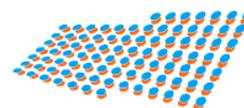


26 April 2006



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Ms Leisl Baumgartner,
Australian Energy Market Commission
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Sydney NSW 2001
Australia

Dear Leisl,

EnergyAustralia Derogation Request

I refer to EnergyAustralia's application for a non-contentious participant derogation dated 1 March 2006 (**the Application**).

Attached is a supporting submission in respect of the Application which contains the further information and pictorials sought by the Commission at our meeting on 14 April 2006. As it covers the same ground, this submission now supersedes the initial supporting submission that was lodged with the Application.

As noted in the Application, the purpose of this derogation is to enable the meters which have been installed at the boundary of the transmission and distribution parts of EnergyAustralia's network to be used for settlements and to calculate transmission loss factors, instead of the current process of extrapolation from other market data.

AS previously explained, it is important that the Application is approved and implemented by 1 July 2006, in order to facilitate an orderly transition for all participants. Whilst EnergyAustralia recognises that it is desirable to have simple and accessible briefing papers available to market participants, and has cooperated with the Commission's request for a further submission to facilitate this, EnergyAustralia trusts that the Commission's delay in the initial processing of the Application will not prejudice the determination of the Application by that date.

EnergyAustralia has consulted with NEMMCO (who is responsible for calculating the transmission loss factors and undertaking market settlements) and the Head of Metering and Settlements at NEMMCO has by email to Energy Australia, on 28 February 2006, stated that NEMMCO supports the proposed derogation.

More accurate settlements and loss factors delivered through the inclusion of the new metering points into the market from 1 July 2006 will significantly reduce the uncertainties and risks for all market participants operating in the affected region of the NEM, and are therefore to the benefit of all such market participants. EnergyAustralia is not aware of any party that would suffer a detriment as a result of the proposed derogation.

The derogation is, therefore, a non-contentious one and EnergyAustralia requests that it be processed as such by the Commission using its expedited process set out in section 96 of the National Electricity Law.

Yours sincerely,

Harry Colebourn
Manager – Regulation & Pricing



Submission: Energy Australia Participant Derogation Request

28 April 2006

1 The desirability of settlements based on accurate metering

National Electricity Market (NEM) settlements are intended to be conducted based on loss factors calculated up to, and down from, the transmission – distribution boundary.

Accurate metering as close to the transmission – distribution boundary as is practicable promotes the production of settlements data that sends optimal signals to all parts of the supply chain from generators in respect of production, networks in respect of loss abatement, to retailers in respect of procurement and end customer offers and to end consumers in respect of consumption of electricity and its substitutes.

2 Where do the Rules currently require *metering installations* to be placed?

At the connection point between networks owned by different market participants (or indeed between a network and any other participant to which it is connected) it is required that there be *metering installations* in place¹. Those agreed metering arrangements must also be satisfactory to NEMMCO².

Indeed, a further requirement is that a *connection point* cannot be registered by NEMMCO for inclusion in the market (ie. used directly for settlements purposes) unless NEMMCO is satisfied that the *metering installation* is Chapter 7 compliant³.

However, it is important to note that:

- (a) there is no explicit requirement for metering to be installed *within* a single participant's network; and
- (b) nothing in the Rules which prevents a participant (one that participates in the NEM in two or more capacities, say as a TNSP and a DNSP) from choosing to include new connection points and additional compliant metering for registration with NEMMCO.

3 The Transmission – Distribution boundary is highly significant for market settlements

At the broadest of conceptual level:

- (a) clause 3.6.1(a) identifies what are *inter-regional losses*;
- (b) clause 3.6.2(a) identifies what are *inter-regional losses*; and
- (c) clause 3.6.3(a) identifies what are *distribution losses*.

Establishing the quantities is not simply a matter of deducting the aggregate energy that is drawn from the network from the aggregate energy put into a network.

Rather, in respect of (a) and (b), it is NEMMCO who determines methodologies for determining what are the relevant inter- and intra-regional loss factors and then to calculate the loss factors. These tasks are within NEMMCO's guided discretion.

In respect of (c) the analogous function is undertaken by jurisdictional regulators and DNSPs.

¹ See clause 7.3.1A, clause 5.3.6(b)(2) and Schedule 5.6

² See clause 5.3.7(e)(3) and (f)

³ See clause 7.1.4(a)

It is implicit in certain of the concepts included in the 4 ½ pages of guidance provided in the Rules to NEMMCO, jurisdictional regulators and DNSPs as to how to exercise their discretion that the best available data is used (see for example clauses 3.6.2(3)(e), 3.6.2A(3) and 3.6.3(h)(1)).

However, again there is no explicit or implicit *requirement* nor *prohibition* in the provisions for the establishment of loss factors that metering be installed and registered for use by NEMMCO for settlements purposes at the TNSP/ DNSP boundary within a single network.

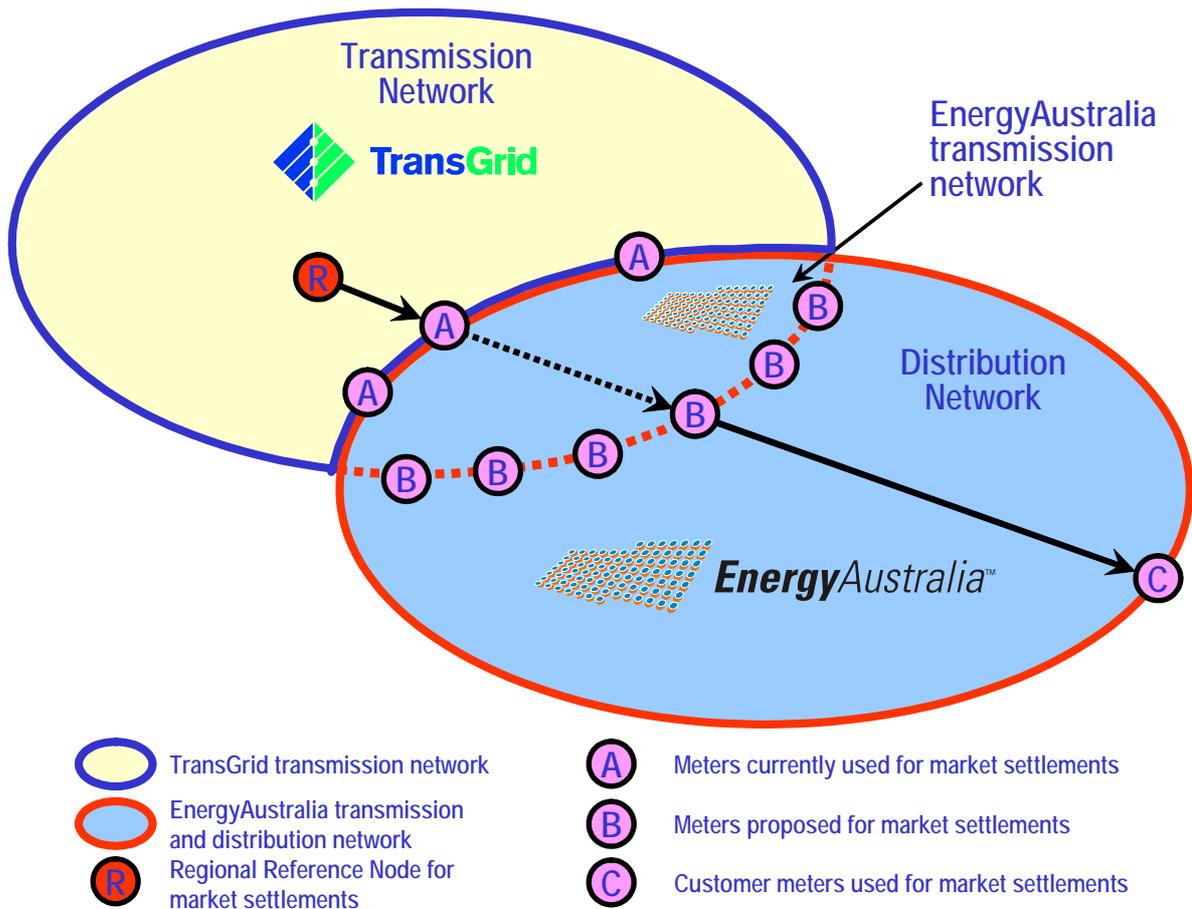
4 EnergyAustralia's network is a hybrid Transmission and Distribution network

EnergyAustralia is in a unique position in the National Electricity Market (NEM). Its network business is primarily a distribution business serving the Sydney, Central Coast and Newcastle Regions, yet some of the elements of its 132kV network are classified under the National Electricity Rules (Rules) as transmission, rather than distribution assets.

The classification of some elements of EnergyAustralia's 132kV network as transmission infrastructure results from the definition used in the Rules to classify Transmission Assets following commencement of the NEM. The Rules provide that Transmission assets include those assets of 220kV and above and any assets which operate in parallel with them. A significant portion of EnergyAustralia's 132 kV network runs in parallel to such higher voltage assets and are therefore deemed transmission assets.

Until recently, no other distributor was in this situation, although a small portion of Country Energy's network associated with Directlink recently was reclassified as transmission .

The diagram illustrates this unique configuration. The beige section is TransGrid's network which forms the bulk of NSW's transmission system. The blue is EnergyAustralia's network, the minority part of which is transmission (between the As and Bs) and the rest of which is distribution network.



-  TransGrid transmission network
-  EnergyAustralia transmission and distribution network
-  Regional Reference Node for market settlements
-  Meters currently used for market settlements
-  Meters proposed for market settlements
-  Customer meters used for market settlements

Consistent with the requirements of the Rules, EnergyAustralia has *metering installations* at the required connection points with other industry participants – transmission to transmission connection points with TransGrid and distribution to end customer connection points.

EnergyAustralia is not required to have NEMMCO registered *metering installations* between the transmission and distribution parts of its own network and, to date, EnergyAustralia has not had such *metering installations* in place. For transmission loss factors and distribution loss factors to be established it is necessary to extrapolate from other data.

Over time, the extrapolation process has been refined (see historical annexure) to seek to improve the accuracy of those loss factors, however, without *metering installations* registered for use at the boundary between the transmission and distribution parts of EnergyAustralia’s network, there would inevitably continue to be a degree of inaccuracy in both the loss factors and settlements.

EnergyAustralia has now completed the installation or refurbishment of *metering installations* at the boundary between the transmission and distribution parts of its own network but some of the associated primary equipment (current and voltage transformers) remains to be tested in the manner required by the Rules.

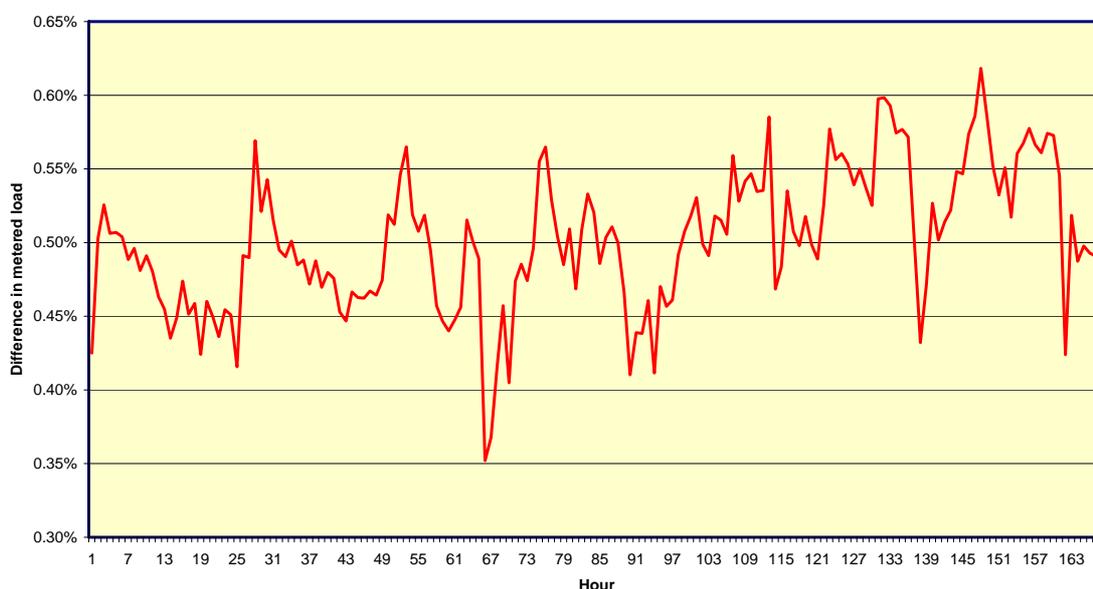
5 Why is a derogation required now?

5.1 *Metering installations* are now available for accurate transmission loss factor calculation and settlements.

Consistent with EnergyAustralia's concerns that transmission loss factor calculation and settlements should be accurate and made using metered data, and aware that accurate metering is necessary to provide appropriate pricing signals in the NEM according to the Market Objective, Energy Australia has undertaken an extensive program to install primary equipment and *metering installations* at the boundary between the Energy Australia transmission and distribution networks in the Sydney and Central coast region. This program is now close to completion.

Whilst metering has for the time being, continued at the *metering installations* located at TransGrid's transmission boundary A, and the new *metering installations* at B have not yet been transferred into the market, EnergyAustralia has been monitoring the performance of the *metering installations* at B to find there is only a small difference between the meter data recorded at the *metering installations* at A and the *metering installations* at B, consistent with the physical losses in EnergyAustralia's transmission network. The aggregate difference between energy metered at B and A is illustrated for the settlement week to 16 February 2006. As expected, this shows a daily variation as the physical losses in the network vary with the energy flows through it.

EA Observed Transmission Losses (Settlement Week Ending 16/12/06)



Because market settlements currently takes place at the metering installations at A, the actual losses of the EnergyAustralia network (shown above) are not taken into account in settlements, rather being included as a static adjustment to the transmission loss factors. This introduces inaccuracy in the settlements, degrading the associated price signals to all participants.

EnergyAustralia is now confident that the new *metering installations* installed at B are ready to be transferred into the market. Due to the interconnected nature of meshed transmission network, this would require the simultaneous transfer to the new *metering installations* at B and the deregistering of the *metering installations* at A.

5.2 A strict application of the current Rules will delay the transfer of new *metering installations* to market.

Despite the *metering installations* now being ready to be transferred into the market, a derogation to the Rules is now required if this is to be achieved. This is the a result of Schedule 7.3.1 and Schedule 7.3.2 of the Rules which specify requirements in relation to the inspection and testing of *metering installations* respectively. Importantly, table S7.3.2 sets out that the

maximum period between testing for type 2 and type 3 *metering installations* is 10 years. Without the proposed derogation, 67 *metering installations* in the Sydney and Central Coast region (representing 20 Transmission Node Identifiers) could not be used for settlements purposes because the instrument transformers have not been tested within the required period. The compliant *metering installations* (of which there are 32 *metering installations* representing 9 Transmission Node Identifiers) could also not be used because, as mentioned above, the transfer of these *metering installations* to the market must take place simultaneously.

A significant programme of testing is required to achieve full compliance with the Rules in respect of all relevant *metering installations*. This program has commenced and involves the procurement of new mobile test equipment and resources to perform accuracy testing of all the remaining primary equipment. It is anticipated that the scheduling this work would take 2 - 3 years, as it requires significant network outages to obtain access to the instrument transformers.

The delay incurred should EnergyAustralia have to comply with this rule would prolong the use of estimated transmission loss factors, rather than accurately metered settlements. This would in turn continue the use of inaccurate pricing signals and undermine the levels of efficient investment in the NEM.

5.3 Key indicators that the *metering installations* are accurate

The following factors support EnergyAustralia's proposed course of action:

- An ongoing comparison of meter data between the current connection points and the *metering installations* at the new boundary has displayed an overall level of accuracy well within that required by the Rules for type 2 and type 3 installations, after allowing for calculated network losses.
- A significant proportion of the primary equipment involved was transferred from TransGrid to EnergyAustralia in 1999 and has no test data, never having been used for revenue metering purposes. However at all locations primary equipment nameplates indicate the equipment is of a compliant class or accuracy level.
- The probability of primary equipment not being compliant to the accuracy levels specified in S7.2.3.1 is negligibly small. In 57 of the 99 metering points that comprise the Sydney and Central Coast region where recent or historical test reports are available, all test reports show compliance with nameplate ratings.
- The *metering installations* at the majority of connection points are new with test results and all others have been tested within the maximum allowable period as required under S7.3.2.

5.4 The relief sought is only temporary

With the *metering installations* immediately put into service to provide actual transmission – distribution boundary data for settlements, EnergyAustralia will expeditiously test the *metering installations* and, upon conclusion of that testing program in three year's time, the situation would be fully regularised and the derogation would lapse.

EnergyAustralia would regularly inform the AEMC of progress in the testing program.

6 What is the proposed rule?

EnergyAustralia proposes a Rule change in the form of a participant derogation to the Rules, to, in respect of type 2 and type 3 *metering installations* associated with the 33 Transmission Node Identifiers in the Sydney and Central Coast region, suspend the operation of the following clauses until 1 July 2009:

- 7.3.1(a)(2) (which requires a *metering installation* to be accurate in accordance with clause 7.3.4);
- 7.3.4(a) (which provides that the type of *metering installation* and the accuracy requirements for a metering installation which must be installed in respect of each connection point are to be determined in accordance with schedule 7.2);
- 7.6.1 (a) (which provides that testing of a metering installation must be carried out in accordance with the inspection and testing requirements detailed in schedule 7.3).

A draft of the proposed participant derogation is set out in Attachment B.

7 How does the Rule Change promote the National Electricity Market Objective?

The National Electricity Market Objective is set out in section 7 of the National Electricity Law, and is reproduced below.

The national electricity market objective is to promote efficient investment in, and efficient use of, electricity services for the long term interests of consumers of electricity with respect to price, quality, reliability and security of supply of electricity and the reliability, safety and security of the national electricity system.

Under the National Electricity Law, the AEMC has rule making functions and powers in respect of the National Electricity Rules. In performing or exercising these functions and powers the AEMC must have regard to the National Electricity Market Objective.⁴

The Rule change proposed above will contribute to the National Electricity Market Objective by allowing for the measurement of transmission loss factors at the true transmission/distribution boundary for the purpose of market settlements. This was the intended arrangement envisaged from the start of the NEM.

The cost reflective pricing of electricity is critical to providing correct pricing signals to all participants which will encourage:

- end customers to make economically rational decisions on their energy consumption, with both short and long term implications;
- allow market participants to make economically rational decisions on their electricity generation, energy sale and investments in the abatement of losses again with short and long run effects.

Most significantly, moving to the use of actual metered settlements data rather than estimated settlements data enables consumers to make informed long run decisions concerning the quantities of energy consumed and the mix between electricity and other energy sources. It also enables the optimal level and location of generator investments, investments by networks in abating losses and the correct pricing signals for retail participants in the key Sydney part of the National Electricity Market.

Enhancing the accuracy of transmission loss factors and settlements processes is a critical factor in delivering efficient investment in and efficient use of electricity services.

⁴ Section 32 of the National Electricity Law.

Attachment A: Historical Context

To be read with diagram at 4.

Time period	Settlement arrangements
Prior to July 2001	A NSW derogation classifies the whole of EnergyAustralia's network as distribution network notwithstanding that some of it operates at 132 kV in parallel with the main transmission network.
Between July 2001 and June 2004	EnergyAustralia's transmission assets are now recognised, market settlements remains at the <i>metering installations</i> labelled A, as not all <i>metering installations</i> are in place at B. However, in following the requirements of the Code, NEMMCo calculates transmission loss factors between R and A. EnergyAustralia is obliged by the Code to calculate distribution loss factors from the interface between the transmission and distribution network, between B and C. As a result, the losses in the EnergyAustralia component of the transmission network are unaccounted for resulting in significantly distorted settlements.
From July 2004 to the present	The Code is changed to provide for the calculation of "forward looking loss factors", with NEMMCo using estimated loads where market registered <i>metering installations</i> are not present. This is a hybrid arrangement, as the <i>metering installations</i> at interface A are used for settlements, but the transmission loss factors are estimated to beyond the market boundary, at interface B. The fact that the settlements boundary and <i>metering installations</i> do not align leads to inaccuracies in the market settlements, which presents financial risk to both the host and Tier 2 Retailers.

Attachment B: Proposed Rule

PART X – PARTICIPANT DEROGATION GRANTED TO ENERGY AUSTRALIA: INSPECTION AND TESTING REQUIREMENTS FOR METERING INSTALLATIONS

1. Period of derogation

(a) *This participant derogation commences on 1 July 2006 (for the purposes of this participant derogation, such date is referred to as the ‘commencement date’).*

(b) *This participant derogation ceases to apply on 1 July 2009.*

2. Definition

Sydney and Central Coast transmission metering installations means any type 2 or type 3 metering installation located at the interface between Energy Australia’s Greater Sydney and Central Coast transmission network and Greater Sydney and Central Coast distribution network. There are Sydney and Central Coast metering installations located at the following substations in the Greater Sydney and Central Coast region:

SUBSTATION NAME	TRANSMISSION NODE IDENTIFIER (TNI)
Beaconsfield West	NBFW
Bunnerong	NBG1
Bunnerong	NBG3
Charmhaven	NCHM
Chullora	NCHU
Campbell St	NCSH
Canterbury	NCTB
Drummoyne	NDRM
Gosford	NGF3
Gosford	NGSF
Green Square	NGSQ
West Gosford	NGWF
Homebush Bay	NHBB
Haymarket	NHYM
Lane Cove	NLCV
Meadowbank	NMBK
Marrickville	NMKV
Mason Park	NMPK

SUBSTATION NAME	TRANSMISSION NODE IDENTIFIER (TNI)
Macquarie Park	NMQP
Ourimbah	NORB
Peakhurst	NPHT
Pyrmont	NPT1
Pyrmont	NPT3
Rozelle	NRZH
Rozelle	NRZL
Sydney East	NSE2
Somersby	NSMB
Sydney North	NSN1
St Peters	NSPT
Sydney South	NSYS
Vales Point	NVP1
Vales Point	NVP3
Wyong	NWYG

3. Operative provisions

During the period of this *participant derogation*:

- (a) clauses 7.3.1(a)(2); 7.3.4(a), and 7.6.1(a) of the Rules do not apply to Energy Australia in respect of *Sydney and Central Coast metering installations*; and
- (b) for the purposes of the Rules, the *Sydney and Central Coast metering installations* and the data from them shall be treated as if those *metering installations* were compliant with clauses 7.3.1(a)(2); 7.3.4(a), and 7.6.1(a) of the Rules.

4. Reporting

On or before 30 June in each year that this *participant derogation* is in effect, Energy Australia will report to the AEMC on the progress in the inspection and testing of type 2 and type 3 *metering installations* in the Greater Sydney and Central Coast region.