Issues paper

Draft amendments to the AER's transmission Pricing Methodology Guidelines:

Inter-regional transmission charge

April 2014

AUSTRALIAN ENERGY REGULATOR

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Overview

We are responsible for the economic regulation of transmission service providers in the national electricity market (NEM). We regulate transmission service providers in accordance with the national electricity rules (NER) and the national electricity law (NEL).

On 28 February 2013, the Australian Energy Market Commission (the Commission) published its final determination and final rule implementing inter-regional transmission charging arrangements. The final rule provides for an additional transmission network charge—a load export charge—which will be levied between transmission network providers in adjacent regions of the NEM from 1 July 2015.

The modified load export charge will lead to some customers paying more for transmission services and others paying less, depending on which region in the NEM they are located.

Modelling conducted by the Commission showed that the rise or fall in an average residential bill is expected to be about 1 per cent.[1] As well, the aggregate revenues of all transmission businesses in the NEM will not change. The load export charge reallocates *existing* costs between regions; it does not introduce new costs from which additional revenue can be recovered.

The Commission's final rule requires the transmission businesses to amend their pricing methodologies by 27 February 2015. To facilitate this, we are required to amend our transmission Pricing Methodology Guidelines (the Guidelines).[2] Before this happens we are, however, required to publish our proposed amendments with an invitation to stakeholders to provide submissions.[3] This issues paper furthers that requirement. Appendix A provides general information about transmission pricing.

Consultation

Stakeholders may provide written submissions on this issues paper and the proposed amendments by COB 30 May 2014. Submissions may be sent electronically to AERinquiry@aer.gov.au. Inquiries should be directed to the AER Network Regulation Branch on (03) 9290 1800.

Milestone	Date
Consultation closes on the proposed amendments	30 May 2014
Pricing methodology guidelines amended	30 September 2014
TNSP pricing methodologies must be amended	27 February 2015
TNSPs are required to publish first modified load export charge	15 March 2015
Commencement date for inter-regional transmission charging arrangements (modified load export charge)	1 July 2015

[1] AEMC, *Rule determination: National electricity amendment (Inter-regional transmission charging)*, 28 February 2013, p. 1.

[2] NER, clause 6A.20(e)

[3] NER, clause 6A.25.1.

1 Background

In 2010 the Ministerial Council on Energy (MCE) (now known as the Council of Australian Governments Energy Council) submitted a rule change request proposing the introduction of inter-regional transmission charging arrangements. On 28 February 2013, the AEMC made its final rule determination on this matter. It gives effect to aspects of the proposed rule but with modifications that the Commission considered 'more preferable'.[4]

1.1 Initial rule change request

The NEM comprises interconnected regions. In the course of inter-regional electricity trade, customers use transmission systems in regions besides their own. This is for the transport of electricity from the point at which it is generated to where it feeds into an interconnector.

Notwithstanding, at the time of the MCE's rule change proposal transmission companies could not recover revenue from customers in an importing region for the cost of using their network. This was because they could only levy charges from customers *within* their own region. That is, inter-regional transmission revenue recovery arrangements were not available.

For example, South Australia and Victoria are adjacent regions in the NEM. Electricity can flow between each region in both directions. If South Australia imported electricity from Victoria, then in order for the electricity to reach South Australia it must first travel through the Victorian transmission system. In this scenario, the absence of inter-regional transmission arrangements means that the Victorian transmission network service provider (SP AusNet) cannot recover any revenue from South Australian customers. This is despite facilitating the transport of electricity which those customers have imported and consumed. In turn, the South Australian customers would only be charged for the transport of electricity (sourced from Victoria) after it crosses into the South Australian border and is carried by the South Australian transmission network (ElectraNet).

The absence of inter-regional transmission charging arrangements gives rise to a reduction in the cost reflectivity of network charges. This is because customers are not exposed to the full costs they impose on the transmission system.[5] Cross-subsidies therefore arise. Customers in regions that export more electricity than they import, end up cross-subsidising customers with positive net electricity flows.[6]

The MCE proposed inter-regional transmission arrangements whereby the co-ordinating network service providers in adjacent regions of the NEM levy a 'load export charge' on each other. It stated that the charge levied would reflect the flow of electricity from one region to adjacent regions.[7]

1.2 Final rule determination

The Commission's final rule gives effect to a 'modified' load export charge. It is calculated in a similar way to the MCE's proposal but with some exceptions relating to the costs it recovers and the level of prescription given in its calculation. The key features of the modified load export charge are:

- it does not affect the total revenues transmission companies earn (section 1.2.1)

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4 AEMC, *Rule determination: National electricity amendment (Inter-regional transmission charging)*, 28 February 2013
5 MCE, Rule change request – Inter-regional transmission charging, 15 February 2010, p. 4.
6 MCE, Rule change request – Inter-regional transmission charging, 15 February 2010, p. 4.
7 MCE, Rule change request – Inter-regional transmission charging, 15 February 2010, p. 2.

- it recovers the cost of locational transmission use of system (TUoS) services only (section 1.2.2)
- the final rule prescribes a methodology for allocating costs for the recovery of the load export charge which must be consistently applied across the NEM (section 1.2.3)
- the co-ordinating network service providers in each region of the NEM are responsible for calculating, billing and paying the modified load export charge (section 1.2.4).

1.2.1 Total revenue

The Commission has noted that the 'introduction of a modified load export charge will not affect the total revenues earned by transmission business; it will only affect how those revenues are allocated between consumers in the [NEM]'.[8] This is because a transmission business may recover less from their own consumers under the new arrangements, but more from consumers in a neighbouring region.

The Commission modelled the effect of the modified load export charge. It stated that for 'the period modelled (2009-12) the network charge paid or received by a region ranged from approximately 1 per cent to 6 per cent of allowable revenues (on average over the three years)'.[9] The effect that this would have on customers is not expected to be large. The Commission estimated that the rule will lead to an increase or decrease in the average residential customer's final bill of about 1 per cent.[10]

1.2.2 Cost component

The modified load export charge will only recover the cost of locational transmission use of system (TUoS) services. This component comprises some 50 per cent of the total TUoS charge. The Commission's decision on which costs to include, and which to exclude, was based on whether they would provide economic signals to customers.[11]

Under intra-regional transmission arrangements, prices for locational TUoS services are based on the distance customers are from generators and their demand at times of 'peak utilisation'. These factors provide economic signals to customers, in terms of their location and their demand. The Commission thus included costs attributable to the locational component of TUoS services in the modified load export charge.

Other costs are incurred in facilitating inter-regional electricity trade. Namely, non-locational TUoS and shared transmission services. However, the way in which they are recovered focuses on the sunk costs of transmission businesses rather than providing economic signals. Hence the Commission decided not to include them in the modified load export charge.[12]

1.2.3 Prescribed method

The rule prescribes the method that must be used to calculate the modified load export charge. This is intended to arrive at a consistent approach across the NEM in applying the rule, so that the charges levied between regions vary only on the basis of costs, rather than because of different approaches or methodologies.

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8 AEMC, *Rule determination: National electricity amendment (Inter-regional transmission charging)*, 28 February 2013, ii.

9 AEMC, *Rule determination: National electricity amendment (Inter-regional transmission charging)*, 28 February 2013, i.

10 AEMC, *Rule determination: National electricity amendment (Inter-regional transmission charging)*, 28 February 2013, i.

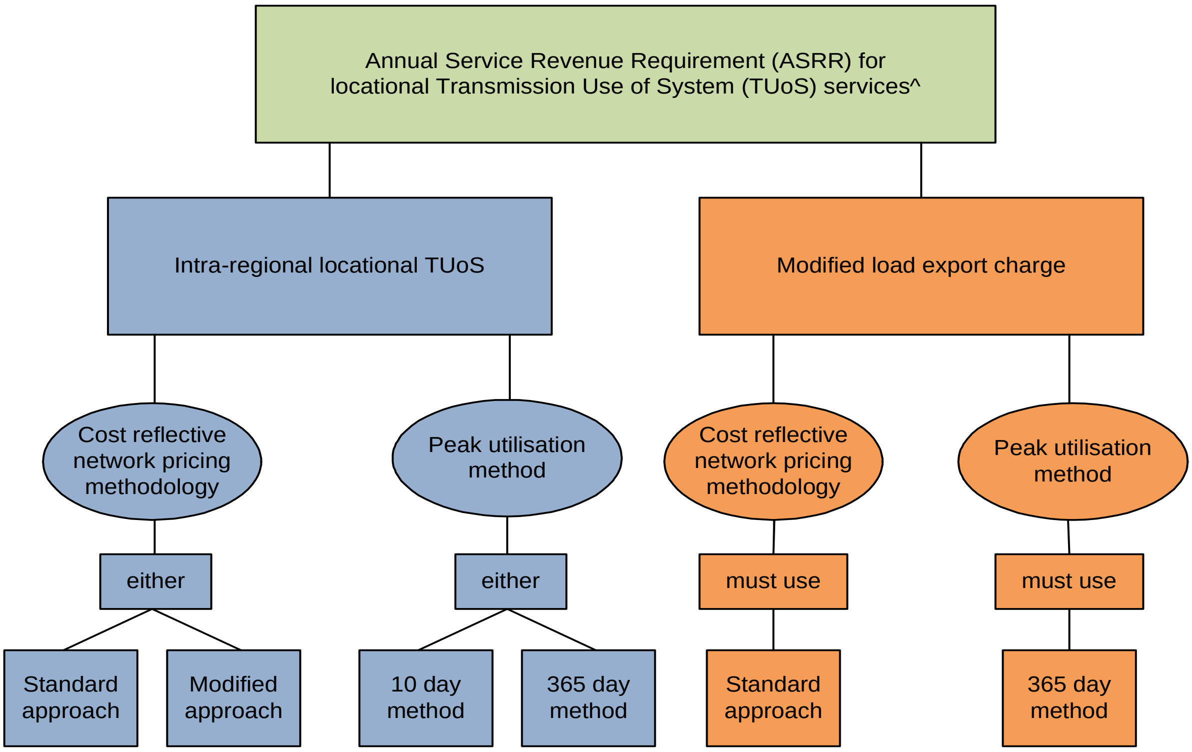
11 AEMC, *Rule determination: National electricity amendment (Inter-regional transmission charging)*, 28 February 2013, p. 26.

12 AEMC, *Rule determination: National electricity amendment (Inter-regional transmission charging)*, 28 February 2013, p. 22

The method for calculating the modified load export charge follows the same cost allocation process used in relation to intra-regional locational TUoS services. The reason for this is that the modified load export charge recovers the same cost component (see section 1.2.2). That said, the method for allocating costs for the modified load export charge is more prescriptive than for intra-regional locational TUoS services.

Figure 1.1 compares both cost allocation processes. The modified load export charge shares the same revenue source as the locational component of TUoS services. Nonetheless, the process that must be followed in the allocation of that revenue is more prescriptive. The cost reflective network pricing approach and the peak utilisation method that *must* be used are prescribed.

Figure 1.1 The cost allocation process for the modified load export charge (compared with intra-regional locational TUoS services)



In practice, the final rule requires two runs of a similar cost allocation methodology:

- the first run allocates revenue to the connection points of customers *within* a co-ordinating network service provider's region (see the blue text boxes on the left-hand side in Figure 1.1)
- the second run is the same as the first but *the connection points with TNSPs in adjacent regions are included* and a prescribed cost allocation methodology must be followed (see the orange text boxes on the right-hand side in Figure 1.1).

The first run is not a new requirement; it is how TNSPs allocate costs and derive charges for the locational component of intra-regional TUoS services.

The second run derives the modified load export charge for an adjacent region. Its most important feature is that it includes the interconnections with adjoining regions. In that way, neighbouring transmission systems are treated as if they were a load on the regional boundary.

Figure 1.2 provides a simplified example of how each run will be applied. For the purposes of the example "connection point C" is the point at which electricity exits the region and flows into a neighbouring TNSP's transmission system. The first run (intra-regional charges/locational TUoS services) is shown on the left. The second run (inter-regional charges/modified load export charge) is on the right.

Figure 1.2 Simplified example of the intra- and inter-regional costs allocations

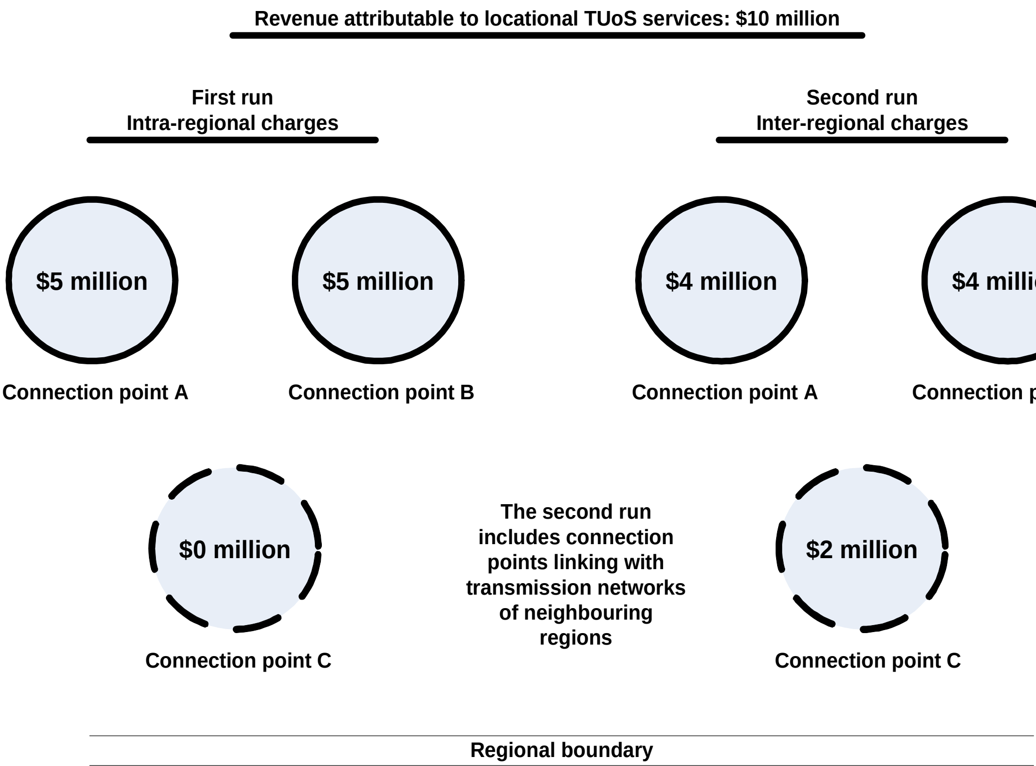


Figure 1.2 shows that on the first run costs are only allocated to connection points A and B. On the second, however, connection point C is included in the cost allocation process.

The revenue allocated to connection point C ($2 million) is the modified load export charge that will be billed to the neighbouring region. By including both intra- and inter-regional connection points, the modified load export charge is proportional to the costs associated with providing intra-regional TUoS services.

1.2.4 Billing arrangements

The co-ordinating network service provider in a region is responsible for calculating, paying and receiving the modified load export charge recoverable from or owing to neighbouring region(s).

In some regions, a co-ordinating network service provider has already been appointed. Where there is more than one transmission business in a region, the NER requires that they appoint a co-ordinating network service provider who is responsible for the allocation of all relevant aggregate annual revenue requirement (AARR) in that region.[13]

[13] NER, clause 6A.29.1(a).

Other regions do not have multiple transmission businesses and therefore a co-ordinating network service provider has not been appointed. In this case the co-ordinating network provider is the TNSP for that region. The final rule states that where there is a single transmission business in a region, 'reference… to a co-ordinating network service provider is to be read as a reference to that Transmission Network Service Provider'.[14]

How billing will work

The flow of electricity is likely to change over the course of a year. The modified load export charge is therefore recovered via net payments.

The net payments a co-ordinating network service provider makes comes out of the allowable revenue in its region. The other transmission businesses in its region contribute to and share in the net payments that are made between neighbouring regions.

The payment or receipt of a modified load export charge is passed through to customers. This is by way of an adjustment to the revenue recoverable for the locational component of TUoS services.

Example

As co-ordinating network service providers, ElectraNet in South Australia and the Australian Energy Market Operator in Victoria are responsible for calculating the modified load export charge.

The flow of electricity between their respective regions is likely to change over a course of the year. Sometimes South Australia will be a net importer, and at other times Victoria will be.

The final rule thus requires a reconciliation process. ElectraNet would calculate the modified load export charge recoverable from Victoria and AEMO would do the same for South Australia. Those amounts would then be netted out to a single payment which one of them incurs and the other receives.

Multiple transmission businesses

In some regions, there are multiple transmission businesses. Each of them—not just the co-ordinating network service provider—will be required to contribute to the payment of the modified load export charge. Similarly they all share in the receipt of any payments.

As well as ElectraNet, Murraylink provides transmission services in South Australia. If that state was a net importer of electricity one year, then Murraylink would have to contribute to the payment made to Victoria. To facilitate this ElectraNet is required to bill Murraylink.

The same approach applies when payments are received. If AEMO received a payment from ElectraNet, then it would be required to share the additional revenue with other transmission businesses in Victoria—that is, SP AusNet.

The paying out and the receipt of a net payment for the modified load export charge is made via a negative or positive adjustment to the locational component of prescribed TUoS services.

[14] NER, clause 6A.29A.1.

2 Pricing methodology guidelines

The Commission's rule requires us to amend the Guidelines. In this section, we outline our proposed amendments.

2.1 Amendment requirements

The requirements for the Guidelines are set out in clause 6A.25.2 of the NER. The amendments that must be made because of the modified load export charge are highlighted below.

NER, clause 6A.25.2

The pricing methodology guidelines must specify or clarify:

(a) the information that is to accompany a proposed pricing methodology being information that is necessary to allow the AER to forma view as to whether the proposed methodology is consistent with and gives effect to, the Pricing Principles for Prescribed Transmission Services and the requirements of this Part J;

(b) permitted pricing structures for recovery of the locational component of providing prescribed TUOS services under clause 6A.23.4(e), having regard to:

(1) the desirability of consistent pricing structures across the NEM; and

(2) the role of the pricing structures in signalling efficient investment decisions and network utilisation decisions;

(c) in relation to prices set on a postage-stamp basis, permissible postage stamping structures for the prices for prescribed common transmission services and the recovery of the adjusted non-locational component of providing prescribed TUOS services having regard to:

(1) the desirability of a consistent approach across the NEM, particularly for Transmission Customers that have operations in multiple participating jurisdictions; and

(2) the desirability of signalling to actual and potential Transmission Network Users efficient investment decisions and network utilisation decisions.

(d) the type of transmission system assets that are directly attributable to each category of prescribed transmission services, having regard to the desirability of consistency of cost allocation across the NEM;

(f) those parts (if any) of a proposed pricing methodology or the information accompanying it, that will not be publicly disclosed without the consent of the Transmission Network Service Provider; and

(g) the matters which Transmission Network Service Providers that are also Co-Ordinating Network Service Providers must include in their pricing methodologies in accordance with clause 6A.24.1(b1) for:

(1) the allocation of the AARR for prescribed transmission services provided by Transmission Network Service Providers within that region, including the allocation of the AARR as agreed between Transmission Network Service Providers in accordance with clause 6A.29.3;

(2) the calculation of modified load export charges consistent with clause 6A.29A.2; and

(3) the allocation of billing of modified load export charges:

(i) receivable by other Co-Ordinating Network Service Providers in interconnected regions; and

(ii) payable to other Co-Ordinating Network Service Providers in interconnected regions,

to each Transmission Network Service Provider within its region under clause 6A.29A.5.

2.2 Proposed amendments

In this section, our proposed amendments to the Guidelines are outlined. We have numbered each proposed amendment, which we invite stakeholders to refer to in any submissions they provide.

For a pricing methodology to be approved it must give effect to the pricing principles in the NER and comply with the Guidelines.[15] The pricing principles contain the substantive requirements. The Guidelines specify the *information* that we require to be satisfied that a business has given effect to the NER pricing principles.[16]

2.2.1 Allocation of the AARR

The final rule requires the Guidelines to be amended so that when a co-ordinating network service provider submits its pricing methodology for approval it is required to specify how the annual aggregate revenue requirement (AARR) in its region will be allocated.[17]

The Guidelines are required to address clause 6A.29.3 of the NER.[18] It states that a co-ordinating network service provider responsible for the allocation of the AARR in a region may allocate the AARR of interconnected regions as well, if the relevant transmission business or businesses have agreed to such an arrangement.

Proposal 1

Where a TNSP is the co-ordinating network service provider for a region its pricing methodology is required to detail how it will derive the AARR for prescribed transmission services in that region, including any allocation of the AARR in an interconnected region as agreed between TNSPs in accordance with clause 6A.29.3 of the NER.

2.2.2 The calculation of the modified load export charge

The final rule requires the Guidelines to be amended so that a pricing methodology a transmission business submits is required to show how the modified load export charge will be calculated.[19]

The final rule specifies *how* the modified load export charge is required to be calculated. In doing so it is prescriptive in terms of which cost reflective network pricing and peak utilisation methods are to be used (see section 1.2.3).

We do not think that the Guidelines need to elaborate or provide further clarification on how a pricing methodology is required to give effect to the calculation of the modified load export charge. This is other than to state that a pricing methodology must specify that when calculating the modified load export charge a co-ordinating network service provider is required to follow the method prescribed in clause 6A.29A.2 of the NER.

15 NER, clause 6A.24.1(c)(1) and (2).
16 NER, clause 6A.24.1(c)(2).
17 NER, clause 6A.25.2(f)(1).
18 NER, clause 6A.25.2(f)(1).
19 NER, clause 6A.25.2(f)(2).

Proposal 2

Where a TNSP is the co-ordinating network service provider for one or more regions, it is required to detail how it will calculate the modified load export charge payable to it by the co-ordinating network service provider for each interconnected region, in accordance with clause 6A.29A.2 of the NER.

2.2.3 The allocation of billing

Two types of billing are addressed in the final rule (see section 1.2.4):[20]

1. Inter-regional billing. This occurs between co-ordinating network service providers and results in a net payment from one provider to the other.

2. Intra-regional billing. This occurs where there are multiple transmission businesses within a given region. To recover their contribution toward paying a modified load export charge, or so they can recover additional revenue as their share in the receipt of a modified load export charge, the co-ordinating network service provider is required to bill each business in its region.

The Guidelines are not required to provide further clarification about inter-regional billing. The final rule already sets out how co-ordinating network service providers are required to bill each other. They include the requirement to set out reasonable details of how the modified load export charge has been calculated and that they issue bills in equal monthly instalment.[21] At this stage, we do not intend on elaborating on these requirements in the Guidelines.

The final rule requires the Guidelines to address intra-regional billing. In considering the amendment we should make, we referred to the rule change determination.

The Commission's rule determination stated that its preferred approach for the recovery of the modified load export charge would be on the basis of intra-regional, rather than inter-regional, utilisation. It decided 'on this approach because it better reflects the fact that all customers derive benefits from (or can be considered to have caused the need for) inter-regional capability, not just those located near the border'.[22] We think that this intention should be reflected in the Guideline.

Proposal 3

Where there is more than one transmission business in a region, the co-ordinating network service provider must provide details in its pricing methodology regarding how it will allocate any amounts receivable by or payment to other transmission businesses in accordance with clause 6A.29.5 of the NER.

Proposal 4

When allocating any amounts receivable by or payable to other transmission businesses as per clause 6A.29.5 of the NER, a co-ordinating network service provider is required to specify in its pricing methodology that the allocation of those amounts will be conducted according to intra-regional, rather than inter-regional, network utilisation.

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[20] NER, clause 6A.29A.4

[21] NER, clause 6A.29A.4(b).

[22] AEMC, *Rule determination: National electricity amendment (Inter-regional transmission charging)*, 28 February 2013, p. 26.

2.2.4 Other issues

The final rule provides that the co-ordinating network service provider in each region is required to provide details of all modified load export charges to apply for the following financial year. This must be done in accordance with the Guidelines and by 15 March each year.[23]

Prices for each of the categories of prescribed transmission services to apply for the following financial year are to be published by 15 May each year.[24] For clarification, prices are the unit cost of the service. Charges are derived from the 'price' multiplied by energy consumption or demand.

In order for a co-ordinating network service provider to publish transmission prices on time, it may have to rely on information from other transmission businesses. The NER requires 'each [TNSP] within a region must promptly provide information reasonably requested by the Co-ordinating Network Service Provider for that region to enable the proper performance of the co-ordination function'.

We propose amending the Guidelines so that transmission businesses are required to clarify in their pricing methodologies when they will provide information to a co-ordinating network service provider in their region.

Proposal 5

If a TNSP has appointed a co-ordinating network service provider in its region, then that TNSP must specify the timetable for provision of all necessary data to the co-ordinating network service provider for the calculation of the inter- and intra-regional transmission charges.

2.2.5 Questions

Questions

1. Has the AER considered all the amendments that need to be made to the Guideline? If not, are there any other proposed amendments which should be considered?

2. Do stakeholders have any other comments, or suggestions, about the amendments the AER has proposed to make to the Guidelines?

23 NER, clause 6A.24.2(b).
24 NER, clause 6A.24.2(c).

A Appendix A

The NER pricing principles provide the overarching regulatory framework for a transmission provider's pricing methodology. The following provides an overview of the three steps the pricing principles require a pricing methodology to follow. The first two steps are commonly known as 'cost allocation'.[25] The third involves developing a pricing structure.[26]

A.1 Step one: allocation to services

The first step required of a pricing methodology is a description of how a business will derive its annual service revenue requirement (ASRR). This involves allocating a business' adjusted MAR, known as the aggregate annual revenue requirement (AARR), to each category of prescribed transmission services that a business provides. In practice, they 'make an assessment of which assets were directly attributable on a causation basis to particular services at the date the Proposed Pricing Rule was published (24 August 2006)'.[27]

A.2 Step two: allocation to assets

The intention of the first step is to allocate a transmission provider's AARR *between* different categories of prescribed transmission services. The second step required under the NER transmission pricing principles involves a cost allocation *within* prescribed transmission services. The requirements in this step vary according to the category of prescribed transmission service:

- For prescribed exit and prescribed entry services, the ASRR must be allocated on the basis of an 'attributable cost share'. This involves determining the relative cost of a service provided to a network user as a proportion of the total cost of providing all prescribed entry and exit services.[28]
- The ASRR allocated to prescribed transmission use of system (TUoS) services must be allocated to transmission customer connection points on a locational and non-locational basis.[29] The locational component is based on 'estimated proportionate use'. The non-locational component is 'postage stamped', that is, the same $/MWh or $MW price is applied throughout the region. The portion of the locational and non-locational components must be a 50 per cent share.[30]
- The ASRR allocated to common transmission services must be recovered through a postage price. This is intended 'to limit any rebalancing of Prescribed Transmission Service charges to Transmission Customers in different locations and help maintain the stability and predictability of the pricing arrangements'.[31]

A.3 Step three: pricing structure

For the recovery of the ASRR, a business is to develop separate prices for each category of prescribed transmission services in accordance with the NER transmission pricing principles. This is

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[25] AEMC, Rule determination: National electricity amendment (Pricing of prescribed transmission services) rule 2006 No 22, 21 December 2006, p.29.

[26] AEMC, Rule determination: National electricity amendment (Pricing of prescribed transmission services) rule 2006 No 22, 21 December 2006, p.29.

[27] AEMC, *Rule Determination: National Electricity Amendment (Pricing of Prescribed Transmission Services) Rule 2006 No 22*, 21 December 2006, p. 30.

[28] NER, clause 6A.22.3.

[29] NER, clause 6A.23.3.

[30] Alternatively, the allocation can be based on a reasonable estimate of future network utilisation and the likely need for future transmission investment with the objective of providing a more efficient locational price.

[31] AEMC, Transmission pricing for prescribed transmission services: Rule proposal report, Proposed national electricity amendment (Pricing of prescribed transmission services) rule 2006, 24 August 2006 p. 61.

the third step which a transmission pricing methodology must address. The pricing principles that guide price structures are:

- For prescribed entry and exit services, TNSPs must determine a fixed annual price at each connection point that recovers the share of the prescribed entry or exit ASRR allocated to that connection point.
- For common transmission service ASRR and non-locational component of the prescribed TUoS service ASRR, prices must be postage stamped.
- For charges recovering the locational component of prescribed TUoS services ASRR, the pricing structure must be based on demand at times of greatest network utilisation for which investment is likely to be contemplated.