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Australian Competition and Consumer Commission,  
Po Box 1199  
Dickson ACT 2602

**21 March 2005**

Attention: Mr Warwick Anderson

Dear Mr Anderson,

PB Associates was appointed by the ACCC in June 2004, to undertake a review of the Directlink Joint Venture (DJV) Application for conversion to a regulated network, specifically to "assess the appropriateness of the alternative projects identified by DJV for the purposes of a regulatory test assessment."

The PB Associates report provides its finding in terms of the justification of the need for the investment and the relative efficiencies of the alternative projects proposed by the DJV. The findings indicate that a range of scenarios, projects and developments impact on the benefits to network support that can be offered by Directlink. The report also indicates the anticipated present value of those network benefits based on assessments of the DJV's modelling as well as information from other key stakeholders, in particular TransGrid and Powerlink.

In response to the PB Associates report, the DJV has expressed the view that the report has "substantial shortcomings". PB Associates has reviewed the DJV response and provides the following information to aid the ACCC's deliberations. It is not the purpose of this letter to provide a comprehensive analysis of the DJV's response as the ACCC is undertaking a separate review of this information.

The key claims by the DJV to which PB Associates principally wishes to respond is that there was inadequate technical analysis. The DJV made reference to independent modelling of the transmission network and that this was necessary for comprehensive and accurate analysis of system impacts.

PB Associates was not appointed to model the technical characteristics of the transmission network. As with most regulatory reviews of this nature, this project required an analysis of the information submitted by the DJV. In assessing that information, the assumptions and results were reviewed, the findings considered and the impacts checked in detail against the information available from other relevant sources including TransGrid and Powerlink. PB Associates has conducted similar reviews for almost all electricity regulators throughout Australia. PB Associates would be pleased to undertake network modelling should the ACCC believe that this would assist in their deliberations, however we consider that the results of our review provide considerable insight into the network benefits offered by Directlink.

In its response, the DJV states that it had considered the Broadwater cogeneration plant and concluded that the plant was, "technically incapable of providing network support sufficient to meet TransGrid or Country Energy's reliability obligations." PB Associates was advised by Delta Electricity that the availability envisaged for the generator would be in the order of 95% which exceeds that presented by Directlink and therefore its network benefits need to



be considered. This is especially the case given that the period of the required support applies to only a relatively few hours each year as also acknowledged by the DJV.

The DJV states that Directlink's characteristics, size and location are very well matched to the capacity of the surrounding network. PB Associates is also required to consider that Powerlink and TransGrid have not included such a solution in any joint planning prior to Directlink's construction and Country Energy contributed to the project not as an integrated component of its regulated network, but as a partner in an entrepreneurial investment deriving income from pool price differentials. In addition and perhaps highlighting the point that Directlink was not considered an optimal network solution by Powerlink or TransGrid, the Queensland Interconnector was constructed at the same time and commenced operation prior to the commissioning of Directlink.

PB Associates is also required to consider that TransGrid has not entered into formal arrangements with the DJV for network support. Instead, TransGrid has incorporated alternative projects into its forward capital expenditure program submitted to the ACCC.

The DJV also stated that TransGrid is currently relying on Directlink for network support to alleviate the overload on line 966. During the review PB Associates considered this issue. TransGrid has not acknowledged that it is relying on Directlink for network support. When this issue was posed directly to TransGrid they made the following statement. *"TransGrid cannot rely on support from Directlink at peak load times."* TransGrid also states that *"the voltage collapse scenario contemplated by BRW should not arise from a single contingency"*. PB Associates has formed the view that TransGrid is not reliant on Directlink for network stability and that they appear to be managing their network reliability in a responsible manner. TransGrid has also described load shedding schemes in place to manage contingencies during peak load periods which further support this view. TransGrid does, however, acknowledge that Directlink could assist in the restoration of supply following load shedding in these circumstances, but this has not been evaluated and it is incumbent on Directlink to demonstrate the benefits of such support.

During discussions with the DJV it was stated that TransGrid would not be inclined to pay Directlink for these services as they are effectively provided for free since NEMMCO can instruct Directlink to provide this support if it is required. PB Associates is of the view that the DJV should be pursuing that claim with NEMMCO and TransGrid directly rather than through its conversion application.

In its letter the DJV states that it has conducted its analysis in close cooperation with the relevant network service providers. As an independent reviewer, PB Associates was required to consider the potentially conflicted position of Country Energy as both partner in the DJV and network owner at either end of the Directlink interconnection. In relation to Powerlink, the DJV withdrew its original application following information released by Powerlink effectively undermining the DJV's claims.<sup>1</sup> Based on this, PB Associates concludes that the level of cooperation and mutual understanding was not as the DJV has stated. In the case of TransGrid, there is also a joint shareholder issue which must be recognised. Despite this PB Associates believes TransGrid has maintained an appropriate level of independence in its submissions and discussions relating to this review and its statements do not demonstrate a consensus of views with the DJV's assertions, or agreement on deferral benefits for NSW offered by Directlink. For example, TransGrid has stated that it intends undertaking upgrading works on line 966 and installation of capacitor banks at Koolkhan and that it would not be practical to rely on Directlink to defer augmentations to the mid north coast supply.<sup>2</sup> This is at odds with the DJV's claims that Directlink could defer such expenditures.

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<sup>1</sup> Application Notice, Proposed New Large Network Asset – Gold Coast and Tweed Areas Joint Report by Powerlink Queensland & ENERGEX Limited, 19 April 2004

<sup>2</sup> TransGrid's letter to the ACCC dated 11 March 2005.



In relation to the DJV's concerns regarding operating cost assumptions, PB Associates has applied a 2% operating cost rule of thumb for the calculation of deferral benefits relating to Alternative 5. PB Associates has undertaken numerous expenditure reviews on behalf of regulators and transmission companies and is familiar with the drivers of operating and maintenance costs. Our experience to date indicates that routine maintenance and inspections costs are highly predictable and relatively consistent for each organisation. Other costs such as emergency restoration and asset specific corrective maintenance expenditures are less predictable and can vary over time, by asset type and by location. The age of the assets can also impact on the required corrective maintenance costs as might be expected. In determining an appropriate operating and maintenance expenditure in this case, PB Associates considered each of these issues and agreed on the conservative 2% factor (ie incremental operating and maintenance expenditures equal to 2% of construction costs). TransGrid also advised PB Associates that 2% would be a reasonable basis for estimating the operating and maintenance costs for future network augmentations.

In comparison to this estimate, the TransGrid submission to the ACCC<sup>3</sup> sets out a methodology used to support the incremental operating costs proposed by TransGrid relating to additional network assets. In that submission TransGrid states that:

*"This increase in network size can be quantified by examining the change in 'maintenance units' over the regulatory period. The number of maintenance units is defined as ten times the number of switch bays plus the number of kilometres of lines. This is a unit of scale commonly used by a number of TNSPs operating in Australia."*

This methodology recognises that there are incremental operating costs associated with additional assets incorporated into a transmission network, but that these costs are less than the total average operating costs per dollar of asset value of the existing network. Applying this methodology to Alternative 5 of the DJV's application, the following estimate for additional operating and maintenance costs can be derived.

Cost per maintenance unit	=	\$4,300
Additional switchbays	=	2
Additional line length	=	40 km
Additional operating and maintenance cost	=	$((2 \times 10) + 40) \times \$4,300$
	=	\$258,000 pa

(Note: The current 132kV line which is likely to be replaced has 2 switchbays and is approximately 60km long. At most the new 330kV line would have 4 switchbays and extend approximately a further 40 km).

In the PB Associates report an annual operating and maintenance allowance of \$548,000 was provided as a conservative estimate. PB Associates also did not adjust the figure to recognise that the assets would be new and would in all likelihood require much lower maintenance for the initial few years, particularly in relation to the existing 132 kV line which will be replaced. In its submission to the ACCC TransGrid estimated this adjustment to be around 40% which would bring the annual operating and maintenance figure down to around \$160,000 pa, much lower than the amount allowed in PB Associates' report.

As a second, albeit rudimentary comparator, total operating costs can be compared with total asset replacement values. For TransGrid the operating and maintenance cost estimate for 2004/05 are projected to be around \$129 million. This represents around 2.5% of the total replacement asset value for TransGrid's system assets which is estimated by TransGrid at \$5 billion.<sup>4</sup> Allowing for fixed operating costs which do not vary with the

<sup>3</sup> TransGrid 2004 Revenue Reset Application, September 2003. Part III, page 80.

<sup>4</sup> TransGrid's Revenue Cap Application for the Regulatory Period 2004/05 to 2008/09 Revised Forward Capital Expenditure Needs, November 2004, Chapter 3.



addition of new network assets and could be up to 50% of total operating costs as shown by the maintenance unit calculation, this percentage falls to around 1.25%.

Whilst PB Associates is not necessarily advocating either of these methodologies as a rigorous identification of operating and maintenance costs, the comparisons do show that 2% is a conservative estimate which, if in error, is likely to overstate the incremental costs. This is particularly the case for TransGrid resulting from the augmentation of the Lismore to Dumaresq 330 kV line. For the other AC Alternatives, the 2% represents a reasonable guide in our view of the upper limit for operating and maintenance expenditures.

In conclusion, the process for review of a conversion application places the onus on the applicant to clearly demonstrate that the benefits offered are both required and efficient. Given the lack of commercial interest shown by TransGrid or Country Energy to negotiate for network support with Directlink for provision of such services the DJV has needed to rely heavily on its modelling and assumptions in support of its application.

Directlink was originally constructed to provide a market trading mechanism between the Queensland and NSW electricity pools. As such, the joint planning between TransGrid, Country Energy and Powerlink did not identify a DC interconnector as an optimal network investment. Powerlink has contracted to utilise Directlink for network support services for a one year period to enable longer term solutions for its network to be constructed. This is effectively the only material acknowledgement by these parties that Directlink could provide transmission network services other than the recognition by TransGrid of possible deferral of the 330kV Lismore to Dumaresq line described as Alternative 5 and acknowledged by PB Associates in its report.

PB notes that the DJV has made a number of changes to its application during the course of this review. PB Associates has continued to work with the ACCC during this process to resolve all technical issues relating to the DJV's application and our report. We believe it is important that Directlink be attributed with the range of benefits that it can deliver to electricity customers and has sought to identify and quantify these benefits. However it is also critical that only those benefits likely to be achievable and deliverable should be assigned, otherwise electricity customers run the risk of being required to pay for more than they receive.

Yours sincerely

**Paul Topfer**  
NSW Manager  
Parsons Brinckerhoff Associates