets, assuming demand does not change.
<b>O&amp;M costs</b>	Avoided O&M costs anywhere in the network	Additional O&M costs anywhere in the network
<b>Voluntary and involuntary load curtailment</b>	Reductions in voluntary and involuntary load curtailment (e.g. reductions in expected unserved energy)	Increases in voluntary and involuntary load curtailment
<b>Ancillary services</b>	Reductions in ancillary services costs	Increases in ancillary services costs
<b>Transmission losses</b>	Reductions in transmission losses	Increases in transmission losses
<b>Government policies</b>	Subsidies or other direct benefits to the electricity sector arising from Government policies	Taxes or other direct cost to the electricity sector arising from Government policies
<b>Competition benefits</b>	Increases in consumer and producer surplus created by changes to bidding patterns and consequent price reductions.	Reductions in consumer and producer surplus created by changes to bidding patterns and consequent price reductions.

Table 1: Benefits and costs

Source: ACCC Regulatory Test



#### 4.4.2 Regional boundary change thresholds

The alteration or creation of a regional boundary in the NEM is often associated with a number of costs. Some of these are readily quantifiable, such as one-off costs associated with amendments to IT trading and settlement systems. However, there are also one-off and ongoing costs that are difficult to quantify such as recontracting costs and ongoing trading costs due to changes in liquidity and market risks. These costs are intrinsically difficult to measure but must be considered in any set of boundary change criteria.

Therefore, in order to ensure an overall net benefit results from a boundary change after taking account of *all* costs, we propose that, under a range of different scenarios and over the minimum period of the change (eg 5 years):

- a *new region proposal* be required to lead to a minimum quantifiable net market benefit of \$10 million; and
- a *change to an existing regional boundary* be required to lead to a minimum quantifiable net market benefit of \$5 million.

The calculation of net market benefit would only include quantifiable costs and benefits, implying that unquantifiable costs would be less than \$10 or 5 million (as appropriate).

Across market participants as a whole, we do not believe that these thresholds represent an exaggerated view of unquantifiable costs that participants (and hence the market) are likely to bear from regional boundary change.

#### 4.4.3 Elimination of a region

The cost-benefit framework for creating a new regional boundary should also apply to the potential for eliminating a region. Given the ongoing costs of managing the existence of region, if there are few constraints between a region and others, it may be worth eliminating that region.

However, there is a case for adopting a different net benefit threshold for eliminating a region compared with creating a new region. While eliminating a region is likely to cause a disruption to trading activities – a cost that is difficult to quantify – it is also likely to reduce unquantifiable trading costs in the longer run as participants will have one less region to manage risk in respect of. On balance, the unquantifiable cost of the short-term disruption should be at least offset by the longer-term unquantifiable benefit of fewer regions.

Therefore, the criterion for elimination of a region should be a simple positive net market benefit (ie >\$0) over the minimum period of the change over a reasonable number of scenarios.

#### 4.4.4 Boundary change criteria

- regional boundary changes should be assessed within a cost-benefit framework similar to the existing ACCC Regulatory Test; and
- the threshold of such an assessment should vary according to the type of regional boundary change under consideration:
  - \$10 million quantified net market benefits for creation of a new region;
  - \$5 million quantified net market benefits for a change to an existing regional boundary; and
  - \$0 quantified net benefits for elimination of a region,
    - over a majority of reasonable scenarios over the minimum period of the change (5 years is proposed).

#### 4.4.5 Frequency of reviews and advance notice of change

The Group agrees with CRA's observation that the frequency of regional boundary reviews and change must strike a balance between efficacy and market disruption. The Group supports CRA's recommendation of a 5 year review period cycle, with 3 years' notice given for a regional boundary change, but believes that the concept needs some clarification.

The regional boundary change process should work as follows:

- the review cycle should be initiated by an identification of a potential or existing problem in the ANTS report (by end of year 1); Successive Region Boundary reviews will not be initiated at intervals shorter than 5 years.
- the review process, including full consultation, is expected to take approximately 1 year to perform at which time the decision to either modify or create a boundary will be made (end of year 2). The review should be based on a forward-looking snapshot of the entire NEM;
- a decision to change a regional boundary will come into effect no less than 3 years after it is made in order to give market participants a reasonable lead-time to effect the necessary procedural and contractual changes (end of year 5);
- once the change(s) have been realised they will remain in place for a minimum of 5 years (until end of year 10); and
- once new regional boundaries have been implemented, the review cycle will restart with a new review process beginning 1 year after the previous boundary change in response to network congestion issues identified in the relevant ANTS report (end of year 6).

This path is shown in Figure 2 below.

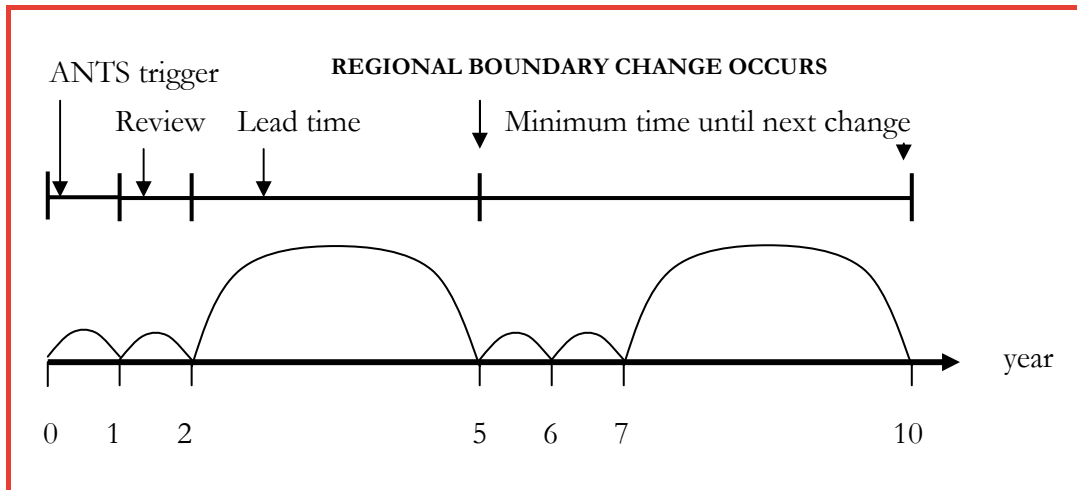


Figure 2: Timeline for review processes

#### 4.4.6 Review period proposals

- ANTS should trigger the review process;
- the review should be based on a forward-looking snapshot of the entire NEM, taking into account proposed transmission and other projects;
- the decision to change a boundary in the NEM should come into effect no less than 3 years after the decision has been made; and
- the review process should be cyclical with the result that any change will be in effect for a minimum of 5 years.

## 5 Intra-regional pricing

### 5.1 TRADE-OFFS BETWEEN REGIONAL BOUNDARY CHANGE AND INTRA-REGIONAL PRICING

A noted by CRA, the current NEM design embodied in the Code is based on periodic evaluations that may lead to adjustments to regional boundaries to reflect changing constraint conditions.<sup>15</sup>

In CRA's view, the current Code criteria, based on the 50-hour constraint rule, would lead to frequent boundary changes. For example, in CRA's view, if the criteria were applied to 2003 NEMMCO data, four boundary changes would have been necessary.<sup>16</sup> CRA argues that frequent boundary changes raise similar concerns for participants as would a move to a full nodal pricing market, namely, price volatility and hedging risks. Therefore, CRA proposes a less dynamic structure of regional boundaries coupled with intra-regional pricing using a CSP/CSC regime to help manage congestion within regions between regional boundary reviews. The summary report says that if constraints exceed a threshold (which is not stated), CSP and CSCs would be used on a case-by-case basis to manage the constraint and if the constraint got worse, a change to regional boundaries could be considered. CRA notes that the proposed CSP/CSC regime would have a similar but localised effect to nodal pricing in the spot market and that the contracts stabilise risk in a similar manner as FTRs.

Looking at the worked examples in Appendix B of the CRA summary report, it appears that the proposed regime could create similar end-prices (taking account of both CSP and CSCs) for generators as would occur under a nodal pricing market structure.

“The difference is one of degree in that the CSP/CSC regime can be applied selectively, for limited time and conditions with greater flexibility and scope”.<sup>17</sup>

However, it is interesting to note the lack of a worked example in any of the CRA reports demonstrating how the CSP/CSC scheme works to create a disincentive for the adoption of disorderly bidding behaviour during periods of intra-regional constraint.

CRA recognises that there is no close precedent for a CSP/CSC regime anywhere in the world and that much work would need to go into its development.

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<sup>15</sup> CRA Summary Report, page 25.

<sup>16</sup> CRA Summary Report, page 26.

<sup>17</sup> CRA Summary Report, page 29.

## 5.2 CRA RECOMMENDATIONS

Recommendation 4 is that the NEM adopts the ‘evolutionary’ regional boundary structure coupled with a CSP/CSC regime. To this extent, this recommendation is contingent on the proposed regional boundary criteria set out in recommendations 5 and 6 discussed above.

Recommendations 9 and 10, placed together into the back of the “Boundary Change Criteria” chapter 10, suggest that an in-principle decision be taken to introduce an intra-regional contracting/pricing regime along the lines of the CSP/CSC proposal.

## 5.3 COMMENTS ON RECOMMENDATIONS

### 5.3.1 Value of CSP/CSC approach

The key rationale for an intra-regional pricing and contracts regime appear to be that it:

- provides more refined locational price signals;
- while allowing:
  - regional boundaries to change infrequently; and
  - avoiding the price volatility and risks of the nodal pricing and FTR approach.

This means that there are two related justifications for pursuing a CSP/CSC approach:

- that it can yield net benefits that are foregone by the existing regional structure and that are material; and
- it has advantages over a revised set of regional boundary criteria, such that it is likely to yield *greater* net benefits than a revised set of regional boundary criteria in some cases.

#### *Net benefits of CSP/CSC regime*

Clearly, a prerequisite of developing a new intra-regional pricing and contracting regime is that there are net benefits from doing so. In fact, CRA itself states that:

“A threshold question, however, is whether *any* mechanism to create commercial incentives to assist in managing intra-regional congestion is needed.” [emphasis added]<sup>18</sup>

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<sup>18</sup> CRA Summary Report, page 29.

As discussed above, it is not clear that this threshold is met, given the observed similarity between nodal and regional prices. The CRA summary report does not purport to calculate any potential net benefits from a CSP/CSC regime, although it does argue that:

“In the longer term, however, poor pricing of congestion is likely to reduce the certainty that investors can have in the integrity of the NEM pricing and contribute to ill-timed or inappropriately located investments.”<sup>19</sup>

This prediction is not particularly convincing at the present time, given that, as CRA notes, regional prices have substantially converged since 1999/2000<sup>20</sup> and CRA’s own prediction that these are unlikely to diverge for the foreseeable future.<sup>21</sup>

Moreover, given the threshold for introducing a new region is only \$1 million net benefit per annum if a CSP/CSC regime is in place, this suggests that the threshold for applying such a regime to a particular constraint is less than \$1 million net benefit per annum. CRA says CSCs “would fill in the gap between the point where congestion is immaterial and where a new region is warranted...”.<sup>22</sup> The question then becomes whether it is worth introducing a new regulatory regime that will be applied selectively by NEMMCO or the AER for such small benefits (ie < \$1 m pa).

While this view does not strictly *imply* that the benefits from greater locational refinement in pricing would be small, it does support a *prima facie* presumption that the case for introducing a new and complicated pricing and contracting regime is weak at this stage.

### ***Greater net benefits than regional boundary change***

Even assuming that there would be a net benefit in introducing more granulated locational signals, the question becomes whether a CSP/CSC regime would yield greater benefits than a revised and more frequently-applied set of regional boundary criteria. This requires consideration of the likely benefits and costs of both options.

According to CRA, the types of problems resulting from an increase in the number of regions largely revolve around risk-management issues. IRSR rights or FTRs are often mooted as providing participants with some protection for inter-regional price risk. However, the present IRSR rights are non-firm and FTRs too would be non-firm unless they are underwritten by either a TNSP or customers. Neither of these options was discussed by CRA. The CRA summary report also points out that more regions can reduce trading liquidity, that FTRs are typically only short-term (thereby of limited use in hedging longer-term contracts) and

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<sup>19</sup> CRA Summary Report, page 2.

<sup>20</sup> CRA Summary Report, page 17.

<sup>21</sup> CRA Summary Report, page 32.

<sup>22</sup> CRA Summary Report, page 22.

that allocation of FTRs to protect the position of incumbent participants would be difficult to implement. CRA notes that:

“The methodology for initial allocation of FTRs would thus be contentious, as would any subsequent transition following major changes in the network configuration. We have concluded that, even if there had been a case on economic grounds for a nodal, or other highly granulated market design, it would have been unsafe to recommend such a change until the matters of policy raised here had been resolved.”<sup>23</sup>

However, CRA were not so circumspect in relation to their CSP/CSC proposal. This proposal raises very similar and potentially even more controversial issues as an increase in the number of regions or nodal pricing. For example, CRA notes that similar allocation issues arise for CSCs as for the allocation of FTRs, and consequently, CSP/CSC gives rise to potential commercial impacts for market participants.<sup>24</sup> The CRA summary report does not provide a way forward for resolving these difficult issues, other than to say the initial allocation could be designed to be commercially benign in return for incentives for efficient performance.<sup>25</sup> The proposal also raises fundamental governance issues that are discussed in more detail in section 5.3.2 below.

According to CRA, the main difference between a CSP/CSC regime and a FTR regime is that a “CSP/CSC regime can be applied selectively, for a limited time and conditions with greater flexibility and scope.”<sup>26</sup> These differences mean that FTRs tend to be better risk-management instruments than CSP/CSC, while CSP/CSC is more suited to constraint management.<sup>27</sup>

Given the similar commercial consequences of CSCs and FTRs, it is unclear why CSP/CSC development and allocation should be applied so flexibly when CRA has recommended long lead-times and terms for the alteration of regional boundaries and associated IRSRs or FTRs. Indeed, it is because of these impacts that CRA was unwilling to recommend a move to more regions until the policy issues had been resolved. Yet for their CSP/CSC regime, CRA seeks an immediate in-principle decision to proceed. It is difficult to understand why they have adopted a polar opposite approach for the two options.

### 5.3.2 CSP/CSC governance issues

CRA’s proposal for CSCs/CSP raises a raft of problematic governance issues compared with the existing Code provisions for regional boundary changes. While these existing provisions are not perfect, they still represent a relatively transparent and open process. Under clause 3.5.1, NEMMCO must recommend appropriate regional boundaries following consultation with Code Participants in

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<sup>23</sup> CRA Summary Report, page 25.

<sup>24</sup> CRA Summary Report, pages 29-30.

<sup>25</sup> CRA Summary Report, page 29.

<sup>26</sup> CRA Summary Report, page 29.

<sup>27</sup> CRA Summary Report, Fig 2, pages 31-33.

accordance with Code Consultation Procedures. NECA is then required to approve NEMMCO's recommendations.

By contrast, the CRA summary report highlights the flexibility and selectivity of the proposed CSP/CSC regime, which suggests that application of the regime will be a non-transparent and closed process that offers participants very little input into or information about the decisions made.

Perhaps the biggest concern about the implementation of a CSP/CSC regime to a particular constraint is that it is likely to be undertaken by NEMMCO, the AEMC or the AER, bodies without direct accountability to the market. NEMMCO is a not-for-profit entity, with a history of non-transparency regarding its operational processes and actions.

It is curious why on the one hand, CRA endorses the view that regulatory bodies should not have the ability to consider regional boundary changes on a case-by-case basis to maximise net benefits,<sup>28</sup> presumably because this puts those bodies into a central planner position, but then supports the same bodies having the power to implement an intra-regional pricing regime without a requirement to apply a net benefit framework or indeed any other framework that could diminish the flexibility and selectivity of the approach.

The CRA summary report makes the point that there is already a form of CSCs in place – the network support contracts entered into between TNSPs and market participants.<sup>29</sup> For example, the network support contract in North Queensland. However, at least TNSPs are jurisdictional bodies that are either for-profit, meaning they can be incentivised to behave in an efficient manner by regulators, or in the case of VENCORP, has close contact with a range of stakeholders. In the Group's view, it would be far preferable for any additional contracts designed to improve network performance to be managed by TNSPs that were subject to an appropriate incentives scheme (if and when that is developed) rather than a centralised market institution. To the extent that such incentives schemes are not developed because it is 'too hard' to do so, *ad hoc* intervention or contracting should be kept to a minimum. There should be no non-transparent discretion without accountability.

## 5.4 GROUP'S PROPOSALS

The Group believes that the primary mechanism for managing significant network congestion in the NEM is, and should continue to be, the alteration of regional boundaries. Given a robust set of boundary change criteria along the lines discussed in section 4.3.3 above, the management of intra-regional congestion should reduce to a second- or third-order issue.

The Group believes that the expected future frequency of significant intra-regional constraints will be low, especially if management via regional boundary

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<sup>28</sup> CRA Summary Report, page 46.

<sup>29</sup> CRA Summary Report, pages 28-9.

change becomes a more streamlined process. This is in line with the relatively low incidence of intra-regional constraints in the NEM to date.

Given the likely magnitude of intra-regional constraints, the Group believes that a simpler solution is more appropriate. The Group considers that the Option 4 constraint representation with CPF restriction will achieve a workable solution. The fact that CPF restriction can be applied selectively so that it applies to cases of aberrant bidding whilst allowing counter price flows when they occur for reasons of efficient transmission involving network loops strikes at the heart of the problem.

The Group's position is that the Option 4 with CPF restriction proposal be given a period of at least 12 months to prove its effectiveness and any decision made to progress CRA's proposal, should only be on the basis that:

1. The CSC allocation methodology is clarified and supported by both jurisdictions and the market;
2. The test for implementing the scheme is the same net market benefit test as applies to transmission investment and that the Group has recommended for considering a regional boundary change; and
3. The nature and governance of the authority responsible for implementing and operating the scheme is determined and agreed by both jurisdictions and the market.

The material Tumut-Murray constraint can be addressed by a Snowy regional boundary review immediately upon acceptance by the MCE of the Group's proposed boundary change criteria.

## 6 Information and consistency

### 6.1 INFORMATION REGARDING NETWORK CONGESTION AND INTERACTION WITH THE REGULATORY REGIME

Any scheme that attempts to manage network constraints must be linked with the provision of comprehensive and accurate information to market participants. Lack of such information could result in the inefficient timing and/or location of investment in the NEM, as well as negative impacts on the contractual and risk management practices of market participants.

### 6.2 CRA RECOMMENDATIONS

CRA's recommendation 7 is based around improving the information available to potential investors in the NEM. The information to be available for potential investors includes:

- the likely evolution of congestion in the NEM;
- broad indications of possible network augmentations that would either pass the Regulatory Test or be necessary to meet reliability or security requirements; and
- shadow prices at relevant nodes be reported to inform the market of emerging constraints.

CRA's recommendation 8 seeks to integrate the processes for applying the Regulatory Test for network augmentations with NEM boundary reviews. The first point recommends that the Regulatory Test should consider whether boundary change or application of the CSP/CSC scheme would benefit either dispatch or congestion alleviation. The second point proposes that a similar consideration of new network augmentations not already declared in the planning process take place during regional reviews.

### 6.3 COMMENTS ON RECOMMENDATIONS

CRA's proposal for more readily available information pertaining to the likely evolution of congestion is something that is already earmarked to be covered by the ANTS as of 2005. This information will undoubtedly be of use to participants considering investment in the NEM.

The proposal for broad indications of possible network augmentations that would pass the Regulatory Test is inappropriate. There is a real question over who could and should provide such broad indications. For example, it would be inappropriate for either NEMMCO or the ACCC to pre-empt the outcome of a TNSP's analysis on a particular project. TNSPs already provide annual planning documents for the market's consideration that will provide some of this information in any event.

The routine reporting of shadow prices is a sound proposal. As these data are already collected by NEMMCO, it would be a trivial exercise for NEMMCO to report the data on a weekly basis via its website in a similar manner to current price data reporting. Making these data more readily available in the market would allow participants to develop a more informed view regarding the nature and evolution of network congestion.

The concept that a linkage between the existing ACCC Regulatory Test and NEM boundary reviews is sensible in principle but unworkable in practice. The Regulatory Test is applied to network augmentations on an as-needs basis. However, CRA has recommended (and the Group has agreed) that boundary review processes follow a five-year cycle, like a TNSP regulatory review cycle. It would be inappropriate for network investment assessments to only occur every 5 years when a regional boundary review was undertaken. Similarly, it would be unwieldy for a regional boundary review to consider network and other solutions to congestion that have not been considered or nominated in the ANTS or SOO. The most workable approach would be for the Regulatory Test and regional boundary change criteria to apply the same analytical framework, as we have proposed in this submission. This should ensure that efficient solutions were chosen, within the limits of the market's ability to deal with changes to the regional boundary structure.

## 6.4 GROUP'S PROPOSALS

In principle, CRA recommendations 7 and 8 highlight important issues pertaining to boundary change and congestion issues. However, the Group is concerned that the proposals may be inappropriate or unworkable.

### 6.4.1 Informational proposals

- in response to recommendation 7.1, this should be available through existing publications such as ANTS;
- in response to recommendation 7.2, we do not believe it to be practicable or desirable for the regulator to be providing this information; and
- in response to recommendation 7.3, we would support the regular publication, preferably on a weekly basis, of shadow price data to enable the market to form its own opinion on congestion issues.

### 6.4.2 Interaction with the regulatory regime proposals

- in principle we agree that that the same framework, that of the Regulatory Test, should be applied to the assessment of both the alteration of regional boundaries and the value of transmission infrastructure investment, as they both provide alternative ways to address congestion. However, the 5-yearly regional boundary review process would typically preclude joint assessment of regional boundary change and regulated network investment; and
- in relation to recommendation 8.2, we would question what further options such a process would consider and hence its validity.

## 7 Conclusions

The management of intra-regional congestion in the NEM has been a controversial issue over the past few years. While the degree of overall market inefficiency resulting from the present state of affairs has probably been relatively small, constraint management raises significant commercial issues for particular participants. To overcome these issues, first NEMMCO and then CRA, has attempted to reformulate NEM constraint equations, but without managing to reach a solution that is widely acceptable.

In the view of the Group, significant intra-regional congestion that causes inefficiency should be dealt with under regional boundary criteria. These criteria should be amended so that they are based on the same cost-benefit framework applied in the ACCC's Regulatory Test. This would recognise the inherent similarity of the problem that both regional boundary criteria and regulated network investment are designed to deal with – the inefficient binding of transmission constraints. Once adequate criteria have been formulated to deal with the major constraints, the need for ongoing hand-wringing over intra-regional constraint formulation should ease and a simpler approach to the remaining constraints should be possible.

To this end, the Group has proposed a simple Option 4 with counter-price flow enhancement to deal with persisting intra-regional constraints that are not sufficient to trigger a regional boundary change. This solution, while not providing systematically more efficient outcomes than any other form of constraint formulation, at least represents a compromise that the participants of this Group can support. If such a solution is implemented, we consider that there will be no need to devote more of the market's resources into the further development of CRA's incomplete CSP/CSC proposal.

The Group's position is that the Option 4 with CPF restriction proposal be given a period of at least 12 months to prove its effectiveness and any decision made to progress CRA's proposal, should only be on the basis that:

1. The CSC allocation methodology is clarified and supported by both jurisdictions and the market;
2. The test for implementing the scheme is the same net market benefit test as applies to transmission investment and that the Group has recommended for considering a regional boundary change; and
3. The nature and governance of the authority responsible for implementing and operating the scheme is determined and agreed by both jurisdictions and the market.

The material Tumut-Murray constraint can be addressed by a Snowy regional boundary review immediately upon acceptance by the MCE of the Group's proposed boundary change criteria.

