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FROM THE OFFICE OF THE
CHIEF EXECUTIVE OFFICER

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Submitted by email: AERInquiry@aer.gov.au

Dear Tom,

Re | Issues Paper – Regulatory Investment Test for Transmission

We refer to the AER's Issues Paper relating to its obligation to develop guidelines for the Regulatory Investment Test for Transmission (RIT-T) under new rule 5.6.5B of the National Electricity Rules (NER). AEMO welcomes the opportunity to respond to the Issues Paper and looks forward to continuing its involvement in this consultation process.

The major issues that AEMO wishes to raise in this stage of the consultation centre around the treatment of costs relating to the proposed Carbon Pollution Reduction Scheme (CPRS) and the Extended Renewable Energy Target (ERET), valuation of optionality and the potential use of a general equilibrium analysis to identify the benefits relating to transmission investments. These issues, including other comments and observations, are dealt with in greater depth in the attached Submission.

If you have any questions, please call Franc Cavoli on (03) 8664 6616.

Yours sincerely



Matt Zema
Managing Director and Chief Executive Officer

Attachment: Submission - Regulatory Investment Test for Transmission

REGULATORY INVESTMENT TEST FOR TRANSMISSION

**Submission in Response to the Australian Energy Regulator's Issues Paper in relation
to the establishment of Guidelines for conducting a RIT-T**

1. Introduction

In its review into the national transmission planning arrangements, the Australian Energy Market Commission (AEMC) introduced new rules relating to the economic justification of transmission investments in the National Electricity Market (NEM). A new test, now referred to as the Regulatory Investment Test for Transmission (RIT-T) was devised that will, from 1 August 2010, replace the existing Regulatory Test and is detailed in new rule 5.6.5B of the National Electricity Rules (NER).

The new rule requires the Australian Energy Regulator (AER) to develop guidelines to assist Transmission Network Service Providers (TNSPs) apply the RIT-T and publicly consult in accordance with the NER. AEMO has considered the issues raised in the first stage of the consultation process (the Issues Paper) and provides its response below. AEMO looks forward to taking part in the rest of the consultation process.

2. Competition Benefits

The AER has suggested that competition benefits remain as a class of benefit in the RIT-T in the same manner as it was in Version 3 of the guidelines to the current Regulatory Test. AEMO agrees with the AER's view in this regard.

The removal or diminution of constraints on the transmission system has the potential to affect generator access to the Regional Reference Node and therefore affects bidding behaviour. Any net positive (or indeed negative) effects on the market should be taken into account as a class of market benefit since they are not dealt with in other classes of market benefits.

However, AEMO believes the application of the competition benefits guidelines lacks some detail regarding how the benefits may be properly modelled. To explore this further, AEMO would like the AER to consider devising a realistic example of a constraint that might benefit from an augmentation and consider the assumptions and modelling required to determine the potential competition benefits in the next stage of this consultation process. AEMO would be prepared to assist the AER to devise such an example.

3. Option Value

AEMO agrees in principle with the AER's position that if done properly, option benefits should be identified and valued appropriately in a scenario based cost benefit analysis such as the RIT-T. In AEMO's view, provided that the market benefits of all options are valued consistently and appropriately weighted scenarios are applied to the options, then each option will comprise the value of any inherent flexibility or optionality.

This concept is supported by standard texts on the subject. One standard text states the following:

Examples of options on the assets side of the balance sheet primarily have to do with flexibility. A company that has the option to shut down and restart operations, or abandon them, is more flexible and therefore more valuable than the same company without these options.¹

The conclusion therefore is that if the option has built-in flexibility, that increase in utility will be reflected in the market benefits generated by the asset. There is no reason a non-network solution cannot be valued in the same way. If the non-network solution allows the TNSP flexibility to defer a network solution, the value of that deferral is the market benefit.

Therefore the question in the Issues Paper regarding whether real options should be used to determine a more precise estimate of option value is probably not the right question to try and answer. Real options analysis can be accommodated in a properly conducted cost benefit analysis. The New Zealand Electricity Commission in its draft decision into Transpower's Auckland 400kV grid investment proposal stated:

Real options analysis could be viewed as an extension of the traditional NPV technique where the analysis still quantifies the benefits less the costs (as with traditional NPV analysis), but also calculates the value of any real options and compares this against costs and benefits in a probabilistic sense to model uncertainty. If the future were certain, then standard NPV and real options analyses would yield the same economic result.²

If this is correct, then by including probabilities of future uncertainties along with appropriate treatment of the alternative in successive periods in the cost benefit analysis (to try and deal with that future uncertainty) it will provide the appropriate valuation of an option's flexibility.

The more important question is whether optionality should be a separate class of benefit. As stated above, AEMO's view is that provided that cost benefit analysis is conducted with appropriate consideration of the options under all reasonable and reasonably weighted scenarios, most option benefits should be captured. Indeed, if there is a separate class of market benefit for optionality, it could lead to confusion and the potential for double counting

¹ Copeland, Koller, Murrin (McKinsey & Company Inc) *Valuation, Measuring and Managing the Value of Companies*, second edition, John Wiley & Sons, Inc., p. 446.

² Draft decision on Transpower's Auckland 400kV grid investment proposal for the purposes of consultation under section III of part F of the Electricity Governance Rules 2003, 27 April 2006, p.41

of benefits. Despite this, we can conceive of at least one situation where option benefit as a separate class may prove useful. In ensuring that it has the optimal flexibility to carry out the planned development of its network, a TNSP may wish to pre-emptively purchase easements prior to those easements either becoming too expensive to develop (as a proportion of the project's benefits) or are no longer available due to inconsistent use. The option value of acquiring the easements is in this case to be determined discretely since the value of acquisition of the easements needs to be done before the nature and costs of the projects are properly defined. AEMO understands that there is a question regarding whether acquiring an easement is an "augmentation" under the NER however, should a TNSP wish to conduct a RIT-T analysis for this situation, it should have the flexibility to value it discretely. Accordingly, sub-rule 5.6.5B(c)(ix) should be retained.

4. Treatment of CPRS

Under the proposed CPRS scheme, an emitter of carbon dioxide and other greenhouse gases is required to purchase sufficient permits to allow it to discharge those gases into the atmosphere. The price of those permits will be set by a market in those permits and will be affected by the emissions targets that the Federal government will review every five years.

AEMO agrees with the Allen Consulting Group's analysis that the purchase of carbon permits should be treated in "the same way as any other generation input".³ However, AEMO believes that there may be some value in the AER providing some guidance on how to develop scenarios regarding permit pricing. There may be a number of reviews of the target that could occur during a network asset's lifetime and each of those will involve a number of scenarios. Therefore, it may be worthwhile devising a framework to enable consistent treatment in the forward valuation of permits particularly through the government's review periods.

Likewise, the AER may wish to publish greenhouse gas intensity factors of various fuels that should be used in a RIT-T analysis or at least suggest which publication(s) to use as authority so as to allow for consistent treatment across the industry.

³ The Allen Consulting Group, *Climate change policies and the application of the regulatory investment test for transmission*, December 2008, p. 9 (prepared for the AEMC in relation to its Review on energy market frameworks in light of climate change policies).

5. Expanded Renewable Energy Target (ERET)

The Federal government has mandated a target of 20% of Australia's electricity should be obtained from defined renewable sources. The ERET works as a subsidy to eligible renewable energy sources which is funded from a "surcharge" in the form of a liability placed on electricity purchasers (liable entities) to purchase a certain proportion of their electricity portfolio from renewable sources. The mechanism that ensures funding of the subsidy is the legal requirement for liable entities to purchase Renewable Energy Certificates (RECs) from eligible renewable energy producers at a value determined by the REC market and is in excess of any price per MWh for the generator's output.

AEMO agrees with the AER's analysis that to take the cost of RECs into account as a discrete element would amount to double counting because the price effects of RECs have been taken into account in the expected changes to the generation pattern. AEMO also agrees with the proposition that the value of RECs above the actual cost of renewable generation amounts to a wealth transfer. Therefore, where the RET target has been met, the value of RECs or REC price should not be taken into account. Yet it is legitimate to include the cost of penalty payments where the RET target has not been met.

This view is a fair one and in terms of economic thinking is correct. However, as noted above, the ERET scheme is a subsidy to a certain category of producer. The amount of the subsidy is flexible in that the price is set by a market for the RECs but in an effort by the scheme's devisor's to limit the overall cost of the program, the REC price is ultimately capped by the penalty charge. In this context, AEMO does not see why an attempt is not made to reduce the overall costs of the scheme on the market by co-optimising the net benefits of the next most efficient renewable source with the network option required to accommodate it. This can be done by comparing the net benefits (generation source and network) of the preferred option and comparing it to the next best generation source/network solution. With all other variables remaining constant, if the preferred option contributes to the ERET target at a lesser overall cost, that should be the preferred outcome.

Applying the RIT-T in this manner does have implications for wealth transfers but AEMO would argue that if done correctly, it will not diminish investment signals since a comparison is made only among the most efficient renewable investments and should mirror what should have occurred anyway. In addition, it should lessen the chances of failing to meet the target by achieving a similar investment outcome at an overall lower cost.

6. Modelling Methodology

AEMO would like to explore further an approach to assessing a transmission investment that was seemingly previously ruled out by the ACCC and ask the AER to consider a review of the ACCC's 1999 statement that "the regulatory test only includes costs and benefits which are directly related to the proposed project (i.e. a partial equilibrium analysis) and any second

round effects on other areas of the economy (i.e. a general equilibrium analysis) are not taken into account."

AEMO is investigating whether a general equilibrium model approach is an appropriate way of defining the benefits of an investment. On an initial assessment there are at least two reasons why a general equilibrium analysis could deliver a more appropriate result than a partial equilibrium one. The first is that when assessing a transmission investment, the partial equilibrium analysis has tended to place emphasis on the movements in bids, costs and dispatch in the wholesale spot market. These movements have tended to be marginal, challenging to model properly over the life of the asset and may not accurately reflect the overall benefits to the electricity market of an ultimately efficient investment. Electricity is an important component to the national economy. Movements in its average delivered price and its reliability are very likely to affect how the economy as a whole reacts and conforms. By considering the average delivered price of electricity in a general equilibrium analysis of the broader economy, valid benefits may be identified that cannot be captured in a partial equilibrium analysis. The second is that there are second round effects in the economy that a general equilibrium analysis should be able to quantify that would not be picked up in a partial equilibrium model.

AEMO would like to work with the AER over the course of this consultation to explore the appropriate application of this modelling approach.

7. AER questions answered

Q1 Are there any additional classes of costs or market benefits (other than those set out in the Electricity Rules) which should be included in the RIT-T?

A1 **AEMO cannot identify any additional classes of costs or market benefits.**

Q2 Do some classes of market benefits or costs set out in the Electricity Rules (such as competition benefits and option value) require further clarification in the RIT-T?

A2 **The treatment of CPRS and how to deal with future movements in the emissions targets may need to be clarified.**

Q3 Is the current definition of competition benefits in the regulatory test suitable for inclusion in the RIT-T? Are there any alternative definitions which the AER should consider?

A3 **AEMO suggests that the AER (with assistance from AEMO if it desires) develop a realistic example to allow issues to be teased out, discussed and addressed by stakeholders in the subsequent stages to this consultation.**

Q4 What methods for incorporating option value as a class of market benefits under the RIT T should the AER consider?

A4 AEMO is of the view that in general option value can be properly dealt with as part of a scenario based cost benefit analysis. However, there may be some cases (e.g. easement acquisition) where discrete identification of option value is appropriate.

Q5 Should the current provision in the regulatory test regarding the methods that must be used in estimating costs and benefits be adopted in the RIT-T?

A5 A good starting point for exploring whether the current methods are appropriate would be the same as with Q3 on competition benefits. The development of a realistic example would allow issues to surface and be addressed in the subsequent stages to this consultation. The example should be relevant enough to give a clear idea of changes in generation costs and how to deal with SRMC and LRMC.

Q6 What methods for estimating market benefits which may occur outside a TNSP's region are appropriate for inclusion in the RIT-T?

A6 It was always intended that the regulatory test should try to calculate benefits across the entire NEM. If, when carrying out the regulatory test, net benefits are limited to the region in which the investment is located, then it is arguable that the test has not been conducted in accordance with the Guidelines. This implies some knowledge of generation costs and customer reliability valuations in other jurisdictions which may require some information exchange between TNSPs in the various regions.

Q7 Should the RIT-T and application guidelines adopt the same approach to specifying the appropriate discount rates to be applied as the regulatory test (version three) and application guidelines?

A7 AEMO believes that the same approach as the current regulatory test (version 3) is appropriate.

Q8 Is the proposed approach an appropriate means of treating the CPRS under a RIT-T analysis?

A8 See discussion relating to the treatment of CPRS scheme.

Q9 Are there any alternative approaches to treating the CPRS which the AER should consider?

Q9 See discussion relating to treatment of CPRS scheme.

Q10 Is the proposed approach conceptually sound and an appropriate means of treating the expanded RET under a RIT-T analysis?

Q10 See discussion relating to treatment of the ERET scheme and RECs.

Q11 Are there any alternative approaches to treating the expanded RET which the AER should consider?

Q11 See discussion relating to treatment of the ERET scheme and RECs.

Q12 Are there any additional areas (other than those set out in the Electricity Rules) that should be addressed in the application guidelines?

Q13 Are there any areas where interested parties have views on the form or substance of the matters that the applications guidelines should address?

Q14 Do aspects of the current regulatory test application guidelines provide useful information which should be adopted in the RIT-T application guidelines?

Q15 Are there any particular areas where further guidance on the RIT-T assessment process would be useful?

Q16 What guidance on the dispute resolution process would be helpful to interested parties? Are there any particular areas where more detailed guidance on the process would be useful?

Q17 Do the current regulatory test dispute resolution guidelines provide useful information on the current process for raising and resolving regulatory test disputes?

AEMO has no comments or suggestions in relation to Q12 to Q17.