DIRECTLINK JOINT VENTURE

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27 July 2005

Mr Warwick Anderson
Acting General Manager, Access Branch
Australian Energy Regulator
470 Northbourne Avenue
CANBERRA ACT 2600

Dear Warwick

Re: Application for Conversion to a Prescribed Service and a Maximum Allowable Revenue to June 2015

The AER has recently received four submissions from stakeholders in response to consultants' reports on the Directlink Joint Venturers' conversion application.

The Energy Retailers Association of Australia ('**ERAA**') has responded to the PB Associates report *Review of Directlink Conversion application, Final Report* of 26 November 2004 ('**PB Associates report**'), and TXU, Powerlink and Origin Energy have responded to the Intelligent Energy Systems report *Directlink Conversion Application – Review of interregional market benefits* of 26 April 2005 ('**IES Report**').

We are pleased to address the issues raised in these submissions and our response in contained in Attachment 1. As we prepared our response, we consulted with our consultants Burns and Roe Worley and TransÉnergie US.

Please feel free to contact Ms Sandra Gamble of The Allen Consulting Group if you need her assistance on any matter pertaining to this submission.

Yours sincerely

Dennis Stanley
Directlink Joint Venture Manager

Encl.

ATTACHMENT 1

Prepared for the purpose of informing the Australian Energy Regulator (AER) on matters associated with the Directlink Joint Venturers' application of 22 September 2004[1].

RESPONSES TO STAKEHOLDER ISSUES

The Energy Retailers Association of Australia ('**ERAA**') has responded to the PB Associates report *Review of Directlink Conversion application, Final Report* of 26 November 2004 ('**PB Associates report**'), and TXU, Powerlink and Origin Energy have responded to the Intelligent Energy Systems report *Directlink Conversion Application – Review of interregional market benefits* of 26 April 2005 ('**IES Report**').

This document provides that Directlink Joint Venturers' responses to the issues raised by these stakeholders.

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[1] Directlink Joint Venturers, *Application for Conversion to a Prescribed Service and a Maximum Allowable Revenue for 2005-2014* ('**Directlink conversion application**'), 22 September 2004.

SUBMISSION FROM THE ENERGY RETAILERS ASSOCIATION OF AUSTRALIA

1. Directlink's performance incentive scheme

Issue:

The ERAA's submission of 18 April 2005 focuses upon the determination of Directlink's performance incentive scheme or 'service standard'. The ERAA puts forward the view that Directlink's service standard must create incentives for the network owner to deliver the specific benefits identified by the regulatory test. It suggests an 'incentive amount' be determined and that an ex-post estimation of whether the benefits have been achieved. We assume that the ERAA are suggesting that the incentive payment payable would be determined with regard for the estimation of benefits actually achieved.

Response:

The ERAA proposal is inappropriate for Directlink given the current transmission regulation regime and has substantial practical difficulties for the reasons below. We have repeated here some of the material that we put forward on 24 August 2004 and 17 November 2004, as well as addressing the ERAA's proposal specifically.

For the purposes of the performance incentive scheme in their application, the Directlink Joint Venturers have proposed to place 1% of their regulated revenue at risk, which is consistent with the levels of revenue at risk that the ACCC has determined recently for other TNSPs.[2]

In the case of Directlink, the performance measure of transmission circuit availability captures all of Directlink's appropriate service attributes over which we have control.

The Directlink Joint Venturers note that the AER is currently at an early stage of its work to develop the principles that it will apply to the reporting of performance and the establishment of performance incentives for TNSPs. This work is challenging given the current NEM market design and the role and regulation of TNSPs in the market. Most importantly, when considering whether a higher level of TNSP revenue should be placed at risk in relation to performance or whether a TNSP should be subjected to competitive disciplines, the AER must have regard to the material adjustment that would have to be made to the TNSP's WACC.

At this stage, while the AER continues to determine regulatory WACCs in the manner it does—assuming a low variance in cash flows that permits a higher level of debt financing than for unregulated activities—the Directlink Joint Venturers believe that the AER could only justify placing small amounts of TNSP revenue at risk.

Further, the extent to which Directlink can provide economic benefits to all those who produce, consume and transport electricity can be estimated by applying the principles of the regulatory test for a range of scenarios. The actual level of

[2] Examples include the ACCC's recent transmission revenue cap decisions for TransGrid (2005), EnergyAustralia (2005), Transend (2003), Murraylink Transmission Company (2003), SPI PowerNet (2002) and ElectraNet SA (2002).

economic benefits, which may be higher or lower than that estimated, will be a function of a broad range of factors, most of which are totally outside the control of the Directlink Joint Venturers. These factors include the level of load growth, the reliability of generation and network owned by other parties, and the investment and operating decisions made by a range of merchant and regulated businesses. Isolating the influence that Directlink has had upon the level of benefits achieved would be a subjective exercise and would not create a fair measure for the determination of Directlink's revenue.

When Directlink becomes a regulated interconnector, the Directlink Joint Venturers will have an explicit legal obligation to maximise Directlink's availability under clause 5.2.3(e) of the National electricity Code. The Directlink Joint Venturers take this obligation seriously. We believe that this obligation and the performance incentive scheme we have proposed create a substantial and appropriate level of incentive for us to operate Directlink in a manner that maximises the extent to which it will provide benefits.

SUBMISSION FROM TXU

2. Competitive neutrality

Issue:

TXU believes that the regulatory test is applied to ensure competitively neutrality and efficiency between market based investments and regulated investments and that this objective will only be met if project proponents claims are restricted to the allowable benefits as prescribed in the regulatory test. In light of this, it supports IES's comments regarding the modelling assumptions that have been made in claiming the interregional benefits specifically as they apply to the amount of the benefits claimed.

Response:

The Directlink Joint Venturers agree with TXU that the Code requirement to apply the regulatory test is designed to ensure competitively neutrality and efficiency between market based investments and regulated investments.

We do not hold a strong view as to whether this objective will only be met if project proponents can claim only the 'allowable benefits' as prescribed in the [current] regulatory test given the test is frequently under review. What we can say is that the Directlink Joint Venturers have only sought to estimate the types of benefits described in the current regulatory test for the purposes of the Directlink application.

In its report, IES's comments regarding the modelling assumptions related principally to the network topology and generator input costs that TEUS employed. The Directlink Joint Venturers have provided a detailed response on 18 May 2005 confirming that:

- In January 2005, TEUS resimulated its Alt-0-1-2 medium growth LRMC bidding case using a revised PROSYM topology that includes a separate N-NSW and NSW subregion. TEUS has provided sufficient detail in its previous explanation

to IES that confirms TEUS's original results are robust. IES has indicated that it requires more 'analysis details' to be persuaded of this view and we would be pleased to provide such details in the form specified by IES.

- TEUS's modelling used annualized generator costs based on those the Inter-regional Planning Committee (IRPC) and NEMMCO developed and used for the purposes of their assessment of SNI[3]. TEUS updated the IRPC costs using the limited data available in the 2003 ACIL Tasman Report[4]. IES provided no evidence as to why the generator costs that TEUS used for its original modeling were unreasonable other than to claim they are "unsupported". In fact, we believe that they are well supported and were very reasonable for the circumstances that existed at the time our modeling was conducted.

3. Onus of proof

Issue:

TXU believes that there should be a strong 'onus of proof' on the proponent of the project in question to satisfy all aspects of the regulatory test given the material impact that network investments can have on the economic value of market based investments in the supply chain and on final electricity prices to users.

Response:

We agree that the regulatory test should be applied diligently and transparently.

The Directlink Joint Venturers have sought to apply the letter and spirit of the regulatory test in accordance with its terms and according to good industry practice. We have always provided all the explanations and data requested by the AER and its consultants, and many that were not.

4. Independent evaluation

Issue:

TXU supports an independent evaluation of the application of the regulatory test in accordance with its original submission in the "Review of the regulatory test for network augmentations" 11 August 2004.

Response:

We support the AER's independent review of the Directlink conversion application. This is the type of review we anticipated in the light of the AER's consideration of the Murraylink decision.

[3] Inter-regional Planning Committee, *IRPC Stage 1 Update Report* ('**SNI Stage 1 Report**'), December 2000.
[4] ACIL Tasman, *SRMC and LRMC of Generators in the NEM* ('**2003 ACIL Tasman Report**'), published by the IRPC and NEMMCO in April 2003.

5. Regulatory precedents

Issue:

TXU believes there is a need for a stable regulatory test to ensure that it achieves its objectives and encourage a more stable regulatory framework. As such, it supports the AER's position to draw on the regulatory precedents already established in determining the outcome of this process.

Response:

The Directlink Joint Venturers strongly support TXU's view that it is appropriate for the AER's position to draw on the regulatory precedents already established. The two previous cases TXU quotes, SNI and Murraylink, are relevant examples. Directlink modelled its application on the AER Murraylink decision, which until the past few months, was the only guidance we had as to what the AER expected.

Many of the issues that IES raises in its report are issues with the Murraylink and SNI precedents themselves.

6. Discount rates

Issue:

TXU has concerns regarding the discount rates applied to the 'market development scenario' analysis as applied by the Directlink Joint Venture. TXU suggests a pre-tax real discount rate of 14%.

Response:

We repeat here our previous response to the same issue TXU raised in June 2004[5].

In applying the regulatory test, the Directlink Joint Venturers proposed to use a commercial discount rate that has been estimated with reference to capital market information, following a methodology similar to that the AER accepted in the Murraylink decision[6]. As judgement is required in interpreting market evidence, the Directlink Joint Venturers have also had regard to the discount rates adopted in other applications of the regulatory test.

In determining the appropriate commercial discount rate, the Directlink Joint Venturers recognised that most of the inputs to a commercial discount rate are industry-wide parameters, that is, parameters that would be the same across regulated and non-regulated activities and which cannot easily be observed from market evidence (and hence tend not to be updated mechanistically).[7] For these parameters, the Directlink Joint Venturers applied the same input values that were adopted in the estimation of their regulatory cost of capital, that is:

[5] Letter from the Directlink Joint Venturers to the ACCC on 24 August 2004, pp. 12-4.
[6] Murraylink decision, pp. 84-5.
[7] Directlink conversion application, pp. 29-33.

- nominal and real risk free rates of 5.54 per cent and 2.94 per cent, respectively, and an implied inflation forecast of 2.53 per cent;
- market risk premium of 6 per cent; and
- value of imputation credits ('gamma') of 0.50.

On the other hand, there are input parameters that are dependent on the specific nature of a particular activity. These are:

- the financing assumptions (namely, the assumed gearing level and cost of debt);
- the beta; and
- the effective tax rate.

In their conversion application, the Directlink Joint Venturers discussed assumptions adopted for these inputs in turn.

The Directlink Joint Venturers proposed a commercial discount rate that assumes a benchmark gearing ratio of 40 per cent debt-to-assets for the unregulated activities in the electricity supply industry, as TXU has suggested, and that an unregulated entity with this credit rating could maintain a credit rating of BBB+. This gearing level is substantially lower than the 60 per cent gearing level assumed for the Directlink's regulated activities. The difference reflects the likelihood that the greater variance in cash flows for the unregulated activities may not permit the same level of debt financing as that of the regulated activities. With reference to the long term average of the yields predicted by the CBASpectrum service for 10 year, BBB+ rated debt, the Directlink Joint Venturers gleaned a benchmark debt margin of 1.50 per cent, implying a cost of debt of 7.18 per cent.

The Directlink Joint Venturers derived an equity beta proxy by taking the simple average of the observed equity betas for the firms listed on the Australian Stock Exchange whose primary activities were in the unregulated activities in the Australian electricity market, which implied a relevered equity beta of 1.13 for the assumed gearing level of 40 per cent debt to assets. The relevered equity beta that would be consistent with a target gearing level of 60 per cent debt to assets would be 1.70. This equity beta compares to the equity beta of 1.13 that was assumed for Directlink's regulated activities, implying that it has been assumed that the unregulated activities in the Australian electricity supply industry have a substantially higher level of risk than the regulated activities.

The Directlink Joint Venturers calculated a real pre-tax discount rate using the forward-transformation, that is, grossing-up the 'Officer' version of the post-tax nominal WACC for taxation, and then deducting inflation (using the Fisher transformation). Accordingly, it has been assumed that the effective tax rate is equal to the statutory tax rate.

The Directlink Joint Venturers' base case commercial discount rate of 9% is consistent with the discount rate accepted by the ACCC in its Murraylink decision

and falls within the range of discount rates applied in previous applications of the regulatory test:

- the discount rate applied by NEMMCO in its SNI analysis was a real pre-tax discount rate of 11 per cent[8];
- VENCorp in its Latrobe to Melbourne study applied a real pre-tax discount rate of 8 per cent[9]; and
- Powerlink Queensland in its application for a proposed new network asset (Darling Downs Area) used a commercial discount rate of 10 per cent[10].

SUBMISSION FROM POWERLINK

7. Gold Coast constraints

Issue:

While Powerlink has not undertaken detailed analysis of the specific transfer capabilities advised by BRW to Directlink, Powerlink is unable to provide assurance that at times of peak demand there will be spare capacity within the Queensland network to support Directlink export to New South Wales into the future.

Response:

Country Energy and the Directlink Joint Venturers are currently in discussions with Powerlink and TransGrid as to what constraints current exist and are likely to emerge in the Gold Coast and the projects that are required to alleviate those constraints.

We will advise the AER separately on the outcomes of these discussions.

SUBMISSION FROM ORIGIN ENERGY

8. Committed generation

Issue:

Origin Energy notes that the Laverton and Braemar peaking generators have progressed toward committed status, and it has the view that these generators are significantly large enough to impact on the economic evaluation and should be included in the analysis.

[8] NEMMCO*, IRPC Stage 1 Report Update, Proposed SNI Interconnector*, November 2000, p. 29.
[9] VENCorp, *Update on the Economics of Optimising the Latrobe Valley to Melbourne Electricity Transmission Capacity,* April 2003, p. 4.
[10] Powerlink Queensland, *Application Notice: Proposed New Large Network Asset – Darling Downs Area,* 31 March 2003, p. 23.

Response:

TEUS prepared its market modelling for the Directlink conversion application based on the generation that was deemed committed in the then most recent version of NEMMCO's Statement of Opportunities. The Directlink Joint Venturers also understand that, since that time, the Laverton and Braemar generators have progressed towards committed status. For this reason, they and TEUS have agreed with the AER staff that these projects should be assumed committed for the purposes of the additional market modelling that the AER has since requested.

9. Gas marginal costs

Issue:

Origin Energy believes that ACIL Tasman's conclusions on cost of gas appear to convert the capital component of gas transportation to a variable cost although, granted, the report does not specifically identify a breakdown of costs. If so, this risks missing the chunky nature of gas transmission.

Response:

TEUS analysed market entry on the basis of fixed costs, rather than the variable costs cited in the ACIL Tasman report. The fixed costs take account of the chunky nature of gas transmission. For example, in the 2005 ACIL Tasman Report, new entrant generators fixed costs include an allowance for up to ten kilometres of gas transmission.[11]

10. Wind generation

Issue:

Origin identifies that the reports on the Directlink conversion do not include the economics of wind farm development in the NEM.

Response:

It is not separately appropriate to include planned wind farm developments in the market modelling, for the following reasons:

- NEMMCO's forecast demand is the amount of power required to be dispatched by scheduled generation, and so excludes load currently supplied from wind generation.[12]

- Wind generation is dispatched when the wind blows rather than centrally based on bids, and is therefore considered "non-scheduled" generation. As such, it has already been accounted for in the development of the load

[11] ACIL Tasman, *Report on NEM generator costs (Part 2)* ('**2005 ACIL Tasman Report**'), published by the IRPC and NEMMCO in February 2005, section 16.2.

[12] NEMMCO, *Intermittent Generation in the National Electricity Market*, 18 March 2003, p. 9, available at http://www.nemmco.com.au/dispatchandpricing/260-0001.pdf,.

forecast. Explicitly representing wind as a supply resource in the TEUS modelling would result in "double counting" the wind resource.

- Increased amounts of wind generation will affect forecast NEMMCO demand, but this is not expected to be significant given the amount of wind plant being commissioned (as opposed to under feasibility study) as a percentage of the market.

11. OCGT costs

Issue:

Origin Energy notes that the IES report quotes a value of $539k/MW capital cost after inflation for open cycle gas turbines. This is well below the recent experiences of developers in the NEM. It is interesting to note that in the press release announcing financial close of Wambo, a capital cost can be calculated at $750k/MW nominal capacity. This should be a relatively low cost development given the proximity to existing infrastructure and the relatively large unit size.

Response:

It is agreed that the capital cost of $539 per kW for peaking plant used in the IES and TEUS modelling is lower than costs observed for recent projects. It is appropriate to model the impact of higher capital costs, which will be conducted as a sensitivity test for TEUS's historical bidding case.

12. Gas turbines in hot weather

Issue:

The capacity of gas turbines declines as air temperature rises. As system reliability stress usually correlates with high temperature, the capital cost of reliability plant needs to be based on hot weather, not nominal capacity.

Response:

TEUS has used generator characteristics and costs derived from the ACIL Tasman Report, and it recognises that there is uncertainty in the cost per kW for new generation. Using the published cost with a specific reduced capacity rating for an arbitrarily chosen summer temperature is just another means of increasing the cost per kW. At the express request of the AER, TEUS will be analysing the sensitivity of market benefits to market entry costs. This should address the concern raised by Origin Energy.

13. Carbon costing and consideration of environmental constraints

Issue:

Neither the TUES or IES report appear to have fully captured the accelerated role out of low carbon intensity generation in Queensland. This phenomenon is likely to be exacerbated over time as the magnitude of carbon signals increase, so highlighting

the abundance of low carbon intensity fuel in QLD relative to NSW (coal seam methane and possibly PNG natural gas). It is envisaged that this will drive continued acceleration in Queensland generation planting relative to NSW increasing the benefits of Queensland to NSW transmission capacity.

It is also suggested that environmental issues that may influence generation development adjacent to major population centres need explicit consideration.

Response:

As modelling inputs, TEUS used generator characteristics and costs derived from the ACIL Tasman Report for the various regions of the NEM. As such, the TEUS modelling does not try to capture externalities, such as those associated with the environmental issues that may influence generation development. This is consistent with the requirements of the regulatory test that states[13]:

> In determining costs or market benefits, any cost or benefit which cannot be measured as a cost or benefit to producers, distributors and consumers of electricity in terms of financial transactions in the market should be disregarded.

In any case, the specific location of modelled market entry plant is not determined in the TEUS modelling to a level of detail where unique costs due to site-specific environmental issues, fuel supply issues, or interconnection costs issues can be identified and estimated. Rather, it is assumed that developers will consider these costs, and the tradeoffs between them that may be necessary, and will select the 'best' sites within the region to develop new generation. In other words, developers will not select high-cost sites when better alternatives exist. ACIL Tasman has estimated costs for plants located at the 'best' sites.

14. Braemar constraint and Middle Ridge transformer constraint

Issue:

Around 2007 the combined Millmerran, Kogan, Wambo and QNI contribution to flows north out of Braemar will approach the firm capacity of the Braemar-Tarong circuits. Origin Energy is concerned that there appears to be no consideration of the emerging Braemar constraint and the Middle Ridge transformer constraint in either the TEUS or IES reports.

Response:

Burns and Roe Worley have advised us that the Braemar constraint and the Middle Ridge transformer constraint have been factored into BRW's network modelling and its conclusions as to the transfer limits of QNI. The addition of Kogan Creek and Wambo generation connected into Braemar will not change those transfer limits.

[13] ACCC, *Decision, Review of the Regulatory Test for Network Augmentations*, 11 August 2005, p. 10.

15. Queensland to NSW (southward) capacity

Issue:

TransGrid and Powerlink are forecasting that as the northern NSW load continues to grow, these 132 kV constraints will again become material over the next couple of years. This suggests that Directlink will again contribute somewhat to the Queensland to NSW transfer capacity once the augmentation of the supply into the Gold Coast is completed next year.

Response:

As stated in our previous submissions, the Directlink Joint Venturers also believe that Directlink can provide substantial support to the northern NSW transmission network. As stated in our response to issue 7, Country Energy and the Directlink Joint Venturers are currently in discussions with Powerlink and TransGrid how this can be best achieved.

16. NSW to Queensland (northward) capacity

Issue:

Origin highlights that the IES report asserts that Directlink does not contribute to the NSW to Queensland capacity and that this appears to be based on the assumption that the Armidale-Tamworth constraint is the only constraint on flows north out of NSW. This assumption does not take into account limitations north of the Braemar connection point of QNI. Although not material at present, constraints between Braemar and south east Queensland will potentially limit flows north out of Braemar and NSW within five years. It must be noted that the ability of NSW to export north through the Armidale-Tamworth constraint will decline steadily over time, dropping to zero by around 2015 (assuming that these circuits will be mildly up rated during this period). Alleviation of this constraint is unlikely to be economically justified.

This suggests that for a period between 2008 and 2015, constraints between south west Queensland and south east Queensland will bind prior to the Armidale-Tamworth constraint. Under these circumstances, Directlink will indeed contribute to the NSW to Queensland capacity.

Response:

The Directlink Joint Venturers agree generally with the assessment made by Origin except for the statement regarding the Braemar constraint which has in fact been taken into account in the network and market modelling contained in the Directlink conversion application. Directlink, being a controllable transmission interconnector, can be used to regulate flow on QNI in order to maximise utilisation of the system subject to all constraints. This makes a significant contribution to NSW to Queensland (northward) capacity.