

25 June 2010

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By online submission

Dear Mr Pierce,

Inter-regional Transmission Use of System Charging

We refer to the AEMC's Consultation Paper on Inter-regional Transmission Charging (IR TUOS) and lodge our submission response.

AEMO provides in principle support to the introduction of inter-regional transmission charges. The proposal is consistent with the establishment of the role of the national transmission planner within AEMO and recognition of the need to coordinate the development of the grid on a national basis. However, AEMO believes that there are issues in the proposed rule change that will need to be carefully considered. We would welcome any prospect of engaging in discussions with the AEMC in developing and considering those issues IR TUOS and the development of the rules.

If you have any questions, please call Franc Cavoli on (03) 9609 8416.

Yours sincerely

David Swift
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cc:

Attachment: Submission – Inter-regional TUOS Charging

SUBMISSION - INTERREGIONAL TUOS CHARGING

PREPARED BY: Market Development

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1 Introduction

The proposed introduction of inter-regional transmission charges is supported in principle by AEMO. The proposal is consistent with the establishment of the role of the national transmission planner within AEMO and recognition of the need to coordinate the development of the grid on a national basis. It would appear incongruous to plan and develop the grid on a national basis without recognising this in transmission pricing.

While we support the principle behind the introduction of inter-regional Transmission charges, we are keen to engage with the AEMC and all our stakeholders in understanding the characteristics of the specific approach proposed and to assist in developing the most efficient and effective regime possible recognising the need for these changes to meet the national electricity objective.

In commissioning this work and proposing these Rule changes, the MCE made a number of important points. In particular:

The MCE recognises the importance of providing accurate and reflective market signals to encourage investment and to ensure that costs are allocated to the appropriate parties.

and;

the MCE considers that in principle the AEMC's recommendation will promote the efficient allocation of network costs to those who benefit from its use, which will assist the development of a national, interlinked energy market.¹

In undertaking this work we need to recognise that transmission pricing is complex, that the detailed procedures are not specified in the Rules and the implementation in respect to a number of details are likely to vary from one region to the other and that the overall outcomes of the methodology can be very sensitive to a range of decisions. The final process to be determined should seek to deliver both a workable and consistent process and meet the MCE's objectives in introducing such a scheme.

To further the discussion, AEMO makes several comments and suggestions in response to the AEMC's Consultation Paper on inter-regional TUOS Charging in an attempt to answer the questions put forward in the paper. The issues are dealt with under the same broad categories appearing in the Consultation Paper as follows:

- Background to the current pricing arrangements:
 - Allocation of costs into a locational and non-locational component and the allocation of locational prices to individual connection points
 - Converting locational and non-locational costs to prices
- Proposed inter-regional TUOS arrangements
- Potential issues with the proposed approach
- Potential issues for the achievement of objectives

2 Background to current TUOS arrangements

2.1 Cost allocation process

In order to get a better understanding of the types of charges that may be charged under this inter-regional TUOS scheme, it is worthwhile summarising, in brief, the current methodology that a TNSP would use to calculate its TUOS charges. Currently, transmission charges for a regulatory

¹ Ministerial Council on Energy, Review of Energy Market Frameworks in Light of Climate Change Policies - Response to Australian Energy Market Commission's Final Report, December 2009, p. 7.

year are determined by reference to a TNSP's Aggregate Annual Revenue Requirement (AARR) adjusted for certain events, cost pass throughs that were not foreseen at the revenue application stage and expected operating and maintenance costs for providing *prescribed common transmission services*.

That part of AARR that is used to provide *prescribed transmission services*, or the "attributable cost share" is then used to arrive at the Annual Service Revenue Requirement (ASRR). The process to allocate the AARR to various components must be undertaken in accordance with the TNSP's Cost Allocation Methodology, against defined categories of *prescribed transmission services* (*prescribed entry and exit services* and *prescribed common transmission services* and *prescribed TUOS services*).

The category of *prescribed TUOS services*² is then split in half:

- The locational component:

Receipts from AEMO's Settlement Residue Auctions (SRA) are netted off one half by the Coordinating TNSP. This is then allocated against connection points in the system according to their proportionate use of the relevant assets. This is referred to as the "locational component" and may be derived by use of *CRNP methodology* or *modified CRNP methodology*. CRNP based cost allocations to customers at a connection point are based on the value of assets used to provide those network users.

These methodologies for the allocation of costs to individual connection points are described in the Rules in Schedule 6A.3, but only at a relatively high level. Therefore we expect differences between regions in both the methodology adopted and the detailed implementation of the chosen methodology. The choice of scenarios used for the allocation is one specific area of difference, where a number of TNSPs do not appear to use a small number of specific scenarios of high demand for their analysis but rather examine all periods for the highest demand on each element.

- The pre-adjusted non-locational component:

The remainder of the ASRR is then adjusted for other factors to arrive at the "adjusted non-locational component". As a non-locational component, this amount is not directly allocated to connection points but rather allocated by means of prices discussed below.

The intention is that the first component reflects an efficient signal to customers based on their location. As such, half the sunk cost of historical assets is meant to be a proxy to the cost of maintaining services to customers into the future. Because of the nominal nature of the 50% split, the Rules also provide for an alternative method of determining the split between the locational and adjusted non-locational TUOS prices based on a reasonable estimate of future network utilisation that intends to provide more efficient location signals to existing and intending network users. This is intended to further refine the efficient allocation of transmission costs to individual connection points.

2.2 Price setting

Prices must be developed for each of the categories (among others) of *prescribed common transmission services*, *prescribed TUOS services* (locational) and *prescribed TUOS services* (adjusted non-locational).

The cost allocation processes described above generate a fixed cost to be recovered at each connection point and a lump sum to be recovered over all connection points in the region. The process to turn these costs into prices varies from region to region. The Rules require that they be determined by a pricing methodology approved by the AER as part of the regulatory process. They also require that the pricing methodology be consistent with Pricing Principles in the Rules and Pricing Methodology Guidelines issued by the AER. The approach taken to turning the

² The categories of prescribed entry and exit services are not relevant to the calculation of IR TUOS.

locational component into prices is not relevant in this case as the locational component applicable to the notional customer at the border is one part of the proposed export load charge.

The pricing approach to turning the “adjusted non-locational component” into prices is, however, critical as the proposal is that the chosen pricing method will determine the proportion of that component to be charged to each connection point and hence a part of the export load charge to be imposed on customers in the importing region. The pricing methodology guidelines outlines a range of permissible postage stamping structures for the cost recovery of adjusted non-locational *prescribed TUOS services* and *prescribed common transmission services*. In the derivation of the guidelines, the AER acknowledges that these are ‘inefficient’ charges which should be recovered in a least distortionary way. Their final decision states:

The AER considers the following postage stamp price structures for the recovery of the non-locational component of *prescribed TUOS services* and *prescribed common transmission services* are permissible:

1. Either the contract capacity or historical energy from the corresponding billing period two years prior to the current billing period. A contract capacity price and an energy price must be calculated such that a transmission customer with a load factor in relation to a connection point equal to the median load factor for all connection points within the region is indifferent to the use of either the contract capacity or the historical energy price. The lower of the two prices is to apply to the connection point. A contract capacity price must not be used unless the customers’ connection agreement specifies penalties for exceeding the agreed contract capacity.
2. Historical maximum demand in the corresponding billing period two years prior to the current billing period.
3. An alternative pricing structure which recovers the fixed and common costs of providing the service in the least distortionary manner.

The AER considers that either option one or two can be used for the adjusted non-locational component of *prescribed TUOS service price* or the *prescribed common transmission service price*. A TNSP may also propose an alternative postage stamp pricing structure provided it can demonstrate that the alternative structure recovers the costs of providing the service in the least distortionary manner.³

3 Proposed inter-regional TUOS arrangements

The proposed rule seeks to treat an interconnected region as a connection point or series of connection points to the original region. This will mean that the importing region is treated as a single customer of the exporting region at the border. As currently proposed, the importing region will be exposed to a proportion of the locational and adjusted non-locational transmission costs at that point and those charges would be the same as the charges a customer with the same characteristic would bear at that point.

The lump sum cost of all inter-regional charges, or the export load charge, would then need to be recovered from customers in the importing region. It is proposed that this would be allocated to connection points in the importing region using the same CRNP or modified CRNP process used for the locational component of charges in that region.

3.1 Treatment of SRA Auction proceeds

In the Consultation Paper, the proposed rule is drafted so as to return SRA auction proceeds and residues to customers in the importing region as part of the non-locational component of the TUOS charge. This is a change from the current situation where the auction proceeds (actually the forecast auction proceeds) are subtracted from the locational component before it is allocated to

³ Electricity Transmission Network Service Providers Pricing Methodology Guidelines, Final Decision, October 2007, p. 20

connection points. We do not understand the reason behind this change. Subject to further analysis, AEMO considers that the more efficient method of returning these receipts should be through the locational component since the receipts arise from the use of the interconnector. Ideally the SRA auction proceeds would be netted off the amount transferred as the load export charge from the adjacent region and allocated locationally.

4 Potential issues with the implementation of the proposed approach

Given the complexity of the transmission pricing process, AEMO fully supports the planned testing of proposed arrangements in the next stage of the assessment of these proposed Rule changes. The current arrangements in the Rules are not prescriptive and it is understood that different approaches are adopted in different regions. There may be arguments in favour of applying different approaches to suit particular circumstances but it is expected in most cases that a consistent national approach needs to be determined, justified and implemented as part of introducing inter-regional TUOS. Where any such changes are proposed, consideration will need to be given to transitional measures.

The range of practical matters we consider will need to be addressed during the process include:

- The split of ASRR into a locational and non-locational component

The current Rules provide for an arbitrary 50:50 split which we understand that most regions adopt. The Rules also permit other approaches which seek to better reflect the intent of giving efficient price signals. One would expect that a consistent approach needs to be adopted nationally in this respect.

- Allocation of costs using CRNP

The Rules allows the adoption of either CRNP or a modified CRNP process. They also provide little detail in the implementation of either approach. We consider that the whole approach needs to be checked to ensure that it works appropriately and deals with new forms of non-synchronous generation. We also consider that further work is required on consistency of approach.

- Choice of scenarios for cost allocation purposes

This appears to be a major area of difference and an issue of concern to driving efficient pricing. This is discussed further below.

- Choice of pricing methodology for non-locational component

The allocation of a proportion of the non-locational component to the load export charge needs to be questioned. If it remains, a consistent approach would need to be decided and implemented nationally at least in respect of the portion assigned to customers in importing regions.

- Practical implementation

The derivation and publication of transmission prices must always work to a tight timetable to allow them to be incorporated in distributors' tariffs and retailers' price offers. The national process therefore needs to fit to these requirements.

The Consultation Paper asks how a load export charge should be allocated to network users in the importing region. We agree with the AEMC's view that it should be allocated through locational TUOS charges on the basis of customers' proportionate use of network assets in the adjoining region. However, we believe that there is a potential problem with the implementation of that approach.

To do it this way, TNSPs would need to calculate their load export charge and then redo their TUOS calculations again after they receive export load charges from adjoining regions. This will result in an iterative process that ends only when all TNSPs resolve their

TUOS prices in light of all other TNSPs' cascading load export charges. A practical solution will need to be identified in the testing and assessment process.

- Transmission price smoothing

The current Rules provide for smoothing of the locational component of TUOS to individual connection points. The cost of that smoothing is borne by spreading it to all customers in a region through adjusting the non-locational component. Smoothing will still be important with inter-regional TUoS. It is likely that inter-regional charges may be very volatile year to year as interconnector usage changes due to generator investment and market changes. The way in which any smoothing is undertaken and how its cost is recouped needs to be considered in the next stage of assessment as does the likely scale of volatility in prices with the methodology chosen.

5 Potential issues for the achievement of objectives

The objective in introducing inter-regional TUoS is not simply to transfer some cost between regions, but to “promote the efficient allocation of network costs”. This means that in addition to the implementation issues identified in section 4, the current consultation and testing process needs to determine whether the proposed arrangements, or some modification of those, are likely to deliver more efficient pricing. The following addresses several key issues in this regard.

5.1 Locational Component and Peak Loads

AEMO raises the question whether the proposed rule will achieve an efficient allocation of transmission costs among interconnected regions. We have seen from the existing TUOS allocation rules that the intention of calculating the locational component of TUOS charges was to give a locational signal to network users and also identify areas of the network where augmentation would be more valued by network users.

Especially in regard to interconnectors, the market arrangements provide for customers to pay for losses and congestion through other mechanisms. The TUOS charges are therefore solely related to the cost of ongoing use of the assets. As such, the Rules and guidelines contemplate allocating costs on the basis of their use of assets under circumstances that are likely to drive investment. Interconnector Regulatory Tests to date have shown that the cost of interconnectors can generally only be justified when a region faces a tight supply-demand balance and investment is required to avoid sustained high prices and unmet demand at peak demand. Under such conditions, where the deferral of generation investment in the region and obtaining cheaper generation from an adjoining region provides a net market benefit, interconnector augmentation will be an economic option.⁴

As noted above, the locational component of *prescribed TUOS services* is based on CRNP or modified CRNP methodology which itself is based on the value that network assets provide network users. Times of greatest value generally correspond to times of regional system peak and higher prices. An interconnector is no different in this regard – it will have greatest value to the network users in an importing region at times of peak demand. It is therefore more efficient for the inter-regional TUOS rules to limit the charges attributed to an importing region to the locational component of the exporting regions' prescribed TUOS charge and guiding when the appropriate survey periods to measure and model system loading.

In the future it may be possible to justify interconnector upgrades based at least in part on the incremental value of Renewable energy certificates or in response to a potential future carbon price. In such cases, a changed criteria driving investment may require reconsideration of the approach.

⁴ The Victoria/NSW interconnector Regulatory Test suggested that the net benefits of the interconnector augmentation increased as load edged toward peak system load.

5.2 Adjusted non-locational component

With work on the inter-regional TUOS modelling exercise still to be completed and no agreed and consistent pricing approach, it is hard to discern how much of the adjusted non-locational component of an exporting region's *prescribed TUOS service* amount would be transferred to the importing region. By its nature, the non-locational component is inefficient because no account is taken of its utilisation in the network by the importing region.

The danger is that a region's entire TUOS costs would be apportioned to the importing region purely on the basis of historical interconnector flow which may lead to some odd outcomes. In the NEM, interconnector flows between the two regions are, with some exceptions, determined by relative regional prices (i.e. the direction of the interconnector is to the lower priced region). In the context of Inter-regional TUOS pricing, this enables the passing of inefficient transmission costs to the importing region. As noted above, this is because non-locational pricing is not based on the TNSP's CRNP or Modified CRNP calculations and therefore no account is taken of the assets' utilisation or value. Locational TUOS cost allocations seek to influence decisions of sizing and location of load installations and in the case of interconnector investment decisions, would have a similar effect. Non-locational charges do not appear to have these same efficiency outcomes. If the adjusted non-locational component is to be part of inter-regional TUOS charging regime, then consideration should be given to the option of a single national non-locational price where the NEM aggregate is allocated to all NEM transmission users independent of their region and particular interconnector flows.

In determining whether to build a new interconnector or augment an existing one, the potential impact on investment decisions may be influenced by the potential future inter-regional TUOS costs on the importing region. Passing on an exporting region's proportion of inefficient TUOS charges could reduce the incentive and appropriate information to justify the building or augmentation of an interconnector.

5.3 The need for stable price signals

A change in the methodology of allocating transmission costs nationally raises the possibility of a quantum change in a region's TUOS charges. This is also an issue for long term charges where movements in generation investment and dispatch have a material impact in TUOS pricing. This is both a practical implementation issue (as discussed above) and also a concern in terms of efficient price signalling. The value of these measures in terms of their ability to drive more efficient outcomes needs to be questioned if they exhibit a high level of volatility from year to year.

5.4 Treatment of Market Network Services Providers

The consultation paper proposes that MNSPs should be excluded from the load export charge. The AEMC has raised the question as to whether a load export charge should impact on MNSPs. MNSPs have been constructed on commercial grounds and any change to transmission pricing related to them would need to be carefully considered. Additional costs should not be imposed on existing MNSPs unless there are strong arguments for doing so. On the other hand, it does not appear appropriate that they should impose network costs on the prescribed system as they were constructed and receive revenue through a different regime, operating on the basis of relative regional prices. The MNSP approach where inter-connector costs are recovered directly from the market through arbitrage opportunity is an alternative model for the recovery of the capital cost of assets. Excluding them from this process therefore appears appropriate. However inter-regional flows do occur over MNSPs and will need to be taken into account in the load flow modelling analysis and decisions taken as to how to treat any sums allocated to their connection points in this process.

6 Meaning of terms in Definitions

The proposed rule includes amendments to the definitions of *prescribed TUOS services* and *prescribed common transmission services* which contains the concept of direct or indirect connection. For example:

Prescribed TUOS services ... [are] *Prescribed transmission services* that ... provide different benefits to *Transmission Network Service Providers* which have an *interconnection* with the relevant *transmission network* depending on the location of their **direct or indirect connection** or *interconnection* with the relevant *transmission system*.

We are unsure what meaning this is attempting to convey but assume that it is trying to include benefits accruing to regions that are connected to the original region by an intervening region(s) (i.e. it is not contiguous to the original region). If this is indeed the intention, it should probably be made more explicit in order to remove potential ambiguity.