SUBMISSION TO THE ACCC

MTC – APPLICATION FOR CONVERSION TO A PRESCRIBED SERVICE: PRELIMINARY VIEW

Electricity Supply Industry Planning Council

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1 INTRODUCTION

As the South Australian representative on the IRPC and with a statutory responsibility in relation to transmission planning, the Planning Council is concerned to ensure that any new TUoS imposition on South Australian customers is incurred only where it represents the most efficient market outcome.

The ACCC's Preliminary View in relation to Murraylink's application for conversion to a prescribed service appears to place an imposition on electricity market customers out of proportion with any benefit they are likely to receive as a result of Murraylink's conversion.

In the sections below, the Planning Council outlines the detail of its concerns with the ACCC's reasoning in reaching its Preliminary View to allow Murraylink to convert at a value of $114.42m, but, in summary, the Planning Council's position is that:

- The technical basis of the decision has not been adequately demonstrated;
- The estimation of Murraylink's benefits is significantly overstated; and
- The value of the best alternative to Murraylink is similarly overstated.

In addition to the above concerns, the Planning Council makes a number of observations regarding the framework of the ACCC's decision and the application of the Regulatory Test.

2 FRAMEWORK ISSUES

In addition to the specific concerns of the Planning Council with respect to the calculation of the Regulated Asset Value (RAV) for Murraylink, the Planning Council also makes the following observations regarding the Safe-Harbour provisions of the *Code* and the application of the Regulatory Test.

2.1 Philosophy of "Safe-Harbour" Provisions

The NECA working group, in deciding on the structure of the Safe-Harbour provisions made the following statement of intent:

> *… It might be argued that as well as the usual commercial risks, the proponent of a non-regulated interconnector may face additional risks related to market design deficiencies that may only become apparent once the first interconnectors are operational.*
>
> *Providing a right to apply for regulated status may help ensure that investment is not inefficiently inhibited by such non-commercial market design risks. However it is important that the conversion option should not shield the proponent from normal commercial risks, e.g., the risk of having over-judged the future demand for the interconnection service.*

The ACCC noted, in approving the provisions, that:

> *the Commission understands that the provision to allow market network services to apply for conversion to prescribed network services reflects the view that MNSPs may face risks from future NEM developments, such as changes to regional boundaries, which may result in market network services becoming non-code compliant.*[1]

Both bodies clearly contemplate the safe-harbour provisions operating to mitigate potential non-commercial risks such as *Code* changes or regulatory restructure, not to provide a means of underwriting normal commercial risks.

The Planning Council is of the view that there has been no such change in the market environment and that Murraylink's application is predicated on commercial rather than non-commercial risks. The Planning Council would, therefore, question the applicability of the conversion provisions in the *Code*.

2.2 Gaming

The decision in this case, representing as it does the first of its kind, has significant implications in terms of the precedents it will establish.

In particular, the Planning Council is concerned that the low-threshold approach to allowing MNSPs to access the conversion provisions provides the opportunity, if not incentive, for future MNSP projects to game the market and distort the intent of the *Code*. From the Preliminary View, it would appear open for future MNSPs to identify an emerging requirement for an interconnector and install a market network service earlier than normal market indicators would suggest it is required. Such a pre-emptive investment has the potential to effectively preclude investment in a regulated option that may have had higher net benefits for the market. The MNSP, by then converting to regulated status, gains a preferred market position.

In addition to potential commercial risks of gaming, an MNSP who chooses to convert to a regulated asset would also avoid:

- the technical scrutiny of the Interconnections Options Working Group (IOWG);
- the normal appeal processes that a regulated investment would face through appeal on the basis of merit to the National Electricity Tribunal.

2.3 Incremental Benefits vs Benefits of the Project

Earlier submissions address the issue of whether the consumer should be asked to underwrite the cost of the entire project or only that portion of extra benefit that accrues as a result of conversion to a regulated asset.

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[1] Applications for Authorisation Amendments to the National Electricity Code: Network pricing and market network service providers, 21 September 2001, p 137

The Planning Council makes no further observations on this issue other than to petition the ACCC to provide a clearer statement on the reasoning behind its preferred approach.

It may well be that the ACCC could consider the benefits of conversion to be a threshold test. That is, if an MNSP provides positive market benefits from converting, then the conversion is allowed and the total market benefits of the project are then used in the establishment of the RAV.

2.4 Consistent Application of the Regulatory Test

While the ACCC has claimed that "it has assessed Murraylink in the same way that other new investments undertaken by TNSPs are assessed"[2], the Planning Council submits that there are many and significant differences to the methodology applied in this case.

Some of these differences relate to the calculation of benefits or assessment of alternatives, which are discussed later in the submission, but others relate to the basic nature of the test:

Zero Net Benefit: The test as applied to Murraylink is designed to result in a zero market benefit, while the application of the normal test seeks to identify an option which maximises the net market benefit. While this positive number could, theoretically, be close to zero, the inherent uncertainty in future modelling tends to result in the threshold test requiring a significant market benefit.

Median Market Benefits: The Planning Council questions whether it is appropriate to calculate a "median" market benefit rather than a "most likely" benefit with sensitivities to test the robustness of the conclusions.

Selection of Alternatives: Appear to have been limited to those which exactly duplicate Murraylink rather than those that provide a reasonable alternative.

Bidding Scenarios: The SNI and SNOVIC regulatory test applications required that alternative bidding scenarios be used and not just a single, SRMC methodology.

[2] ACCC Preliminary View, p *iv*

2.5 Other Considerations

REGULATORY PERIOD

Given the uncertainty surrounding transfer capacity, particularly from NSW, and the operational performance of Murraylink in a regulated environment, the Planning Council considers that the standard five year regulatory period would be appropriate.

OPERATING EXPENDITURE ALLOWANCE

The Planning Council notes and supports the submissions of other parties at the public forum with respect to the quantum allowed in the Preliminary View for Murraylink's operating expenditure.

In doing so, the Planning Council relies on material contained in MTC's original submission regarding the maintenance required on aspects of the HVDC Light equipment, namely:

> *The converter stations are designed to be unmanned and are virtually maintenance free. The estimated maintenance requirement is approximately 2 days per year.*[3]
>
> *HVDC Light cable is made from material that gives the cables a high mechanical strength, high flexibility and low weight. Extruded HVDC Light cable systems in a bipolar configuration have both technical and environmental advantages because the cables are small yet strong …*[4]
>
> *The Murraylink cable is underground for the full 180 kilometres and is therefore secure and reliable, and not susceptible to lightning, accidental vehicle damage or vandalism.*[5]

FINANCIAL PARAMETERS

While the Planning Council has not investigated the suitability of the WACC and Beta numbers used by the ACCC, it would support, in the absence of reasons to the contrary, consistency of those figures with recent TNSP revenue resets.

3 TECHNICAL ASSESSMENT

3.1 Transfer Capability

The level at which Murraylink is able to transfer power between Victoria and South Australia and between NSW and the combined Vic/SA region is absolutely central to the value of the benefits derived and the nature of the alternatives assessed.

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[3] MTC Application at p10.

[4] MTC Application at p10.

[5] MTC Application at p13.

To date, no credible assessment of this capacity has taken place.

Given the complexities of the various state networks involved in such an assessment, the Planning Council submits that a determination of transfer capacity can only be achieved by a multi-region expert group such as the IOWG which includes, where appropriate, a representative of TransÉnergie. Consultants engaged to consider very narrow transfer parameters cannot be expected to understand or assess the implications of the many dynamic and static transmission constraints across the entire shared AC network.

Much of the regulatory test market benefit to be derived from any interconnector is its ability to transfer energy between regions when that energy is required. This requirement, in accordance with NEM planning criteria, is most obvious at times of peak demands where the interconnector can act as both a source of energy and a source of capacity.

For the purposes of calculating benefits it is also important to differentiate between transfer capacity between South Australia and Victoria and transfer capacity between NSW and the combined SA/Vic region.

Based on the current operational constraint equations, the *2002 NEMMCO Statement of Opportunities* draws the following conclusions with respect of the transfer capacity of Murraylink over those two boundaries:

> *Under summer peak conditions the transfer capability of Murraylink is restricted by network limitations to the extent that it is not expected to provide an appreciable increase to the transfer capability between Victoria and South Australia.*[6]
>
> *Murraylink has been treated as committed although at times of peak summer demand it is not expected to contribute to the transfer capability into the combined Victoria and South Australia regions because of network limitations in Victoria and New South Wales.*[7]

While MTC has proposed certain network augmentations to relieve some of the existing constraints, the Planning Council makes the following observations:

- The capital cost of the augmentations should be included as part of Murraylink's RAV and not in addition to it. That is, if the benefits are calculated on the basis of the increased performance of Murraylink caused by the augmentations, then the extra cost of those augmentations should not be added to the RAV, particularly where the definition of the alternatives is determined by requiring them to match the increased Murraylink performance;

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[6] 2002 SOO at p 6.8

[7] 2002 SOO at p 8.6

- New constraint equations should be developed to reflect the augmentations so that participants can assess what the operational rather than technical maximum flows will be under different scenarios;
- Many of the augmentations involve installing control schemes that run back or trip Murraylink should any of the lines supporting it be out of service. While this feature protects existing lines, it does so at the expense of reduced reliability to customers;
- Without an appropriate technical assessment, the Planning Council remains unconvinced that the proposed augmentations will actually deliver real operational increases in network transfers.

The Planning Council notes that at the public forum, MTC claimed that Murraylink was capable of facilitating the transfer of 110 MW from NSW and Snowy into the combined Vic/SA region. This is a new claim and one which, in the absence of any supporting evidence, the Planning Council dismisses. Discussions with both VENCorp and TransGrid evince similar reservations with respect to such a claim.

For the remainder of this document, except where otherwise noted, the Planning Council has assumed, despite the absence of convincing evidence, that Murraylink is able, at peak periods, to transfer up to 220 MW between Victoria and South Australia and 0 MW from NSW.

3.2 Technical Assessment of Alternatives

Significant differences of opinion appear to have emerged regarding the technical feasibility and structure of the proposed alternatives. While this is dealt with in some detail in the section of the cost of alternatives, the Planning Council would again promote the IOWG as an appropriate body for establishing the transfer capabilities of the proposed alternatives.

3.3 Reliability

Unlike other parts of the interconnected network, Murraylink incorporates control schemes that run back and trip Murraylink when incidents occur on either the South Australian or Victorian transmission networks. The Planning Council notes in recent clarification by MTC, that VENCorp require Murraylink's runback scheme to be triggered by outages of any of a number of additional Victorian transmission lines, in order to achieve Murraylink's claimed transfers.

The Planning Council is not aware of any other grid situation where the reliability of a transmission element incorporates the consequence of other network elements' performance and status. Such a dependence means that Murraylink's reliability will, of necessity, be below the performance and reliability of equivalent AC network elements.

The Planning Council is concerned that these factors have not been properly allowed for in the assessment of Murraylink's RAV.

4 CALCULATION OF BENEFITS

4.1 Summary

The following sections detail the Planning Council's calculation of benefits and the rationale for the differences between our and MTC's assessments. The summary results of this assessment are as follows:

BENEFIT CATEGORY	MURRAYLINK CLAIM	PLANNING COUNCIL ESTIMATE
Deferred Capacity and Reliability	$110m	$5m
Riverland Deferral	$25m	$3m
Energy (Fuel)	$79m	$50m
Total	*$214m*	*$58m*

4.2 Deferred Capacity and Reliability Benefits

Murraylink Claim: $110m *Planning Council Estimate: $5m*

RATIONALE:

The Planning Council cannot conceive of a feasible circumstance whereby a proponent can claim benefit for both reliability and deferred capacity.

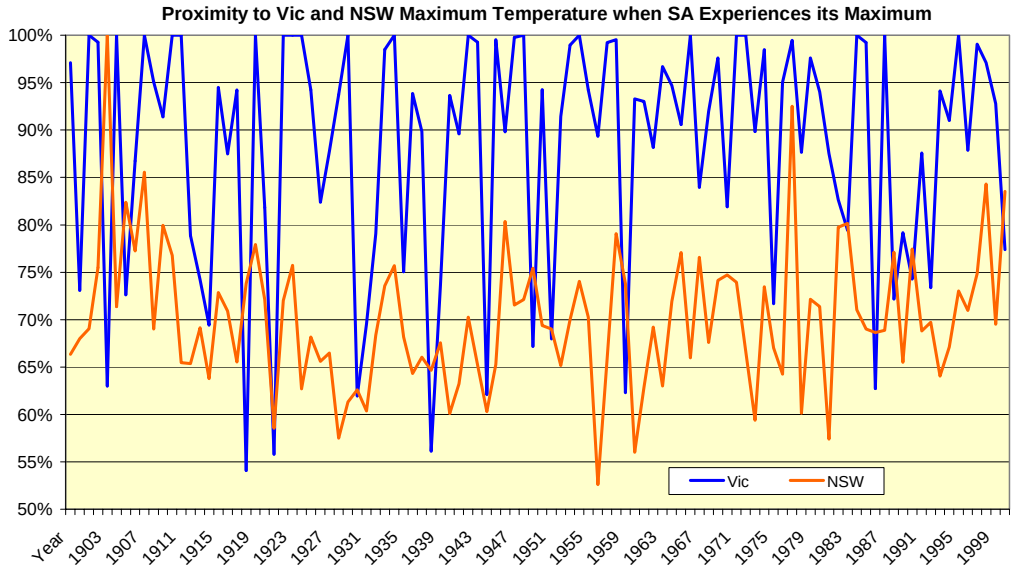
The existing market is required to operate under the Reliability Panel's 0.002% USE standard. Any non-interconnection base-case should include enough new generation plant to ensure that the 0.002% standard is met. A case that breaches this requirement is effectively modelling a market, and certainly a political, fiction. While there may be slight variances from year to year in Energy Not Served figures, one would expect over time for all models to net to approximately zero.

The benefit accruing to the interconnector is then the amount of generation capacity that is able to be deferred through the ability to share reserves across regions. That is, maintaining the reserve standard through interconnection rather than new generation.

Murraylink appear to have run two separate models; one to calculate the benefit of deferring capacity and one to calculate a reliability benefit. The Planning Council submits that those two benefit types are mutually exclusive.

In any event, the Planning Council's modelling shows that the value of the benefit attributable to Murraylink in this area is close to zero for the following reasons:

South Australia and Victoria have historically very similar weather patterns and a high degree of coincidence with respect to peaks (as shown in the graph below for the last 100 years). In such a circumstance, one or both states would need to have reserves over and above their individual reserve requirements to be able to share the excess.



On the basis of this shared analysis, NEMMCO determines that less than half of the existing Heywood interconnector is able to be counted on in determining South Australia's reserve capacity. Increasing the size of the transfer capacity between South Australia and Victoria does nothing to increase the ability to share reserve. Without the ability to share reserves, there can be no deferred capital benefit attributable to Murraylink.

4.3 Riverland Benefits

Murraylink Claim: *$25m* *Planning Council Estimate:* *$3m*

RATIONALE:

In its latest 30 June submission, MTC concede that, without further augmentation by either shunt capacitors or a new transmission line from Robertstown to Monash, Murraylink is unable to provide adequate network support to the Riverland beyond 2008.

To date, the Planning Council has valued Murraylink's ability to provide support according to its ability to defer the expenditure of $40m until 2008. At the public forum, ElectraNet SA indicated that its tendering process last year had revealed a network support option, other than Murraylink, that could also defer the $40m expenditure until 2008 and at a cost of $1m per annum. The Planning Council had previously been aware of this figure, but unable to use it due to its confidential nature. Now it has been made public, the Planning Council submits that the Murraylink Riverland deferral benefit can be no more than the cheapest option. With a discount rate of 9%, $4m spread from 2004-2007 would allow Murraylink a benefit of $3.2m.

4.4 Energy (Fuel) Benefits

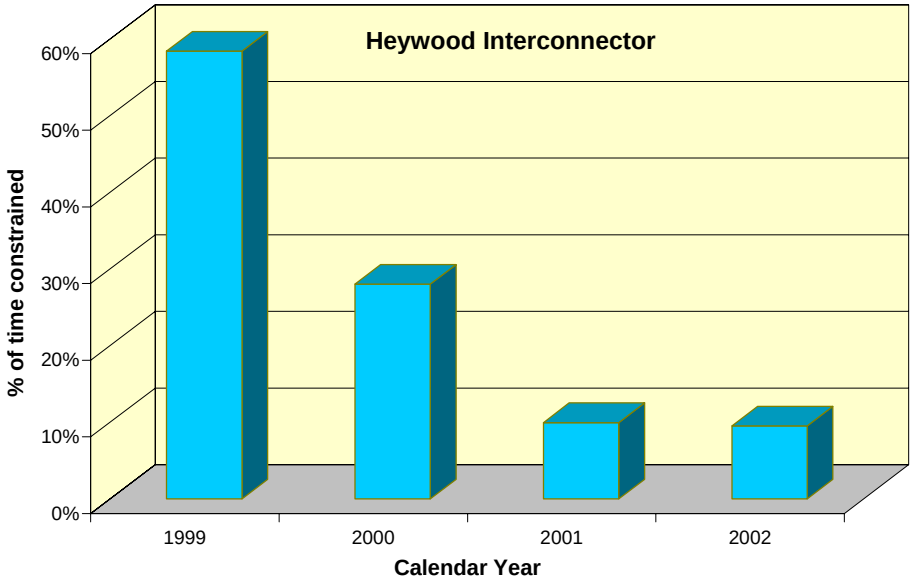
Murraylink Claim: *$79m* *Planning Council Estimate:* *$50m*

RATIONALE:

For Murraylink to create fuel benefits, it must be able to show that its presence results in a change in generation dispatch such that there is more generation from cheaper, often coal based, generators and less from more expensive ones.

With Murraylink increasing the transfer capacity between South Australia and Victoria, one would, therefore, expect a fuel benefit if such a transfer increase allowed for greater market dispatch of generators with a lower marginal fuel cost.

The historical pattern of binding constraints across the existing Heywood interconnector shows a clear trend towards reducing reliance on the interconnector.



If the market recognised an economic disparity in terms of marginal fuel price levels between South Australia and Victoria, one would expect to see Heywood operating at constrained levels much more often. Indeed, were one to run a market model on an SRMC basis, as Murraylink has done, this would certainly be the case. However, it is clear that the market does not, nor is likely to, operate on the basis of short run marginal cost bidding.

Any fuel benefits provided by Murraylink over and above that of Heywood must, therefore, occur either during the current 10% of constrained periods or by reducing the overall losses of transferring power between the states. The Planning Council's figures are modelled on these assumptions.

4.5 Murraylink's Modelling

RELIABILITY AND DEFERRED CAPITAL

According to the literature presented by MTC, its model has added market entry generators according to whether the spot price supports their viability. The introduction of Murraylink supposedly defers the construction of new generation and, therefore, provides market benefits. This would appear to ignore the prescribed reliability standard and, as such, produce results that are inconsistent with NEM requirements.

The Planning Council makes the following observations about the flaws in this technique. The analysis performed by the MTC consultant was based on SRMC bidding which would naturally produce low prices in the wholesale market. The elevation of prices to a point where a new entrant becomes viable would rely on high levels of dispatch of high cost low efficiency plant, DSP and potentially from VoLL events caused by levels of unserved energy higher than the Reliability Standard. Presumably with Murraylink in service the change in pool prices as a result of its operation were sufficient to alter the premiums available and, as a consequence, change the new entrant viability. There is no indication from MTC as to the levels of ENS achieved or whether the reserve standards are satisfied. Indeed, based on statements made by MTC at the public forum, it would appear that no new entry occurred in the low growth cases until after 2012 in clear breach of NEMMCO's capacity requirements. The use of the planting schedules generated by the MTC methodology transferred to the MARS model is likely, therefore, to lead to large amounts of ENS.

In the *Statement of Opportunities* NEMMCO provides a supply-demand calculator that incorporates the transmission constraints used in the NEM, the reserve requirements for each region and regional load diversity. Using this calculator, the Planning Council has investigated the levels of new capacity required in each region both with and without Murraylink and any additional deferral that could be achieved based on the relaxation of the constraints that Murraylink is proposing to achieve through its additional investment. The construction of Murraylink on its own and the subsequent relaxation of the network constraints do not alter the requirements for new capacity. There is, therefore, no justification for the inclusion of capital deferral benefits in the benefit calculation.

FUEL BENEFITS AND SRMC BIDDING

The fuel benefits attributable to Murraylink are highly dependent on the bidding strategy assumed in the modelling.

Using an SRMC based analysis similar to that adopted by MTC, the Planning Council observed fuel benefits in the order of $60-90m depending on the relaxation of other constraints in the network. This range is consistent with MTC's $79m claim, but is based on a methodology that clearly does not reflect the actual operation of the market. Such an approach produces results that are simply illogical and are inconsistent with actual market observations, such as:

- forward pool prices of $15-$20 per MWh; and

- Heywood constrained for up to 50% of the time.

The Planning Council suggests that an LRMC based bidding strategy to model the market creates far more rational results that reflect the true operation of the market. LRMC bidding produces forward pool prices in the order of $35 per MWh and shows Heywood being constrained at a realistic 10-15% of the time. The fuel benefits attributable to Murraylink under an LRMC model are in the order of $10-50m.

The principle drivers of these benefits would appear to be related to the utilisation of the Heywood interconnector. Where the analysis has shown that the Heywood interconnector is heavily constrained, such as that indicated from the SRMC analysis, the fuel benefits are larger than that shown in the LRMC analysis where the number of hours of constrained operation are more similar to that currently being experienced in the NEM.

The Planning Council observes a logical trend towards convergence of price in all regions related to the tightening capacity situation. Such a convergence is consistent with a continuation of low levels of constraint on the interconnector.

MTC has purported to examine market development scenarios where the price is more reflective of current price outcomes. However this would appear to have been achieved by simply scaling the SRMC values for each generator. While this methodology will raise prices it does not re-sequence the generators into a merit order more consistent with reality and effectively just maintains MTC's forecast level of benefits by scaling the entire market up.

5 COST OF ALTERNATIVES

In assessing alternatives, it is insufficient to merely assess the cost of duplicating Murraylink. What should be considered is a range of reasonable alternatives that can provide equivalent or greater benefits, but are not constrained to the exact location or sizing of Murraylink.

In considering the question of equivalence, the ability for Murraylink to facilitate power transfers across the SA-Vic border or across the NSW-SA/Vic border is critical. If, as the Planning Council and all existing network constraint equations assert, Murraylink is only capable of increasing the transfer capacity across the SA-Vic border then a logical alternative to consider, and one that faces fewer environmental and planning hurdles, is the augmentation of the existing Heywood interconnector. However, if through some full or partial implementation of the so-called unbundled SNI Murraylink is able to contribute to power transfers from NSW then the existing ACCC alternatives, or variations thereof, are far more apposite.

5.1 Zero Transfer from NSW

With no transfers from NSW, a reasonable and cost effective alternative is the augmentation of the existing Heywood interconnector. The Planning Council, relying on project estimates by its consultant, Western Power, has assessed the cost of two such augmentations to be as follows:

	MURRAYLINK	HEYWOOD 3RD CIRCUIT	HEYWOOD SERIES COMPENSATORS
Transfer from NSW	0 MW	0 MW	0 MW
Transfer from Vic	180/? MW	500 MW	150 MW
Estimated Cost	$123m[8]	$95m[9]	$50m[10]

5.2 Non-Zero Transfer from NSW

If net transfer from NSW is not zero, thus implying some portion of the so-called, but ill-defined, unbundled SNI works have been carried out to strengthen the western NSW network, then reasonable alternatives to Murraylink can be considered along the following lines:

ALTERNATIVE	LINE COST	SWITCHYARD	TOTAL
Red Cliffs to Monash 220 kV	$32m	$26m	$58m
Buronga to Monash 220 kV	$37.5m	$25m	$62.5m
Buronga to Monash 275 kV	$41.5m	$6.5m	$48m

The above figures include EPC estimates at 10%, but do not include interest during construction or development costs.

The primary differences between the above figures based on Western Power construction estimates and Planning Council design and the BRW figures used by MTC are:

- The removal of undergrounding costs. Without these costs, the line costs for both sets of figures are not significantly different;
- The non-inclusion in the Western Power/Planning Council figures of significant spares (facilitated by redesigning substation works to allow for standard rather than custom-built transformers);
- Choosing different component item rating sizes commensurate with power transfer capacity.

[8] $114m plus $9m for augmentations

[9] Based on estimate by Western Power and an allowance for Riverland Network Support to 2008

[10] Based on estimate by Western Power and an allowance for Riverland Network Support to 2008

The results of these changes are summarised in the table on the following page. In interpreting the table, the ACCC should note that the Planning Council alternatives 1E and 3E are intended to reflect the existing alternatives 1 and 3 with some of the non-essential expenditure removed, but without changing the basic 220kV configuration. By including the costs of such items as Phase Shifting Transformers and SVCs, the Planning Council does not mean to imply that they are necessary. To demonstrate this, the Planning Council has constructed a further, more cost effective option (XE) that, by operating at a 275 kV level, explicitly allows for the removal of network elements that the Planning Council assesses as superfluous.

ALT	MURRAYLINK/BRW	COST ($K)	ALT	PLANNING COUNCIL /WESTERN POWER	COST ($K)	ESIPC COMMENT
1	**Line works** Buronga to Monash 210km total ⇒ 180km overhead + 30km underground 275kV built, 220kV operated	88,095	1E	**Line works** Buronga to Monash 210km total ⇒ 210km overhead + 0km underground 220kV built, 220kV operated	34,000	1E has no undergrounding 1E operates at built voltage
	Switchyard works 3@160MVA voltage TXs (specials) 2@350MVA phase shifting TXs 1@SVC	78,588		**Switchyard works** 1@250MVA voltage TXs (standard) 1@250MVA phase shifting TXs 1@SVC	22,764	1E has no spares 1E has standard voltage TX 1E optimises TX to transfer capacity
	EPC cost (incl 10% contractor profit)	**183,352**		EPC cost (incl 10% contractor profit)	**62,440**	1E estimates an additional $120912K for unused voltage uprate, undergrounding and spares of special TXs
3	**Line works** Red Cliffs to Monash 180km total ⇒ 155km overhead + 25km underground 220kV built, 220kV operated	74,647	3E	**Line works** Red Cliffs to Monash 180km total ⇒ 180km overhead + 0km underground 220kV built, 220kV operated	29,000	3E has no undergrounding 3X operates at built voltage
	Switchyard works 2@350MVA voltage/phase shift TXs (specials) 1@SVC	58,572		**Switchyard works** 1@250MVA voltage TXs (standard) 1@250MVA phase shifting TXs 1@SVC	23506	3E has no spares 3E has standard voltage TX 3E optimises TX to transfer capacity
	EPC cost (incl 10% contractor profit)	**146,541**		EPC cost (incl 10% contractor profit)	**57,750**	3E estimates an additional $88791K for undergrounding and spares of special TXs

ALT	MURRAYLINK/BRW	COST ($K)	ALT	PLANNING COUNCIL /WESTERN POWER	COST ($K)	ESIPC COMMENT
			XE	**Line works**	37,800	
				Buronga to Monash		XE has no undergrounding
				210km total ⇒ 210km overhead + 0km underground		XE operates at built voltage
				275kV built, 275kV operated		
				Switchyard works	5,815	XE has no spares
				1@250MVA voltage TXs (standard)		XE has standard voltage TX
				0 phase shifting TXs		XE optimises TX to transfer capacity
				0@SVC		XE has no SVC
				EPC cost (incl 10% contractor profit)	**47,976**	XE is a lower cost, simpler augmentation operating at 275kV and substitutes for expensive and complex SVC and PSTs operating at lower voltage