TransGrid

Murraylink Transmission Company

Application for Conversion of Murraylink to Prescribed Services

TransGrid's Submission to the ACCC

March 2003

1. EXECUTIVE SUMMARY

TransGrid welcomes this opportunity to make the submission to the ACCC concerning Murraylink Transmission Company's ("MTC") application to the ACCC for the Murraylink Market Network Service to become a prescribed service.

As TransGrid has discussed with the ACCC, TransGrid considers that there are four key areas where significant issues are raised by the MTC's application. These are:

- the process under which the ACCC considers applications for conversion;
- the approach taken to apply the "regulatory test" in these circumstances;
- the technical issues raised by the Application; and
- regulatory consistency.

TransGrid supports the development and augmentation of the regulated transmission network in the NEM in accordance with the network planning process contained in chapter 5 of the Code. The regulatory test is at the core of that process in determining which proposed network projects should proceed as part of the regulated transmission network. Consequently, TransGrid supports the ACCC's current position that it should use the regulatory test in evaluating MTC's application under.

However, TransGrid submits that the ACCC must ensure that it adopts a principled and transparent method in evaluating MTC's Application that is more substantive than the somewhat mechanistic approach of simply applying the regulatory test (or a modified version of it) in order to avoid abrogating its obligation to exercise its discretion under clause 2.5.2(c).

The conversion process should not under any circumstances be allowed to be used to merely bail out bad commercial decisions.

In addition, the current application of the conversion process should not set a precedent which can be perceived by potential investors as a safety net, in other words, as a comfort that a decision to invest in a MNSP which turns out commercially untenable at a future date can be recouped by converting to regulated status. Such a safety net would obviously encourage a less robust commercial decision making process.

The approach taken by MTC and its consultants in determining a regulatory asset value for Murraylink includes the variation of a number of principles the ACCC currently utilises in determining the revenue caps for Transmission Network Service Providers ("**TNSP**") such as TransGrid. The ACCC must adopt an approach to determine a regulatory asset value for MTC that is consistent with the approach it uses (and intends to use in the future) to determine TNSPs' revenue caps. Any divergence between the principles the ACCC applies generally to TNSPs and those applicants under clause 2.5.2(c) would undermine confidence in the consistency and transparency of the regulatory regime administered by the ACCC.

1.1 The Conversion Process

Clause 2.5.2(c) of the Code establishes a two-stage process for conversion from a market network service to a prescribed service under the Code.

The first stage of the process requires the ACCC to exercise a discretion as to whether an MNSP's market service should be determined to be a prescribed service. The ACCC must exercise the discretion on a case-by-case basis taking into account the individual circumstances of each separate application. TransGrid agrees that the ACCC should use a modified form of the regulatory test in exercising that discretion. However, the ACCC does retain the discretion

not to determine that the market network service should become a prescribed service, even if it does satisfy the modified version of the regulatory test applied by the ACCC.

If the ACCC decides to determine that the relevant market network service should be classified as a prescribed service, the second stage of the process requires the ACCC to determine a regulated asset value for the assets that provide the service to form the basis of the NSP's revenue cap. That regulated asset value must be determined in accordance with Chapter 6, which sets out the principals, objectives and framework of the transmission revenue regulatory regime.

TransGrid agrees with the ACCC that a modified version of the regulatory test can be used not only as part of the process for determining whether the market network service should also be reclassified, but also to derive the regulatory asset value of Murraylink, providing that the method used is consistent with the principles and objectives in Chapter 6 of the Code.

However, given that the regulatory test is being used to determine not only whether or not the network service can be classified as a prescribed service but also the regulated return the NSP will receive for its investment it is important that the information and analysis used in applying the regulatory test to the assets in question is very robust.

TransGrid's position is that MTC's Application overlooks the fact that clauses 2.5.2(c) of the Code is a two stage process and instead proceeds on the basis that if it can derive an asset value for Murraylink that is acceptable as a return on investment to MTC and at which Murraylink satisfies the regulatory test then the ACCC is obliged, or will inevitably, determine that Murraylink is a prescribed service.

1.2 Approach in Applying the Regulatory Test

TransGrid submits that MTC's Approach to determining a regulated asset value under clause 2.5.2(c) is flawed because it does not:

- ensure that Murraylink passes the regulatory test. The application focuses upon the cost of Murraylink relative to the cost of alternatives, while the regulatory test is based upon a comparison of net benefits;
- consider alternative market development scenarios in evaluating MTC's application. In fact MTC's application only deals with a single scenario. The regulatory test requires that a range of reasonable alternative market scenarios be considered in order to captures the uncertainty of the future development of the market;
- TransGrid supports the recommendations in the NERA Report[1] that a number of different market scenarios should be considered, and the regulatory asset values of Murraylink derived under each scenario weighted together;
- exclude costs that do not relate to the provision of the prescribed services from the regulatory asset value and lead to unnecessarily high TUOS charges to customers for the provision of network services by those assets. The ACCC must consider whether all of the services able to be provided by Murraylink should properly be the subject of its conversion application from market network service to prescribed services.
- However, in certain circumstances it may be difficult to strip out the cost of providing that additional service from the underlying service required under the

[1] Nera Report entitled "*Comments on Murraylink's Application for Conversion to Regulated Status*" dated January 2003.

Code. The best way to ensure that MTC does not receive the benefit of any gold-plated assets in setting its regulated asset value is to ensure that its net market benefit is calculated against alternative projects which have similar benefits to Murraylink rather than providing the same (expensive) technical service.

1.3 Technical Issues

MTC's application of the regulatory test is flawed in a number of critical respects to the extent that the results of the application of the regulatory test to Murraylink are not sufficiently robust to the form the basis for a decision by the ACCC of a regulatory asset value for Murraylink without further analysis. This is particularly so with respect to MTC's calculation of the gross market benefits of Murraylink.

MTC's failure to calculate gross market benefits over a range of market development scenarios (as required under the regulatory test) means that the information provided is of limited utility. One of the most compelling examples of the inadequacy of the information provided is the fact that it ignores the presence of SNI entirely. There is no doubt that the SNI project should be regarded as committed at least in some, if not all, of the market development scenarios used by MTC to calculate MTC's gross market benefits.

TransGrid notes PB Associates report on transfer capabilities in which the Consultants recommend that further dynamic studies be carried out "to determine whether the 220kV transfer capability claimed by MTC is available". It would be appropriate for this work to be carried out by the IRPC. Also additional support works in NSW need to be clearly identified and costed.

TransGrid understands that electrical losses on Murraylink are in the order of 7% to 10% including converter stations at both ends and cable losses. Capitalisation of these losses over the life of the project would be a significant amount and must be taken into account.

1.4 Regulatory Consistency

A number of the principles adopted by MTC in determining their revenue cap are inconsistent with those applied to recent revenue cap determinations for TNSPs. These include:

- Extensive adoption of pass through mechanisms
- The asset lives for regulatory depreciation purposes
- The levels of regulated rates of return
- The duration of the regulatory reset period
- The proposed levels of circuit availability

TransGrid supports the inclusion of a pass-through mechanism, such as the one included in MTC's Application, in an NSP's revenue cap to reflect cost impacts during the regulatory control period. However, it notes that in light of the ACCC's recent revenue cap decision for SPI PowerNet any revenue mechanism should be symmetric to allow the benefit of any cost decrease to flow through to customers. TransGrid notes that MTC has not yet provided the ACCC with a copy of the rules it proposes to govern the pass-through mechanism and indicates that it may make further submissions on this aspect of MTC's application once those draft rules are available.

The asset lives proposed by MTC for regulatory depreciation purposes appear to be less than 20 years. In most other revenue determinations the lives adopted are 40 years for substation assets and 50 years for transmission lines. TransGrid would be supportive of a general move to shorter lives as a result of the MTC application on the assumption that this would be

extended to future TNSP revenue cap determinations. While customer charges would be affected initially it would assist TransGrid to manage investment risk and align regulated TNSPs generally with the regime now operating in Victoria for new transmission assets.

MTC is seeking a higher regulated return than applied to other TNSPs in recent ACCC determinations. TransGrid has already presented evidence to the ACCC that these returns are too low and would welcome some relaxation of the principles applied to determining regulated returns.

TransGrid's view is that, as a general rule, the revenue cap for TNSPs should be in place for a period of 10 years to allow a sufficient period of time to provide TNSPs with incentives to make and retain efficiency gains. The interests of customers in capturing the gains of any cost decreases during that period can be captured by including a symmetric pass-through mechanism in individual TNSPs' revenue caps. However, one consequence of a longer regulatory control period is that the ACCC does not have any opportunity to optimize the assets for a considerable period of time. One way on ensuring that customers do not pay excessive amounts of TUOS as a result of that extended period is to ensure that the process undertaken to establish the regulatory asset value for the asset at first is very robust.

TransGrid agrees with MTC that Circuit Availability is an appropriate performance measure for Murraylink. However, it supports the comments in the PB Associates report on Service Standards that the benchmark of 97% circuit availability appears to be too low.

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[2] Nera Report entitled "*Comments on Murraylink's Application for Conversion to Regulated Status*" dated January 2003.

2. APPLICATIONS FOR CONVERSION UNDER CLAUSE 2.5.2(C) OF THE CODE - THE APPROACH TO CONVERSION

Clause 2.5.2(c) of the Code provides that:

> *"If an existing Network Service ceases to be classified as a market network service it may at the discretion of the regulator or jurisdictional regulator (whichever is relevant) be determined to be a prescribed service or prescribed distribution service in which case the revenue cap or price cap of the relevant Network Service Provider may be adjusted in accordance with Chapter 6 to include to an appropriate extent the relevant network elements which provided those Network Services."*

The term **"Prescribed Services"** is defined in Chapter 10 of the Code to mean:

> *"Transmission services provided by Transmission Network Assets or associated connection assets to which the revenue cap applies."*

Similarly the term **"Revenue Cap"** is defined in Chapter 10 of the Code to mean:

> *"In parts B and C of Chapter 6, the maximum allowed revenue for a year determined by the regulator for prescribed services applicable to a transmission network owner;*
>
> *In parts D and E of Chapter 6, the aggregate annual revenue requirement for a year determined by the jurisdictional regulator applicable to a distribution Network Service provider."*

Clause 2.5.2(c) of the Code empowers the ACCC to grant the application of a Network Service Provider ("**NSP**") to operate a market network service as a prescribed service. If the ACCC decides to grant that application, it is then required to adjust the revenue cap of the NSP in accordance with Chapter 6 of the Code to include the assets which provide the prescribed services into the NSP's regulated asset base.

Clause 2.5.2(c) establishes a two-stage process for conversion of a market network service to a prescribed service as follows:

(a) the ACCC must exercise its discretion whether to determine that the market network service should be a prescribed service; and

(b) if the ACCC determines that market network service should be a prescribed service **then** it must determine the value of the assets that provide the prescribed services to be added to or used to establish the NSP's RAB in accordance with the procedure set out in Chapter 6 of the Code.

2.1 Exercise of the Discretion

Clause 2.5.2 does not prescribe how the ACCC should decide whether to exercise its discretion to determine that a market network service should be a prescribed service under the Code. However, the clause does provide the ACCC with a discretion, which the ACCC must exercise in a meaningful way. The ACCC cannot exercise that discretion mechanistically by adopting a modified version of the regulatory test. In its application, MTC appears to have overlooked this discretion and, in effect, submitted that once it can demonstrate that it satisfies the regulatory test (amended on the basis proposed by MTC) it is entitled to convert to regulated status.

The ACCC cannot exercise its discretion by adopting a modified version of the regulatory test as to do this would simply ignore that the ACCC was given a discretion. That is, if the intention of the Code were for the ACCC to merely adopt a mechanistic approach and apply a simple test, the Code would have been drafted in a way that provided for this to occur.

TransGrid submits that MTC's contention in this regard overlooks the manner in which clause 2.5.2(c) is drafted and the statements made as to the purpose of the ability to convert. Clause 2.5.2(c) is drafted as a discretion. If MTC's submissions were correct then no discretion on the part of the ACCC would be necessary.

While MTC is not required under clause 2.5.2(c) to provide a reason as to why it is seeking to convert Murraylink from an MNSP to a prescribed service, TransGrid submits that the applicant's reasons for making such an application are a relevant consideration that the ACCC should take into account in exercising its discretion whether or not to grant the application.

The NECA Working Group on Inter-regional Hedges and Entrepreneurial Interconnectors noted in its report as part of the Transmission and Distribution Pricing Review that:[3]

> "*As already noted, the concept of a non-regulated interconnector is still somewhat experimental. 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.*** *It is therefore essential that the regulated revenue entitlement is based on the need for the facility at the time of the application, rather than guaranteeing a return on the original capital cost.*
>
> *...Care would be needed to ensure that there was no scope to obtain windfall gains by strategic alternation between regulated and non-regulated status. " (our emphasis)*

Similarly, in the ACCC's "Applications for Authorisation - Amendments to the National Electricity Code Network Pricing and Market Network Service Providers" dated 21 September 2001 (the **"ACCC determination on network pricing"**). In the determination the ACCC noted that:

> *"… The provision to allow market network services to apply for conversion to prescribed network services reflects the view that MNSP may face risks from future NEM developments, such as changes to regional boundaries, which may result in market network services becoming non-code compliant. The Commission notes that as the clause is currently drafted no justification is required prior to reclassifying a market network service as a prescribed network service, although the regulator has the discretion to determine whether or not a network service may be classified as a prescribed network service."*

TransGrid notes that while MTC has argued that the need for its application arises from "a high level of uncertainty particularly in relation to the interaction between the competitive and

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[3] p 9, NECA, Working Group on Inter-regional Hedges and Entrepreneurial Interconnectors, "*Entrepreneurial Interconnectors: Safe Harbour Provisions*", November 1998.

regulated segments"[4] the "uncertainty" referred to would appear to be the outcome of the Code process related to TransGrid's SNI interconnector.

However MTC and its parent companies were aware of the status of SNI when Murraylink was proposed. Given this, the consideration that the Code processes relating to SNI were not complete, is not an uncertainty with the regulatory framework or from developments in the NEM, but rather a commercial risk that MRC elected to take.

Another investor in an unregulated asset such as a generator in South Australia that took a similar risk to MTC would not be able to have some their investment protected through a conversion to regulated status. In this circumstance, TransGrid submits that a major factor underlying the ACCC's discretion was to prevent proponents of what are effectively failed investments not being exposed to the consequences of that failure. It is not in the interests of market participants and end user customers for the conversion process under clause 2.5.2(c) of the Code to be used as a shield against ordinary commercial risk.

TransGrid considers that this consequence of granting MTC's application is a relevant factor that the ACCC must take into account in exercising its discretion under clause 2.5.2(c) of the Code.

2.2 Use Of The Regulatory Test

If the ACCC exercises its discretion to allow MTC to convert Murraylink from an MNSP to a prescribed service, it then has an obligation under clause 2.5.2(c) of the Code to determine the value of the Murraylink assets to establish MTC's regulatory asset base in accordance with the procedure set out in Chapter 6 of the Code.

The issue arises as to how the ACCC should approach the determination of whether Murraylink should be entitled to convert to regulated status and the revenue cap to be applied to Murraylink. Assistance with this approach to the Application can be gained by examining the basis on what proposals to construct regulated assets are considered. The regulatory test promulgated by the ACCC under clause 5.6.5A of the Code is used to determine whether proposed new small network assets[5] and new large network assets[6] can provide prescribed services under the Code.

Given that the purpose of the ACCC's discretion under clause 2.5.2(c) of the Code is also to determine whether specific assets should be regarded as providing prescribed services, TransGrid accepts, subject to the comments in section III as to the basis of the discretion, that it is appropriate that the same or similar factors used by the ACCC under the regulatory test are used by the ACCC in the exercise of its discretion under clause 2.5.2(c).

However, as the regulatory test as currently promulgated by the ACCC does not take account of sunk costs, some modification of the test is required before it can be used by the ACCC as the basis for exercising its discretion.

In its application, MTC submitted one approach to applying the regulatory test to an existing market network service. TransGrid has a number of criticisms of this approach which are discussed in **Part IV of** this submission. TransGrid also supports the alternative approach to applying the regulatory test recommended by NERA in its report entitled "*Comments on Murraylink's Application For Conversion to Regulated Status*", January 2003, which is

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4 Page ii, NTC's application.

5 See clause 5.6.6A(a) and 5.6.2(b)(5)(i) and (iii).

6 See clause 5.6.6(b)(5) of the Code.

discussed in **Part VI** of this submission (and which TransGrid has previously provided to the ACCC).

In summary, TransGrid's position is that, if the ACCC decides to consider MTC's application, clause 2.5.2(c) of the Code contains a two-stage process for conversion. The first is a decision by the ACCC whether it should allow an application for conversion of a specific transmission service from market to prescribed status. The ACCC should decide each application on a case-by-case basis taking into account the individual circumstances of each separate application including the reason for the conversion application. TransGrid agrees that, in making the decision, a modified form of the regulatory test is an appropriate criterion. However, regardless of whether the relevant service satisfies the modified version of the regulatory test applied by the ACCC, the ACCC retains a discretion to decline the application on reasonable grounds including factors such as whether the conversion would allow the applicant to make up for an imprudent investment or obtain windfall gains by strategic conversion from unregulated to regulated status.

The second stage of the process set out in clause 2.5.2(c) of the Code is determining the revenue cap for the new regulated assets. In contrast to the ACCC's discretion to grant an application for conversion the clause does include specific criteria for the setting of the revenue cap. The clause provides that the revenue cap must be adjusted in accordance with Chapter 6 of the Code to include to an "appropriate extent" the relevant network elements that provided those network services.

MTC has used the regulatory test both as the basis for the criteria the ACCC should use to determine whether its exercises its discretion to grant MTC's application for conversion and to derive a regulatory asset value for Murraylink. Murraylink does this by combining the two stages of clause 2.5.2(c) into one enquiry that is described in the NERA Report as:[7]

> "*What regulatory asset value for Murraylink would result in Murraylink passing the regulatory test, if Murraylink were to be constructed now?*"

Subject to the comments in Section III above, TransGrid has no objection to a modified version of the regulatory test being used to derive the regulatory asset value of Murraylink providing that the method used is consistent with Chapter 6 and specifically the objectives and principles of the transmission revenue regulatory regime set out in clauses 6.2.2 and 6.2.3 of the regulatory test and as embodied in the ACCC's draft statement of regulatory principles.

2.3 An Alternative Approach

As discussed in a later section of these submissions, not only is MTC's approach inconsistent with the regulatory test but there are also substantial problems evaluating MTC's application under its own approach based on the quality of the information supplied. These deficiencies raise the issue of whether MTC's Approach is the best approach for deriving the regulatory asset value of an existing asset in any case.

In its report, NERA questioned whether MTC's approach includes sufficient modifications to the application of the regulatory test to Murraylink to recognise that it is an existing asset as opposed to a proposed asset that is the usual subject of the regulatory test.

Nera suggests that an *ex ante* application of the regulatory test to the *change in Murraylink's status*, rather than an *ex post* application of the regulatory test to the *hypothetical situation* in which Murraylink was not built is a better way to derive a regulatory asset value than MTC's approach.[8]

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[7] See p 9, The NERA Report.

[8] See p 8-11 of the NERA Report.

MTC's approach effectively tries to 'backsolve' the regulatory test, in order to answer the question: what regulatory asset value for Murraylink would result in Murraylink passing the regulatory test, if Murraylink were to be constructed now?[9] As a result, Murraylink has assessed the gross market benefits associated with Murraylink on the basis of how the market may have been expected to develop without Murraylink, and how the market may be expected to develop with Murraylink.

However, neither of these scenarios assist the ACCC in making its decision as to whether it is in the interests of the NEM that network customers pay for the cost of the network services provided by Murraylink through transmission use of system charges ("**TUOS**"). In order to make that assessment the ACCC needs to know the benefits to the market that the change in Murraylink's status from market network service to regulated interconnector will bring.

[9] See p 9 of the NERA Report.

3. ANALYSIS OF MTC'S APPLICATION OF THE REGULATORY TEST

MTC's application has been made on the basis that, in determining an application under clause 2.5.2(c) of the Code, the ACCC should adopt the methodology proposed by MTC that determines a regulatory asset value for an existing interconnector as the value at which an interconnector satisfies the regulatory test. MTC asserts that this approach will ensure that the existing interconnector will provide a positive net market benefit that is greater than or equal to any of the net market benefits provided by any of the alternative projects selected, and no greater than the actual cost of the interconnector, and as a result the interconnector will satisfy the regulatory test.[10]

MTC's approach is as follows:[11]

(a) define the service which Murraylink provides;

(b) calculate the gross market benefit provided by Murraylink;

(c) identify alternative projects which provide the same service and estimate the cost of these alternatives; and

(d) set the maximum regulated cost for Murraylink (regulatory asset value plus lifecycle opex) as the *minimum* of:

(i) the gross market benefit of Murraylink;

(ii) the cost of an alternative project; or

(iii) the cost of Murraylink.

TransGrid asked NERA to review and comment on MTC's Application and particularly as it relates to the use of the regulatory test to derive the regulatory asset value for Murraylink. Nera's analysis is set out in a paper entitled "*Comments on Murraylink's Application for Conversion to Regulated Status*" dated January 2003 (the "**Nera Report**"). A copy of the NERA Report was provided to the ACCC in late January 2003.

3.1 The NERA Report

Nera makes three major criticisms of MTC's approach being:

(a) the MTC approach does not ensure that Murraylink passes the regulatory test because the definition of alternative projects is narrower than under the regulatory test and it does not consider the benefits from alternative projects;

(b) MTC has failed to consider alternative market development scenarios;

(c) costs not relating to prescribed services should be excluded from the regulatory asset value.

(a) The MTC Approach does not ensure that Murraylink passes the regulatory test.

MTC's Approach only considers the cost of Murraylink relative to the *cost* of alternatives, rather than the *net benefit* of Murraylink relative to the *net benefit* of alternatives. For

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10 See pgs iv-v of the MTC's Application.

11 See p iv of MTC's Application.

Murraylink to pass the regulatory test, the net market benefit associated with Murraylink must be greater than the net market benefit associated with alternative projects. A comparison of net benefits requires an assessment of the gross benefits of each alternative, as well as an analysis of their costs.

Murraylink's application does not contain any information in relation to the gross benefits of the alternative projects, and has only considered the costs associated with alternatives. It cannot be assumed that the gross benefits of alternative projects will be equal to the gross benefits calculated for Murraylink, since the benefits of alternatives need not arise from exactly the same sources.[12]

In order to ensure that a regulatory asset value is chosen for Murraylink such that it passes the regulatory test, Murraylink's proposed approach would need to be amended as follows:

(a) define the service which Murraylink provides;

(b) calculate the gross market benefit provided by Murraylink;

(c) identify alternative projects which provide the same service and estimate the cost of these alternatives and the gross market benefit of these alternatives;

(d) if the net market benefit of Murraylink is greater than the net market benefit of alternative projects, then Murraylink passes the regulatory test and its regulatory asset value should be set equal to the capital cost of Murraylink; and

(e) if the net market benefit of Murraylink is less than the net market benefit of alternative projects, then the regulated cost for Murraylink (regulatory asset value plus lifecycle opex) should be the gross market benefit of Murraylink minus the highest positive net market benefit associated with an alternative project.

Under the regulatory test, augmentations are required to maximise the net present value of the market benefit in all cases other than where the augmentation is proposed to meet an objectively measurable service standard linked to the requirements of schedule 5.1 of the National Electricity Code ('the Code').[13] In the latter case, the augmentation must minimise the net present cost of meeting the service standard.

Murraylink notes in its application that the scope of the services provided by Murraylink are not solely related to meeting the technical requirements of Schedule 5.1 of the Code.[14] As such, for Murraylink to pass the regulatory test it must maximise the net market benefit. This in turn implies that it is necessary to consider the benefits (rather than simply the costs) of alternative projects.

The NERA Report comments that by concentrating on the cost of alternative projects, MTC's Approach is more akin to a cost effectiveness analysis that the cost benefit analysis required under the regulatory test.[15] Under a cost effectiveness analysis, the focus is on minimising the cost of meeting a given objective, rather than maximising the net benefit. However, even if Murraylink were being assessed solely in relation to meeting the technical standards of Schedule 5.1, analysis of the benefits associated with alternative options to meet these

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12 See pgs 2-3 of The NERA Report. This point is made in the Charles River Associates' report submitted by Murraylink as part of its Application: Appendix E, *Report – Review of TEUS Market Benefits Report – Charles River Associates* p.16.

13 Regulatory test (a) and (b).

14 Murraylink Application, p.iv.

15 See p 7 of the NERA Report.

standards would still remain relevant. That is, even a cost effectiveness analysis would not simply ignore the different benefits provided by alternative options, and focus solely on their costs.[16]

As a result, Murraylink's proposed approach to deriving the regulatory asset value, which only focuses on the costs of alternatives, is inconsistent with the regulatory test in circumstances where a change in approach is not justified.

(b) MTC has failed to consider alternative market development scenarios

In order to pass the regulatory test, a project must maximise the net market benefit having regard to a number of different alternative projects, timings and market development scenarios. Note 5 to the regulatory test expressly requires that the assessment of any proposed augmentation 'should include modelling *a range of* reasonable alternative market development scenarios.' An application of the regulatory test should result in an assessment of the relevant rankings of different projects under different market development scenarios.

MTC's approach does not consider alternative market development scenarios and as a result assumes a single net present value (NPV) arising from the regulatory test when, in fact, a proper application of the regulatory test will yield a *range* of NPV values for each option.[17] It ignores that the net benefits associated with a project will differ depending on the background market development scenario assumed and accordingly the regulatory asset value will depend on the market development scenario underlying the regulatory test.

As a result MTC's approach is inconsistent with an application of the regulatory test in circumstances where it is inappropriate to depart from this aspect of the analysis required by the regulatory test. The role of market development scenarios is to capture the uncertainty that necessarily exists about the future development of the electricity market, and to ensure that the project that passes the regulatory test is robust to different assumptions about the future development of the market.

Murraylink has stressed in its application the importance of taking into account the 'range of uncertainties' associated with the cost and timing of alternative projects to Murraylink.[18] However, in failing to consider alternative market development scenarios in its application of the regulatory test to Murraylink MTC has failed to take account of the range of uncertainties associated with calculating the benefits of Murraylink.

The NERA Report recommends that in order to take account of this uncertainty, the modelling should consider different market development scenarios, and a regulatory asset value for Murraylink should be derived under each of those scenarios. The different market development scenarios considered should be those that have a material probability of occurring. The different regulatory asset values should then be weighted together on the basis of an assessment of the relative likelihood of each of the different market development scenarios, in order to arrive at a regulatory asset value for Murraylink that reflects future uncertainty about how the market will develop. This approach to weighting the outcome of the regulatory test assessment under different market development scenarios is similar in concept to the approach

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16 See p 7 of the NERA Report.

17 See p 5, The NERA Report.

18 Murraylink's Application, section 4.4.4. As a result, the costs associated with alternative projects have been inflated to include 'contingencies'. See Murraylink's Application, Appendix F: *Report – Selection and Assessment of Alternative Projects – Burns and Roe Worley*, p.22.

that the Inter-regional Planning Committee (IRPC) considered in its assessment of the proposed interconnector (SNI) between South Australia and New South Wales.[19]

The NERA Report concludes that MTC's approach of only considering a single market development scenario in deriving the regulatory asset value is inadequate and does not represent a proper application of the regulatory test.[20]

(c) Costs not relating to prescribed services should be excluded from the regulatory asset value

Note (2) to the regulatory test states:

> "*(2) In determining the market benefit, it should be considered whether the proposed augmentation will enable:*
>
> **(a)** a Transmission Network Service provider to provide both prescribed and other services;...
>
> *If it does, the costs and benefits associated with the other services should be disregarded. The allocation of costs between prescribed and other services must be consistent with the Transmission Ring-Fencing Guidelines....*"

This issue is of particular importance in the context of MTC's Approach to determining its regulated asset value as the greater the cost of the services Murraylink provides the greater its regulated asset value will be. This will also have a direct impact on the cost of any alternative projects that Murraylink should be compared to. If those services are eliminated then it broadens the category of alternative project Murraylink should be compared against.

In order for a network service to be a prescribed service under the Code, it must be provided by transmission network assets or associated connection assets to which revenue cap applies. A revenue cap can only apply to services that in the opinion of the ACCC are not reasonably expected to be offered by more than one Network Service Provider as a contestable service or on a competitive basis.[21] By definition, a prescribed service must also be a service a regulated interconnector is required to provide under the Code.

In assessing MTC's Application the ACCC needs to determine whether any of the services that Murraylink provides are not prescribed services. This would include both services which regulated interconnectors are not required to provide under the Code as well as a level of service over and above that required by the Code.[22]

The portion of the cost of Murraylink which is attributable to providing such a service would need to be *deducted* from the 'regulated cost' amount derived for Murraylink, in order to arrive at the regulatory asst value in relation to the prescribed service. To establish a regulatory asset value for Murraylink on the basis of a higher than required level of service (where the Code

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19 IRPC Stage 1 Report, Proposed SNI Interconnector, August 2001, p.39.

20 See p 6 of the NERA Report.

1. 21 The term "*Prescribed Services*" under Chapter 10 of the Code is defined to mean "*Transmission services provided by Transmission Network Assets or associated connection assets to which the revenue cap applies*." Clause 6.24(f) of the Code states: "*Revenue caps set by the ACCC are to apply only to those services, the provision of which in the opinion of the ACCC are not reasonably expected to be offered on a contestable basis*." See also the definitions of "*Transmission Service*" and "*Contestable*" in Chapter 10 of the Code.

22 For example the technical service standards prescribed in Schedule 5.1 of Chapter 5 of the Code.

does not provide for the market to take advantage of this benefit or provides for the providers of such services to be separately remunerated) would be a form of 'gold-plating'.[23]

MTC has stated that all of Murraylink's technical capability will be available to the NEM in exchange for its regulated revenue including: [24]

- a power transfer capability that is controllable to a high degree of accuracy and independent of other power flows, impedances, loads and generation in the NEM; and
- reactive support and assistance with regulation of the voltage profile of the AC Networks at both the sending and receiving ends of Murraylink. Murraylink has a dynamic reactive capability of up to +140MVAr and-150MVAr.

Under clause 2.5.2(c) of the Code Murraylink, operating as a market network service, is required to have certain features that are not required of a regulated interconnector. For example, it must comprise a two terminal link that is independently controllable,[25]to facilitate its dispatch by NEMMCO as part of the central dispatch process under Chapter 3. In contrast, there is no provision under the Code for a regulated interconnector to be controllable and no provision for a regulated interconnector to be directly dispatched.

As controllability is neither a service which a regulated interconnector is required to provide under the Code nor a service which the Code provides for from a regulated interconnector, the cost of Murraylink which is attributable to providing that service should be deducted from the 'regulated cost' amount derived for Murraylink, in order to arrive at the regulatory asset value in relation to the prescribed service.

A similar issue arises with respect to Murraylink's ability to provide reactive support.

However, in certain circumstances it may be difficult to strip out the cost of providing that additional service from the underlying service required under the Code. The best way to ensure that MTC does not receive the benefit of any gold-plated assets in setting its regulated asset value is to ensure that its net market benefit is calculated against alternative projects which have similar benefits to Murraylink rather than providing the same (expensive) technical service.

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23 See p7 of the NERA Report.

24 p30 of the MTC's Application.

25 Clause 2.5.2(a)(5)(B) of the Code.

26 The reactive power support an NSP must provide in section 5.1.8 of Schedule 5.1 of the Code.

3.2 Alternative Projects

(a) Power Transfer Capability

In its application MTC essentially categorised the following power transfer capabilities for Murraylink.

Condition Type	Conditions	Murraylink capability Vic to SA
A.	1900 MW import to Vic from Snowy / NSW and there is spare Victorian generation	220 MW
B.	1900 MW import to Vic from Snowy / NSW and no spare Vic generation	110 MW
C.	Reduced Vic import and spare generation capacity in NSW	220 MW

The conditions described in "B" above result in a situation where there is 1900 MW import from NSW/Snowy to Victoria and a capability from Victoria to South Australia across Murraylink of 110 MW at peak times. This condition does not represent a situation whereby there is a power transfer capability of 2010MW (being 1900MW + 110MW) from NSW/Snowy to Victoria/SA (combined region).

In fact the work of the IOWG for SNI showed that the benefit of Murraylink to the combined region was of the order of 0 to 40 MW. This benefit arises due to the distortion of the normal load sharing between parallel paths when Murraylink is operating. This distortion tends to move a small amount of power away from the critical Murray – Dederang line.

It should be noted that the figure of 1900 MW in conditions A and B is also a simplification of the actual capability of the transmission system. The actual capability is dependent on a number of system quantities including NSW south west load. With SNOVIC in service the critical contingency governing the Victorian import capability is the Murray – Dederang line. This line outage results in an increased loading in the remaining parallel line. The outage of the Lower Tumut – Wagga line is also critical but to a lesser extent. When the Lower Tumut – Wagga line is affected by an outage there remains only a single effective link between NSW / Snowy and Victoria ie via the Murray – Dederang lines. As South Australia is effectively radially connected to Victoria, none of the proposed Murraylink works can improve the constraint then imposed by the Murray – Dederang lines.

The market modelling conducted by TransEnergie US assumes a 220 MW capability from Victoria to South Australia except on February afternoon weekdays and July-August morning and afternoon peak periods. This may be an underestimate of limitations as it is based on a review of 1999 – 2001 and may not reflect future market conditions.

TransGrid considers that it is appropriate that MTC has assumed that the identified power transfer capability can be maintained for the life of the project through the progressive upgrading of the upstream systems by TNSP's.[27]

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[27] This approach was assumed by the IOWG for SNOVIC and SNI and is considered appropriate here.

PB Associates believe that the there is uncertainty in the actual capability of the networks supporting Murraylink and that a maximum capability of 180 MW (rather than 220 MW) should be applied. TransGrid suggests that detailed investigations are required to establish the correct capability. These detailed investigations have not been documented in the TEA or PB Associates reports. Of particular interest will be the ability of the run-back schemes to overcome voltage constraints.

In section 4.3.2.1 TEA is quoted as having undertaken dynamic studies and has provided details to PB. PB then says "*These studies use dynamic load modelling in SW-NSW and have been performed in consultation with TransGrid. TEA advised that these studies indicate voltage collapse does not occur*." In fact TEA undertook dynamic studies using an overly simplistic view of load behaviour and they showed that voltages did not collapse. TransGrid undertook more sensible load modelling and showed that collapse occurred. TEA's own consultants (Power System Consultants) also performed some indicative studies and confirmed that voltage conditions were clearly unacceptable. Hence TransGrid does not agree with TEA on this issue.

Central to resolving this issue will be the speed of response of the Murraylink runback that will be largely governed by the speed of telecommunications systems. It is not known if the proposed run-back scheme being designed by MTC will have adequate speed.

PB note that TEA indicate that a Snowy – Victoria interconnector transfer capability of 2010 MW can be achieved by using Murraylink power transfers and altering the dispatch of Snowy hydro. PB correctly concludes that this required further analysis in the context of the impact on the market benefits analysis. TransGrid further suggests that the feasibility of such Snowy dispatch needs to be assessed. It is quite possible that hydrological limitations within the Snowy scheme may preclude such an approach.

It should also be noted that if such Snowy dispatch patterns were possible they would also apply to the case without Murraylink. The base case without Murraylink in service would then itself have increased capability for power transfer between NSW/Snowy and Victoria. Hence the actual benefit of Murraylink on top of the base capacity becomes quite uncertain.

The level of losses on Murraylink is not addressed by PB. An equivalent overhead transmission line between Buronga and Monash would have substantially lower losses than Murraylink. This needs to be reflected in the market modelling and comparison of alternative schemes to Murraylink.

The level of losses on the supporting transmissions of NSW and Vic, as a consequence of Murraylink operation, is also not addressed by PB. One advantage of SNI is the upgrade of the Darlington Pt to Buronga 220 kV line to 275 kV operation. This reduces losses. An upgrade of the Darlington Pt – Buronga line has not been included in any of the alternative schemes assessed by MTC.

(b) Network Uprating Works

Murraylink's Application refers to a number of network augmentations that enhance Murraylink's capability. In total the cost of these network augmentations reaches $8.97m. Murraylink notes that it is prepared to fund 'the appropriate portion of these costs' and that such funding will be 'as part of Murraylink's initial development budget'.[28]

In TransGrid's view some refinement of these works would be required in practice. For example the proposed upgrade of the Wagga to Lower Tumut line requires more extensive works than specified at a slightly higher cost. It is also not considered feasible to implement

[28] Murraylink Application, p.iv and p.18.

the reactive plant installations at the costs indicated. In TransGrid's view the cost and extent of the works requires an engineering review.

PB Associates notes that MTC propose to fund up to $8.97M of additional augmentations to relieve constraints. These costs appear to have no documented basis. TransGrid believes that an accurate cost of these augmentations needs to be established as part of the MTC application to the ACCC and therefore further engineering investigation is required. It should be noted that there is some commonality of the proposed works with works for SNI.

The definition of the prescribed services that Murraylink can provide and TEUS' analysis of the gross benefits of Murraylink both assume that these investments are in place.[29] However, the cost associated with these investments does not appear to have been explicitly incorporated into the analysis. It is unclear whether Murraylink's reference to 'initial development budget' is intended to be a reference to its initial regulatory asset value. We note that Murraylink's projected revenue requirement does not incorporate any future capital expenditure.[30]

It is inappropriate to ignore the amount of this future investment and to implicitly include it in Murraylink's regulatory asset value, since Murraylink has not committed to fund all of the investment, and the timing of the investment is unclear.

For the value of these investments to be incorporated into the analysis, Murraylink would first need to commit to funding them. If the investment is expected in the current year, then it could be included as part of the regulatory asset value derived for Murraylink. However, if the expected timing is after 2003, then the investment should be included as future capex, in deriving Murraylink's revenue requirement for the proposed regulatory period, rather than being included in the regulatory asset value. In this case, TEUS' assessment of the gross benefit of Murraylink would also need to be re-calculated, as any delay in the timing of the additional investment also implies a delay in the time at which the some of the market benefits arising from Murraylink arise.

In the absence of a commitment by Murraylink to fund the additional investment, then the assessment of the gross benefit of Murraylink would need to be re-calculated, on the assumption that the investment was not in place. This would reduce the expected gross benefit, and therefore the regulatory asset value derived for Murraylink. The additional investments, if they had a proponent in future, could then be assessed at that time in the standard way, via an *ex ante* application of the regulatory test.

(c) Selection of Alternative Projects

MTC states in the executive summary of its application that it has limited its selection of alternative projects against which to assess Murraylink to those that provide the same prescribed services as Murraylink.[31] In reality, its selection criteria is narrower than that. MTC states at p 32 of the Application that engineering firm, Burns and Roe Worley ("**BRW**") selected and costed projects that could have provided the same technical service and gross market benefits as Murraylink.

This approach to selecting alternative projects to Murraylink ignores the fact that:

- as the MW controllability offered by the Murraylink HVDC scheme is not required under the Code, alternative projects should not be based on this level of controllability being provided; and

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29 Murraylink Application, p.17.

30 Murraylink Application, p. vii.

31 See p v of the MTC's Application.

- the voltage control capability of Murraylink may not be fully required for other alternatives or form part of a prescribed service.

It also meant that other possible options such as reinforcing Snowy to Victoria network are ignored.

The regulatory test is an evaluation of one project against others, rather than one project against a 'do nothing' scenario. Under clause 5.6.6(b)(1)(iii) the proponent of a new large network asset must provide a detailed description of:

> "*all other reasonable network and non-network alternatives to address the identified constraint or inability to meet network performance requirements the proposed asset is intended to meet. The alternatives include but are not limited to interconnectors, generation options, demand side options, market network service options and options involving other transmission and distribution networks.*"

The TNSP applicant must also provide an analysis ranking the proposed project and all reasonable alternatives. The ranking must be undertaken in accordance with the regulatory test (see clause 5.6.6(3)). The ACCC has noted that it would expect the number of alternatives considered to be proportional to the size and/or importance of the proposed augmentation.[32]

A key step in applying the regulatory test is therefore to determine which alternative projects should be considered. It is also particularly important in the context of MTC's Approach because the cost associated with an alternative project potentially impacts on the regulatory asset value assigned to Murraylink.[33] The higher the cost of alternative projects, the greater the regulatory asset value derived for Murraylink.

The NERA Report makes it clear that from an economic perspective the term 'alternative' implies projects with attributes such that, were they to proceed, would materially affect the net market benefit calculated for the other projects being considered. This approach was accepted by the National Electricity Tribunal as appropriate[34]. In general, these will be projects where the factors contributing to the net benefit are of a similar nature. There is no requirement for a project to be an alternative for the source of benefits to be (and indeed, are unlikely to be) exactly the same as the proposed project provided there is a sufficient degree of substitutability, the net market benefit of each will be materially affected by the existence, or not, of the other alternatives.[35] This point has also been made by MTC's own consultants Charles River Associates which commented in its evaluation of TEUS' study of Murraylink's gross benefits that the benefits associated with alternative projects do not have to arise from identical sources.

There is simply no justification for the very narrow approach used by MTC to selecting alternative projects. This conclusion is reinforced by the fact that using the selection criteria adopted by MTC for selecting alternative projects generation and demand side management options automatically cannot be alternative projects as they do not provide reactive power benefits. This outcome appears to be contrary to the intention of clause 5.6.6(b)(1)(iii) that

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32 ACCC, *Regulatory Test for New Interconnectors and Network Augmentations*, 15 December 1999, page 13.

33 We have argued in section 2.1 that it is in fact the *net benefit* of an alternative project that should have an impact on the regulatory asset value assigned to Murraylink. However the arguments in this section apply under either approach.

34 p 46-7, *"Murraylink Transmission Company Pty Ltd v National Electricity Market Management Company Ltd and Ors",* Decision of the National Electricity Tribunal dated 20 October 2002

35 See p 21 of the NERA Report.

clearly indicates that generation and demand side managements projects have the potential to be alternatives for network investment.

TEUS has also only considered alternative projects that increase power flows between Victoria and South Australia. However, MTC appear to have indicated that Murraylink also has the capability to increase power flows from NSW to South Australia, via Victoria.[36] As a result alternative projects that increase power flows between NSW and South Australia should also be included.

Under MTC's Approach the modified regulatory test is used not only to determine whether the asset should become a regulated asset but also as the basis of determining its regulatory asset value and is to be akin to optimisation of an asset, which has been the approach adopted by the ACCC in order to establish the regulatory asset value for existing assets.

The NERA Report notes that optimisation typically considers the size of the asset. Where the asset is considered to have capacity greater than that which is optimal, the asset will be included in the asset base at the value of a smaller, optimally sized asset.[37] In this context, Murraylink should also have considered the net market benefit associated with reduced Murraylink capacities. The existing Murraylink capability may not be the optimal size for a regulated interconnector. Murraylink itself notes in its Application that the ACCC will consider the prudence of the investment and may optimise down the value of the asset.[38]

In considering alternative projects, the language of the regulatory test makes clear that the timing of the project is also important. That is, Network Project A in 2005 is a separate project from assessment of Network Project A in 2007, as well as from Network Project B in 2005. In this way the regulatory test effectively optimises over different project timings, and ensures that regulated NSPs do not invest too early.

MTC's Application has considered the benefit of alternatives identified on the basis that they are in place today. To the extent that the net benefit of alternatives (including the construction of Murraylink) is *increased* by a delay in their timing, then this should be taken into account as part of the optimisation under the regulatory test.[39]

TransGrid notes that the Saha report provides little assistance to the ACCC in analysing this issue as it focuses on whether the alternative projects selected would be suitable in determining a DORC valuation and does not appear to provide a consistent answer to that question.[40]

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36 Murraylink Application, p.18.

37 See p 22 of the NERA Report.

38 Murraylink Application, p.5.

39 See p 22, The NERA Report, However, we note that the extent of the write-down in Murraylink's asset value *already implied* by the comparison of the gross benefits associated with Murraylink and its actual cost, means that any consideration of a delay in Murraylink's timing is not likely to have a material impact on the regulatory asset value derived.

40 Compare the statements on p 6 and p 75 of the Saha Report on the appropriateness of the alternative projects selected by MTC. While the Saha concludes that options 1, 2 and 3 identified by MTC are appropriate on p 6 as they all provide similar technical services, at p 75 it states that as the alternative projects considered all provide the same level of service as Murraylink, there has been no formal consideration of optimisation which would normally be associated with a DORC valuation.

(d) Analysis of Alternative Projects Selected by MTC

TransGrid has carefully analysed the alternative projects proposed by MTC and the BRW Report. Based on an analysis of this information TransGrid's submits that:

- the alternative projects proposed include plant that may not be required; and
- the cost of the alternative projects appears high.

Saha shares this last concern as it raises concerns in its report about the costs estimated by TEUS for the alternative projects considered. Significantly, Saha considers that the basis on which the alternative projects have been required to be undergrounded needs to be further justified, as it has a significant impact on the costs and therefore the asset valuation derived. Saha questioned both the need for, and cost of, underground cables for the alternative projects. It concluded that on the basis of the information provided to date, it did not consider that a sufficiently robust case has been made for the extent of undergrounding for it to be used to determine a DORC value.'[41]

Saha estimates that on the basis of no undergrounding, the cost of option 3 could fall by as much as $56.399m.[42] This implies that (with no other adjustments to the costs), the total lifecycle cost for option 3 would fall to $184m. Since this is below the net market benefit of Murraylink, on the approach proposed by Murraylink in its Application, the total regulatory cost for Murraylink would be set equal to the cost of Option 3. This in turn would imply a regulatory asset value for Murraylink of $146m[43] rather than the $176.9m proposed in the Application.

Saha also raised concerns that the P75 'contingency' element that has been built into the cost of alternative projects is 'an overly conservative basis for valuation.'[44] Saha recommends that it be revised so that it is based on a P50 level rather than a P75 level. Saha notes that it considers the P50 level more appropriate in the context of setting a DORC valuation. TransGrid notes that adopting Saha's position and setting the contingency at the P50 level would result in a decrease in the regulatory asset value derived for Murraylink.

It appears from the data presented in the Saha Report that the cost estimates for each of the alternative projects also includes a 10% mark-up for 'overheads and profit'.[45] TransGrid's position is that that while it is appropriate for 'overheads' to be included in the cost estimate, it is not appropriate to include 'profits' as a cost component.

As the regulatory asset value derived for Murraylink would be based on a cost estimate that already includes a profit element, any further allowance for profit results in 'double counting' of the profit element in Murraylink's revenue requirement. Depending on the split between 'overheads' and 'profits' in the project cost estimate, the cost of the alternative project may currently be inflated by up to 10%. For Option 3, this equates to $13.321m, and would result in a further overestimate of Murraylink's regulatory asset value by this amount.

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41 Saha Report, p.6. The Saha report notes that the underground cable cost has been obtained from only one supplier, Saha Report, p. 59.

42 Saha Report, p.61.

43 ie, total cost of option 3 = $184m *minus* lifecycle opex for Murraylink $37.334m = $146m.

44 Saha Report, p. 62.

45 Saha Report, pages 54-58.

A detailed analysis of the alternative projects suggested by MTC is set out in an Appendix to this submission.

(e) Other Alternative Projects

The following are some projects not considered by TEA or BRW. The costs quoted are indicative.

SNI

Capability greater than 200 MW to the combined Victoria / South Australia region and cost of the order of $110M.

Heywood A plus Robertstown – Monash line

The IOWG found a capability of 130 MW for this option. The total cost is expected to be of $100M made up of:

- $60M for interconnection work
- $30M for the new line to Monash
- $10M for the transformer connection at Monash

Horsham A option plus Robertstown – Monash line

The IOWG found a capability of 220 MW for this option. The total cost is expected to be $160M made up of:

- $120M for interconnection work;
- $30M for the new line to Monash; and
- $10M for the transformer connection at Monash.

NEWVIC 2500 plus Robertstown – Monash line

NEWVIC 2500 is a conceptual project and significant work remains to prove its feasibility. In theory it provides 400 MW to the combined Victoria / South Australia region. The total cost is expected to be $200M made up of:

- About $160M for the interconnection work;
- $30M for the new line to Monash; and
- $10M for the transformer connection at Monash.

3.3 Other Issues

As MTC's approach depends to a large extent on the gross market benefits in determining a regulatory asset value for Murraylink, it is very important that these benefits are calculated as accurately as possible.

However, there are number of flaws in the way in which MTC has calculated the gross market benefits from Murraylink in its application:

- MTC has not calculated the gross market benefits of Murraylink over a range of market development scenarios;
- MTC's approach to calculating reliability benefits is inappropriate;
- MTC has included Riverland Deferral benefit in all the market development scenarios;
- the commercial discount rate used is not actually a commercial discount rate; and
- the level of losses assumed in the analysis appears low.

(a) Market development scenarios

The level of gross market benefits for Murraylink included in MTC's Application cannot be relied upon by the ACCC in its evaluation of MTC's Application under clause 2.5.2(c) of the Code because TEUS did not consider any alternative market development scenarios in its assessment of the market benefit associated with Murraylink.

As discussed above, this approach is not only inconsistent with the requirements of the regulatory test but also means that TEUS' calculation of Murraylink's gross market benefits is not sufficiently robust to be used as the basis of an asset valuation because it does not take account of the potential impact of different developments in the NEM on the benefits of Murraylink to the market. The CRA Report that assesses the TEUS analysis itself notes that:

> *'A balanced selection of scenarios is an essential part of the regulatory test to capture the uncertainties in market development over time'.*[46]

Saha International Energy Limited (**"Saha**") also commented adversely on the fact that MTC's Application only contains three market development scenarios, no sensitivity tests and that the calculation of the proposed regulatory asset value has been based on only one of these scenarios.[47] In fact Saha comments in its report that consideration of uncertainties in generation/transmission outages and alternative growth scenarios are not sufficient to meet the regulatory test requirement for a balanced selection of scenarios and a range of sensitivities for critical parameters.[48] TransGrid shares Saha's concerns with respect to the lack of market development scenarios used in MTC's evaluation of Murraylink.

However, TransGrid notes that Saha's report is deficient in that it doesn't contain any discussion of the inclusion of network developments in the market development scenarios. In particular, it does not assess the impact on the net benefit calculated for Murraylink if the SNI project is assumed to proceed, and is incorporated as part of the background market

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46 Murraylink Application, Appendix E, p. 16. The CRA report itself incorrectly classifies TEUS' sensitivity test on the discount rate as market development scenarios (p.20).

47 Saha Report, Appendix A, p. 84.

48 Saha Report, Appendix A, p. 85

development scenario. TransGrid is surprised at this omission given that it appears with Saha's own analysis in the report that the regulatory test requires a consideration of 'a balanced selection of scenarios and a range of sensitivities for critical parameters.'

TransGrid notes that by the time the ACCC makes its decision SNI is expected to the IRPC criteria for "committed" and therefore it should be assumed as part of the base case in all calculations of Murraylink's market benefit. At the very least, SNI should be treated as highly probable and treated as being part of the background network in some of the market development scenarios for sensitivity checks. It should be treated as a practicable alternative project in those market development scenarios where it is not assumed in the base case.

The ACCC should require MTC to provide it with information calculating the gross market benefits of Murraylink over a range of market development scenarios which include future transmission and generation investment as changes in both these types of investment are interrelated and will impact upon the gross market benefits of Murraylink to the NEM particularly in deferring other transmission augmentations and further generation.

The alternative market development scenarios selected should include likely transmission augmentation such as SNI, Basslink and any potential upgrade of the Heywood Interconnector that can be expected to have a material impact on the assessment of Murraylink.

Similarly, the ACCC cannot rely upon MTC's calculation of Murraylink's gross market benefits in evaluating its application unless that information has been calculated using SRMC and more realistic bidding scenarios as is required by the regulatory test. While those benefits will inevitably be large under the more realistic bidding scenarios, so might the benefits of the alternative projects to Murraylink be disproportionately bigger.

Therefore in order to have a proper basis of comparison of Murraylink against the alternative projects, MTC must provide the ACCC with modelling analysis that explicitly considers the impact on the regulatory asset value of non-SRMC bidding assumptions in calculating the benefit attributed to Murraylink from deferring generation and in particular the *net impact* on the regulatory asset value calculated for Murraylink[49].

This concern is shared by Saha which notes in its report that there are shortcomings in the TransEnergie US analysis as it has only used SRMC bidding in its modelling, and recommends that other bidding assumptions are considered (in line with previous studies) in order to determine the materiality on the results of the assessment.[50] Saha concludes that: [51]

> '*...further review of the detailed modelling techniques, assumptions and outcomes is warranted, as the value of generation deferral is a key component of the overall estimate of market benefits.*'

(b) Riverland Deferral

The TEUS analysis attributes a benefit to Murraylink for deferring the need for network augmentation in the Riverland region of South Australia.

To the extent that Murraylink defers the need to undertake network augmentation, then we agree that this represents a benefit to the market. However, consideration of whether

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[49] See p 13, section, 3.1.1 of the NERA Report. *As discussed in section 2.1.1, the benefits of alternative options need to be considered along with their costs in deriving a regulatory asset value for Murraylink at which Murraylink would pass the regulatory test.*

[50] Saha Report, p. 38 and 44.

[51] Saha Report, p.5.

Murraylink defers the need for augmentation in the Riverland area cannot take place in isolation from a more general consideration of future transmission augmentations. That is, the assessment of Murraylink needs to take place against background market development scenarios, which set out the transmission and generation investments that may be expected in the absence of Murraylink.

TEUS appears to have included the Riverland augmentation in the market development scenario against which Murraylink has been assessed. However, alternative market development scenarios may not all include the Riverland augmentation. Under these scenarios, there would be no deferral benefit associated with Murraylink.

As discussed in section 3.1.1 above, the assessment of the gross benefits of Murraylink needs to be conducted in relation to all credible market development scenarios.

(c) Reliability benefit[52]

A significant benefit associated with any alternative which increases the power flows between regions is that it enables the generation reserve in each region to be shared, and therefore increases the reliability of the system and potentially reduces the need for investment in 'reliability generation'.[53] The generation reserves for each region are determined by the Reliability Panel[54]

The reliability standards specified by the Reliability Panel are that:

- in any region, the Unserved Energy ('**USE**') in a year must not, on average, exceed 0.002% of the total energy consumed in that region in the year; and
- the minimum reserve level in each region must be greater than or equal to the size of the largest single generating unit in the region.[55]

The Reliability Panel states that the triggers for intervention in the market on account of there being insufficient reserve generation be set, for each region of the NEM, at the *greater* of the above reliability standards.[56] This means that both criteria need to be considered in modelling the forecast level of reliability generation in the market.[57]

In its evaluation of SNI and SNOVIC 400, the IRPC explicitly considered the reserve levels established by the Reliability Panel for each region in the NEM, and then compared the expected market generation with these required reserve levels. Where there was a shortfall, reliability generation was then added to the market development scenario, such that the reserve criterion was met. The reliability benefit associated with each alternative project in the SNI and SNOVIC 400 analyses was then calculated on the basis of the extent to which each alternative defers the need for this reliability generation. As such, the calculation of the reliability benefit was conducted on a similar basis to the calculation of the benefit from the deferral of market generation.

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52 For a fuller description of this issue see pgs 14-16, section 3.1.2, of the NERA Report.

53 p 14 of the NERA Report.

54 The Reliability Panel was established by NECA in June 1997.

55 NEMMCO*, 2001 Statement of Opportunities*, page 1-24.

56 Reliability Panel, *Reserve Trader and Direction Guidelines and Policies*, June 1998.

57 para 216, Witness Statement of G Houston dated 28 June 2002.

The approach by MTC to calculate the reliability benefit is very different from that used by the IRPC in its evaluation of SNI and SNOVIC 400. MTC has calculated the reliability benefit by assessing how much market-driven generation is expected under both the 'with Murraylink' and 'without Murraylink' scenario, and then calculating the extent of the unserved energy which remains (using a probabilistic modelling tool) and valuing this unserved energy at VOLL (ie, $10,000/MWh).[58]

TEUS' argument in support of the approach it has adopted is that it captures both the size and duration of capacity shortfalls,[59] and enables the increased reliability that Murraylink provides to be directly measured, rather than using a shadow valuation technique such as 'installed capacity margins'.[60]

There is an important distinction between the valuation of reliability improvements that allow a reserve standard to be met, and the valuation of improvements over and above that standard.

A shortfall in reserve levels will trigger the reserve trader mechanism under which NEMMCO will contract for additional generation capacity. The cost of this additional capacity is a resource cost to the market, which should be incorporated in the analysis. This cost is not related to the expected duration of the capacity shortfall, in terms of periods in which the reserve level is not met. The cost associated with installing OCGT plant to meet the reserve requirement, and the reliability standards that underlie the reserve requirement, are not directly linked to the VOLL associated with unserved energy.

It is only where the differences in reliability are **above the reserve level** that the form of unserved energy (USE) valuation used by TEUS becomes appropriate. The IRPC analysis noted that the reduction in USE *over and above the required reserve level* was a benefit to the market options. [61] Although not included in the IRPC's final analysis (since the impact was not considered to be material), the IRPC earlier noted that this benefit could be valued at USE times VOLL, ie, an approach similar to that undertaken by TEUS.[62]

We note that the CRA analysis of the TEUS assessment also distinguishes between the capacity deferral benefit of an interconnector in allowing more efficient sharing of reserve capacity and the reliability benefits associated with the reduction in expected USE from unforeseen events, although they later assert that these different approaches will give the same result.[63]

The extent to which the difference in the approach for valuing reliability benefit adopted by TEUS will have an effect on the calculation of the gross benefit associated with Murraylink is not certain. TransGrid therefore submit that, at the very least, the materiality of the difference in the approach is established by also valuing the reliability benefit associated with Murraylink

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58 TransGrid notes that the Saha Report is incorrect when it states that the approach taken by TransEnergie US to valuing reliability benefit is the same as that taken by ROAM in evaluating SNI and SNOVIC, see p 17 of the Saha Report.

59 Murraylink Application, Appendix D: *Report – Report on the Estimation of Murraylink Market Benefits – TransEnergie US Ltd,* p.6.

60 Murraylink Application, p.19.

61 See IRPC *Stage 2 Report, Proposed SNI Interconnector*, October 2001, p.11.

62 See IRPC *Stage 1 Report, Proposed SNI Interconnector*, August 2001, p.31.

63 Murraylink Application, Appendix E: *Report – Review of TEUS Market Benefits Report – Charles River Associates (Asia Pacific)*, p.1-2 and p.25.

on the basis of the value of the deferral of reliability generation (ie, on a consistent basis to the previous IRPC analysis).

TransGrid also notes that the extent of the reliability benefit associated with Murraylink is likely to be materially affected by the assumed market development scenarios. This again highlights the importance of the analysis encompassing several market development scenarios, in order to ensure that the regulatory asset value derived is robust.

(d) Commercial discount rate

TEUS has used a discount rate of 9.25 per cent (pre tax, real) in its assessment of the NPV of the gross benefits of Murraylink. This discount rate was adopted after advice from Deloitte Touche Tohmatsu ("**DTT**").[64]

The regulatory test assessment uses a discount rate applicable for a private sector enterprise in the NPV analysis, even in the evaluation of regulated options, so as not to bias the outcome of the regulatory test in favour of regulated alternatives. The 9.25 per cent discount rate used by TEUS is significantly below the central estimate of 11 per cent used in other recent applications of the regulatory test.[65] The effect of this is to increase the regulatory asset value derived for Murraylink, since a lower discount rate is likely to increase the NPV of the gross benefits of Murraylink by more than it would decrease the NPV of Murraylink's operating and maintenance costs.

The report provided by DTT, which TEUS relies on to justify its choice of discount rate, appears to involve a fundamental misconception: DTT's analysis uses parameters which are appropriate for a regulated business rather than a commercial business, and contains a number of unsupported assumptions. As such, DTT has not provided a rationale for deviating from the 11 per cent commercial discount rate used in previous applications of the regulatory test.[66]

The commercial discount rate has proved to be a relatively uncontroversial parameter in the regulatory test assessment. However, it should be noted that the IRPC was only required to *rank* alternative projects under the regulatory test, with the absolute values not being relevant. As such, to the extent that changes in the commercial discount rate do not change the rankings of alternative projects, the choice of discount rate would not be expected to be overly controversial. In contrast, TEUS' choice of the discount will have a direct impact on the regulatory asset value derived for Murraylink.

TransGrid's position is that the discount rate of 9.25% used by MTC is too low and that an appropriate discount rate is 11% as used by the ACCC in the past.

(e) Losses

It appears from the MTC application that MTC has analysed the benefit from Murraylink on the basis of assuming losses through sending power across Murraylink of approximately 6%[67].

TransGrid has not direct experience of the HVDC light technology used as part of Murraylink but understands these MTC's quoted losses seem lower that the 7-10% experienced on similar

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64 Appendix C of Murraylink's Application to the ACCC

65 The commercial discount rate of 9.25 per cent (real, pre-tax) is below that used in the recent regulatory test evaluations carried out by the IRPC. The IRPC used a real pre-tax commercial discount rate of 11 per cent in its assessment of SNOVIC 400 and SNI. The IRPC conducted sensitivity analysis of the discount rate by using rates of 9 and 13 per cent.

66 For an in depth discussion of the flaws in DTT's approach see section 3.1.4 of the NERA Report.

67 Appendix A of Murraylink's Application to the ACCC at page 6.

projects elsewhere. Capitalisation of these losses over the life of the project would be a significant amount and should be taken into account.

4. Regulatory Consistency

4.1 Pass-Through Mechanism

MTC has proposed a pass-through mechanism to address events that could occur outside of its control and that could substantially increase its costs and/or decrease the value of its regulatory asset base. It proposes that on the occasion that one of the following identified events occurs, it would seek an adjustment of its maximum allowable revenue and/or a capital expenditure programme in accordance with pass-through rules to be developed by MTC and approved by the ACCC to enable the cost to be passed through.

The specified events are as follows:

(a) **Service Standards Event** - any change to the scope of standards or benchmark levels to which MTP's maximum allowable revenue would be indexed, including changes to the Code, and relevant decisions of NECA, NEMMCO, the ACCC or any commonwealth or state government;

(b) **Connection Agreement Event** - any material change to MTC's connection agreement that results in a material change to MTP's or MTC's costs;

(c) **Regulatory Event** - any change to the Code or any relevant decision of NECA, NEMMCO, the ACCC or any commonwealth or state government, which materially changes MTP's operating costs;

(d) **Tax Event** - any change to the scope or levels of tax payable by MTP;

(e) **Terrorism Event** - any event of terrorism, which includes the threats associated with terrorism;

(f) **Insurance Event** - any material change to the extent of available cover or cost of insurance relative to that forecast as part of MTP's revenue path;

(g) **Uninsured Event** - any event causing loss to MTP for which MTP has been unable to procure insurance cover at economic cost or because insurance cover was not available at all; and

(h) **Non-Contestable Capital Works Event** - any event where MTP is required under a connection or network service agreement to undertake non-contestable capital works, as defined in the Code, and the establishment costs of those works is rolled into MTP's regulatory asset base.[68]

MTC submits that these events are outside of its control and could substantially increase its costs and/or decrease the value of its regulatory asset base. It has indicated that it will lodge further information setting out the appropriate pass-through rules.[69]

While MTC has not yet lodged a supplementary set of rules regarding a pass-through mechanism with the ACCC, the ACCC issued its final decision on Victorian Transmission Network Revenue Caps 2003-2008 (the **"SPI Powernet Decision"**) on 11 December 2002. The ACCC refers extensively in the SPI Powernet Decision to its previous decision with respect to pass-through mechanisms in setting the reference tariff for GasNet access arrangements for 2002 (the **"GasNet Decision"**).

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[68] Pages 61-62 of the Application.

[69] MTC noted that it is awaiting the outcome of the ACCC's decision on SPI Powernet's application for a pass-through mechanism as part of its revenue cap.

TransGrid submits that it is not appropriate to approve the pass-through mechanism proposed by MTC. MTC's proposed pass through mechanism is asymmetric in that it only provides for an increase in MTC's revenue cap where the specified costs have increased as a result of one of the 8 defined events occurring. It does not provide for a decrease in its revenue cap when there is a reduction in any of the relevant cost categories identified in 8 events.

The ACCC in both the GasNet decision and the SPI PowerNet decisions required that any pass-through mechanism be symmetric, that is, that it provide for potential increases and decreases in the Service Providers revenue cap. Furthermore the ACCC has also required that, in response to the obvious concern that it is unlikely that a TNSP will bring to its attention a situation whereby there is a reduction in its costs, for the ACCC to be able to initiate the pass-through mechanism.

In the SPI Powernet decision, the ACCC was commenting specifically on the proposed pass-through rules put forward by SPI Powernet as part of the original application for a new revenue cap for the period 1 January 2003 to 31 March 2008 (the **"SPI Powernet Rules"**). The SPI PowerNet Rules contain procedure whereby SPI PowerNet has to notify the ACCC either a pass-through event has or is likely to occur. That notice has to specify:

- the details of the relevant pass-through event;
- the date on which the relevant pass-through event took effect or will take effect;
- the estimated financial effects of the pass-through event on the provision of revenue capped transmission services, and
- the pass-through amount proposed by SPI Powernet in respect of the relevant pass-through event.

The ACCC then had 30 business days to consider:

- whether the pass-through event did occur or would occur;
- if so whether it will decide the pass-through amount,
- the form of pass-through amount;
- the date from and the period over which the pass-through amount may be applied; and
- notify SPI Powernet in writing of its decision.

If the ACCC did not give SPI PowerNet such direction within the specified 30 business days, then SPI PowerNet was allowed to proceed with the pass through on the basis specified in its original application to the ACCC.

Clause 2.3 of SPI PowerNet's rules stated that the ACCC in seeking to ensure that the financial effect on SPI Powernet associated with the pass-through event concerned was economically neutral, it must take into account:

- the relative amounts of revenue capped services supplied to each customer;
- the time costs of money for the period over which the pass-through amount is to be applied; and
- the financial effect on SPI PowerNet associated with the provision of revenue capped services attributable to the pass-through event and the time at which the financial effect took place or will take place.

Clauses 2.3(d) to (g) of the Pass-Through and rules specifies additional factors that the ACCC must take into account with respect to each of the different Pass-Through Events provided for in SPI PowerNet's Rules.

SPI PowerNet's Rules do not prescribe one specific form of pass through. However clause 1.4 of the SPI PowerNet Rules states that the following forms of a pass-through amount are acceptable:

- as an increase in the amount of the revenue cap (with SPI Powernet to determine the corresponding change in customer charges in accordance with the Code);
- as a percentage change in one or more of its customer charges[70]; or
- as a change to one or more customer charges.

Another issue identified by the ACCC in both the GasNet Decision and the SPI PowerNet Decision was that the pass-through mechanism should specifically recognise that the ACCC has the ability to require public consultation on the proposed pass-through amount put forward by the TNSP. In order to facilitate potential for public consultation, the ACCC required that it be given 40 business days within which to consider any application by GasNet or SPI PowerNet and that it also be given the specific power to extend that period as necessary.

The ACCC required SPI PowerNet to amend its Pass-Through Rules so that notice of the pass-through event was accompanied by sufficient information (including documentary evidence) outlining the impact of any proposed event on aggregate company costs in order to allow the ACCC to make an informed decision.

The ACCC also required SPI PowerNet to make a number of specific amendments to the definition of each of the 4 types of pass-through events identified. The most significant of these was with respect to a relevant tax for the purposes of the Changes in Tax. The ACCC concluded that certain types of tax that fell within the original definition of relevant tax proposed by SPI PowerNet should be excluded from the pass-through mechanism. These included income tax (or state equivalent income tax) and capital gains tax, penalties and interest for late payment relating to any tax, rate duty, charge, levy or analogous impost. The latter were excluded because the ACCC held that these costs were within SPI Powernet's control and therefore should not be subjected to the pass-through as it was not in the interests of customers to incur charges that SPI PowerNet was able to avoid entirely.

In addition, the ACCC also excluded from the definition of relevant tax fees and charges paid or payable in respect of a service standards event. The ACCC considered that the pass through of these costs and the relevant tax definition could lead to double counting of pass-through amounts which was not appropriate. Further the ACCC excluded from the definition of relevant tax stamp duty, financial institutions duty, bank accounts debits tax or similar taxes or duties. This was because any assessment of these costs would be a very large exercise and on a cost benefit basis, it would not be in the interests of SPI Powernet to undergo such an exercise nor in the interests of customers.

Instead the ACCC said that it had determined that taxes such as fringe benefits tax, payroll tax, land tax, and municipal rates and taxes are taxes that would be incurred by a prudent service provider acting efficiently and that these costs should be incorporated into a revenue cap.

TransGrid submits that any definition of *"tax event"* proposed by MTC should be no broader than that allowed by the ACCC with respect to SPI Powernet.

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[70] One potential problem with this clause 6.5.5(a) of the Code contains instructions on the percentage increase in customer TUOS and prices at any individual connection point.

With respect to the definition of insurance event under SPI Powernet's proposed rules the ACCC required it to allow for changes in the cost of insurance that become materially higher or lower than the costs of insurance at the date of determination. The ACCC also required in the public interest it to provide a period that allows full assessment of pass-through proposals and that 40 business days was reasonable and that there must also be a provision for the ACCC at its discretion to extend the period to adequately assess pass-through proposals. Where possible the information provided by SPI Powernet in support of any pass-through application should also be provided in the public domain. In addition, SPI Powernet was required annually (at least 50 business days prior to the start of the financial year) to provide the ACCC with a copy of insurance premium invoices, irrespective of whether a pass-through event statement had been submitted in that year or not.

TransGrid submits that any passthrough allowed to MTC should be on the same basis as the ACCC allowed to SPI Powernet.

The ACCC also allowed SPI Powernet to include in its scheme what it described as a service standards event. A service standards event was defined as follows in SPI Powernet's proposed pass-through rules:

> *"Service standards event means a decision made by the Commission, the Essential Services Commission or any other authority or any introduction or amendment to an applicable law after the date of the determination that:*
>
> *(a) has the effect of:*
>
> *(i) imposing or varying minimum standards on SPI Powernet in relation to revenue capped transmission services that are more onerous than the minimum standards applicable to SPI Powernet in respect of revenue capped transmission services at the date of the determination;*
>
> *(ii) altering the nature or scope of services that comprise the revenue capped transmission services;*
>
> *(iii) substantially varying the manner in which SPI Powernet is required to undertake any activity forming part of revenue capped transmission services from the date of the determination; or*
>
> *(iv) increasing SPI Powernet's risk in providing the revenue capped transmission services; or*
>
> *(b) results in SPI Powernet incurring (or being likely to incur) materially higher costs in providing revenue capped transmission services than it would have incurred but for that event."*

The ACCC accepted this proposed definition except for introducing the requirement that it incorporate both increases and decreases in the regulatory requirements so that it was symmetric and also to require further information to be provided.

It appears that Murraylink in contrast has broken up these events into two separate types of event being Service Standard Event as defined by Murraylink as follows:

> *"Service standard event - any change to the scope of standard or benchmark[ables] to which MTP's maximum allowable revenue would be indexed, including changes to the National Electricity Code, and relevant decisions of the National Electricity Code administrator, NEMMCO, the Commission or any commonwealth or state government."*

While Regulatory Event is defined as follows:

> *"Regulatory event - any change to the National Electricity Code or any relevant decision of NECA, NEMMCO, the Commission or any commonwealth or state governments, which materially changes MTP's operating costs."*

TransGrid notes that the regulatory event pass-through as sought by MTP is an event that materially changes MTP's operating costs and is not linked to MTP's operating costs with respect to providing revenue capped transmission services. Given that as discussed above, many of the services provided by MTC are not prescribed services, TransGrid submits that the changes in costs should be limited to costs involved in providing prescribed services.

Further, TransGrid notes that, other than events which would seem to be captured by MTC's proposed regulatory events or service standard events, any material change to MTC's connection agreement would have to occur with MTP's agreement and therefore is an event within its control which is not appropriate to be passed on to customers.

Similar considerations arise with respect to the non-contestable capital works event Murraylink wishes to include in its pass-through mechanism. Where MTC does undertake these works the eligibility of these works to be included in MTC's regulatory asset base should be evaluated on the same evaluation basis that ACCC uses for all transmission network service providers owners assets.

It is also unclear why the pass-through mechanism proposed by MTP sometimes refers to MTC's costs and other times refers to MTP's costs.

Finally TransGrid notes that it is important to ensure that there is no double counting of events by a single event triggering more than one pass through. TransGrid also recommends that a concept of materiality be introduced to avoid the pass through being triggered by minor changes.

4.2 Weighted Average Cost of Capital ("WACC")

There are a number of differences between MTC's proposed WACC and the WACC used in recent ACCC decisions that warrant careful consideration by the ACCC. These are set out in the NERA Report. [71]

4.3 Service Standards

TransGrid agrees with MTC that Circuit Availability is an appropriate performance measure. However, it supports the comments in the PB Associates report on Service Standards that the benchmark of 97% circuit availability appears to be too low. TransGrid notes the ABB based estimate of 98.16% circuit availability for DC light technology mentioned in PB Associates report and suggests that this supports the imposition of a higher standard of circuit availability for Murraylink than the proposed 97%.

4.4 Return on Equity

TransGrid notes that the target return on equity of 12.15% proposed by Murraylink exceeds the target levels of return on equity allowed by the ACCC in the present Powerlink, Snowy, ElectraNet SA, SPI PowerNet and GasNet Victoria revenue determinations. MTC's request for this higher level of regulated returns is consistent with TransGrid's submissions to the ACCC regarding this issue in which TransGrid has referred to overseas literature suggesting that

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[71] See Section 4.1 of the NERA Report.

higher levels of return on equity are appropriate to stand alone transmission businesses such as TransGrid.[72]

Accordingly, TransGrid supports MTC's request for target return on equity of 12.15% on the basis that the ACCC recognises that it is appropriate for all TNSPs to receive this higher return. TransGrid is not aware of any good reason for the ACCC to discriminate between the return on equity MTC receives and that received by other TNSPs.

4.5 Return of Capital (Depreciation)

It appears from the level of regulatory depreciation MTC is seeking in its application is based on an asset life of less than 20 years. In most other instances (except for new transmission developments established under the Victorian transmission arrangements) the ACCC has used longer lives for regulatory depreciation purposes. For example, in TransGrid's most recent revenue cap determination depreciation for substations was based on forty year lives and depreciation for transmission lines was based on fifty year lives. TransGrid understands that this approach was maintained by the ACCC in its recent revenue determinations for ElectraNet SA and SPI PowerNet.

Nevertheless, TransGrid would welcome the general application of shorter asset lives for regulatory depreciation purposes, provided that such adjustment is also applied to TransGrid and other TNSPs at future revenue resets. While, TransGrid recognises that this may represent a departure from the principles of economic depreciation, it would reduce the investment risk associated with the development of regulated transmission in the NEM, and align practice between the effective depreciation applying under the Victorian transmission arrangements and the remainder of the NEM.

4.6 Regulatory Control Period[73]

MTC is proposing that the regulatory period established for Murraylink should be for ten years, from 2003 to 2012, rather than the usual five year regulatory period. The period of five years is designed to give the business sufficient time to make efficiency gains and ensuring that they don't have to wait too long before getting the benefit of the efficiency gains in the form of lower prices.

MTC argues that there is little scope for efficiencies in capital expenditure or operating costs over the 10 year period as Murraylink is already built and its operating costs are expected to be at world-class levels. Murraylink argues that the costs involved in conducting a regulatory review after five years would not therefore be justified by the extent of efficiency savings that might be passed through to customers as the result of such a review.

TransGrid supports a longer duration between regulatory resets for regulated transmission services, particularly where this is coupled with scope to 'pass through' cost increases and decreases that are outside the control of the regulated business, and meaningful measures of service performance. This framework would provide a strong incentive for transmission businesses to make efficiency gains while maintaining service levels. TransGrid notes that the Code encourages a reset period that is a minimum of five years.

However, a major disadvantage to the market and particularly customers of the proposed ten year regulatory period is that the ACCC would not have any scope to re-optimise the value of Murraylink's asset base if future circumstances change. This would mean that customers

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[72] Indeed, Murraylink's application in this regard aligns closely with the approach taken in relation to TransGrid's last revenue determination once adjustments are made for movements in market interest rates since that time.

[73] See section 4.2 of the NERA Report.

could potentially have to pay inflated prices for Murraylink's services for a five year period unnecessarily. This means that there is an even greater need to ensure that the process used to determine the initial asset valuation is robust.

To address this issue, NERA proposes that the regulatory test be applied to the project specified as 'the change in status of Murraylink from a market network service provider (MNSP) to a regulated interconnector to assess MTC's application for conversion.'[74] Under this approach, the background market development scenario would be one that contained Murraylink operating as an MNSP, i.e., operating in the market as it does currently.

The application of the regulatory test under this approach would in effect be asking the question: What is the net benefit to the market of Murraylink changing its status from an MNSP to a regulated interconnector? The answer to that question would establish the value to the market of Murraylink's change in status.

The maximum regulated cost (i.e. lifecycle opex plus regulatory asset value) that should be set for Murraylink would then be the lower of:

(a) the capex cost plus lifecycle opex costs for Murraylink; or

(b) the expected revenue for Murraylink if it continued to act as an MNSP plus the net benefit to the market of Murraylink changing its status from an MNSP to a regulated interconnector.[75]

The first condition ensures that the regulated return that Murraylink receives from converting does not exceed its actual costs (i.e., actual capex cost plus opex cost). This is the return that a regulated interconnector would expect to receive, if it passed the regulatory test.[76] The second condition ensures that the amount paid to Murraylink does not exceed what market participants are willing to pay Murraylink (as an MNSP) plus the additional benefit to the market from the conversion in Murraylink's status.

By setting Murraylink's revenue below this maximum amount, the ACCC ensures that consumers benefit from the change - eg, setting the revenue so that it recovers less than 100% of the market benefit from the change in status would ensure that consumers benefit too. The ACCC would decide the proportion of the benefit reflected in the revenue.

As a result expected revenues are established by considering how the market will develop if Murraylink continues to act as an MNSP –as that is the relevant counterfactual for Murraylink in making its decision on whether to change status. As such, it would continue to require a consideration of the most likely market development scenarios. However, there would be a number of differences in the analysis carried out in evaluating the market benefit of a change in the status of Murraylink compared to an assessment of the market benefit with Murraylink and without Murraylink.

For example, under Nera's approach if Murraylink entered into a network support contract with ElectraNet SA for the Riverland area to defer network augmentation, there would be no *additional* benefit to the market in relation to Riverland network deferral that arises from the change in Murraylink's status from an MNSP to a regulated interconnector. This is in comparison to the evaluation of Murraylink under MTC's approach whereby Murraylink is

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74 For a detailed discussion of this approach see section 2.3 pgs 8-11 of the NERA Report.

75 For a detailed discussion of this approach see section 2.3 pgs 8-11 of the NERA Report.

76 If the regulated cost were set above this level, this would imply a benefit to the proponent from constructing an interconnector as an MNSP and then converting to regulated status. This in turn would have dynamic efficiency implications (see section 2.4).

attributed a network deferral benefit for the Riverland area regardless of the fact it may in its capacity as an MNSP enter into a network support agreement with ElectraNet SA. [77]

Nera notes in its report that this alternative approach is not without its drawbacks. For example, there may be dynamic efficiency concerns if this approach was adopted in the absence of there being clear long-term guidance on the principles applying to conversions. While the approach is efficient from a static perspective as once built, there are benefits to the market from the MNSP converting, it may not be efficient from a dynamic perspective as it doesn't provide an incentive for the MNSP to avoid gold-plating and doesn't provide a level playing field between regulated interconnectors and MNSPs.

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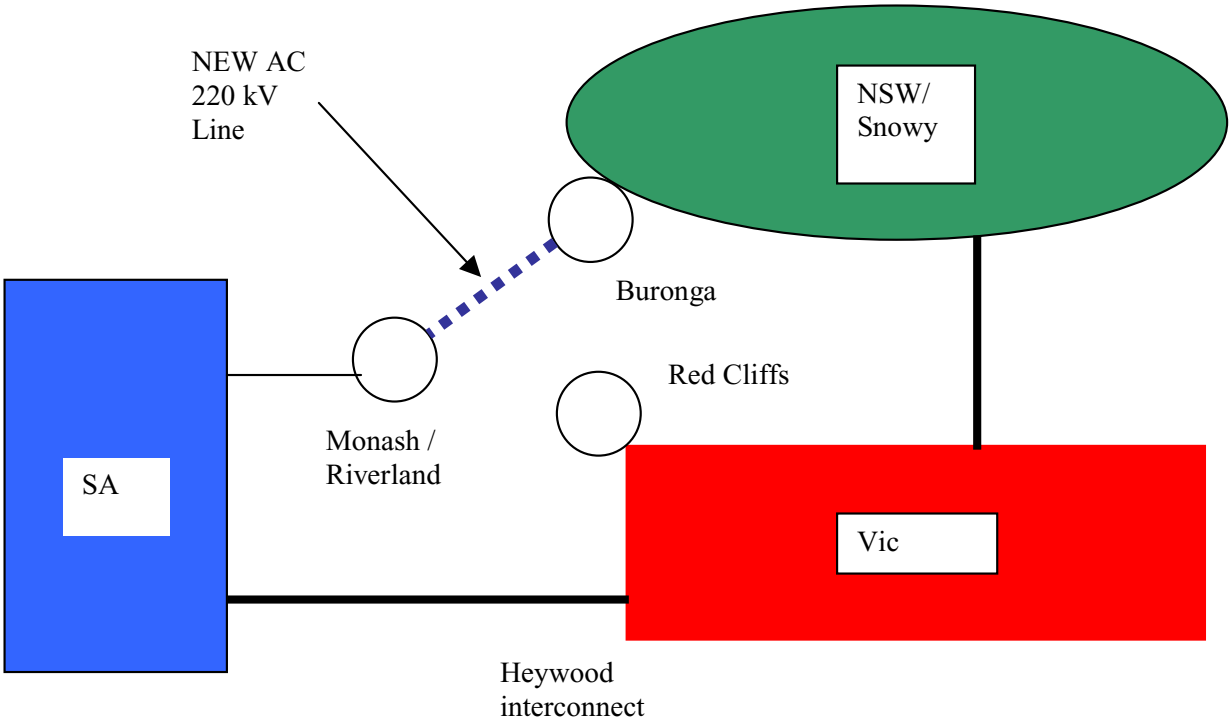
[77] ESIPC, *Riverland Augmentation Report*, December 2001, page 20. See also *Witness Statement of Anthony Steven Cook in Reply*, 16 August 2002, paragraph 244, in the matter of an Application for Review of a NEMMCO determination on the SNI Interconnector in front of the National Electricity Tribunal.

Appendix

Analysis of Proposed Alternative Projects

1. Alternative Project 1 -Buronga – Monash AC 275 kV Line



Alternative 1 is a connection from Buronga to Monash and hence is similar in concept to the Buronga to Monash component of SNI. This alternative consists of an overhead AC line with a 30 km underground section. The description of the project in the MTC documentation is confusing. The new line is described as being constructed at 275kV but operated at 220kV. In the single line diagrams in the documentation it appears to directly connect to the Buronga 220 kV bus but includes 275/132 kV transformers at Monash. It also appears that a 275 kV construction has been assumed on the basis of the Darlington Pt – Buronga system being upgraded to 275 kV operation. It is possible that in this alternative a lower project cost would have resulted if the line was constructed at 220 kV and the transformation at Monash became 220/132 kV.

Perhaps the intention was to design a scheme that could be converted to 275 kV operation when the Darlington Pt – Buronga system was upgraded to 275 kV. Hence Alternative 1 includes additional works than required for the project itself, at additional cost.

Power Transfer Capability of Alternative 1

MTC's Application provides very limited details of power flow studies and there is no evidence supporting the need for all the plant associated with the alternative. Further analysis on the design is required to be certain of its capability.

Operation of this new line with power flow of the order of 200 MW would significantly stress the NSW 220 kV system.

Plant and Costs

A cost breakdown into categories of approvals, development costs, line costs and switchyard costs is given in Appendix 5 to the MTC Application. The cost of individual plant items is difficult to derive from the table in section 3.1. of Appendix 5.

However, TransGrid notes the following issues with the cost provided:

(a) two 275/132kV transformers are provided at Monash with a spare. In reality one transformer is required at Monash with a spare if necessary;

(b) the provision of a spare phase shifting transformer appears unnecessary;

(c) the line and cable cost is given as $88M compared to an overhead line of the order of $30M;

(d) An SVC is included at Monash at a cost of $19M, however, in early TransGrid/ETSA studies on network development similar to this option, an SVC was not required;

(e) the 132 kV connection cost at Monash is stated as $10M but TransGrid considers this is more likely to be of the order of $2M. A detailed engineering review is required to estimate the cost of the works;

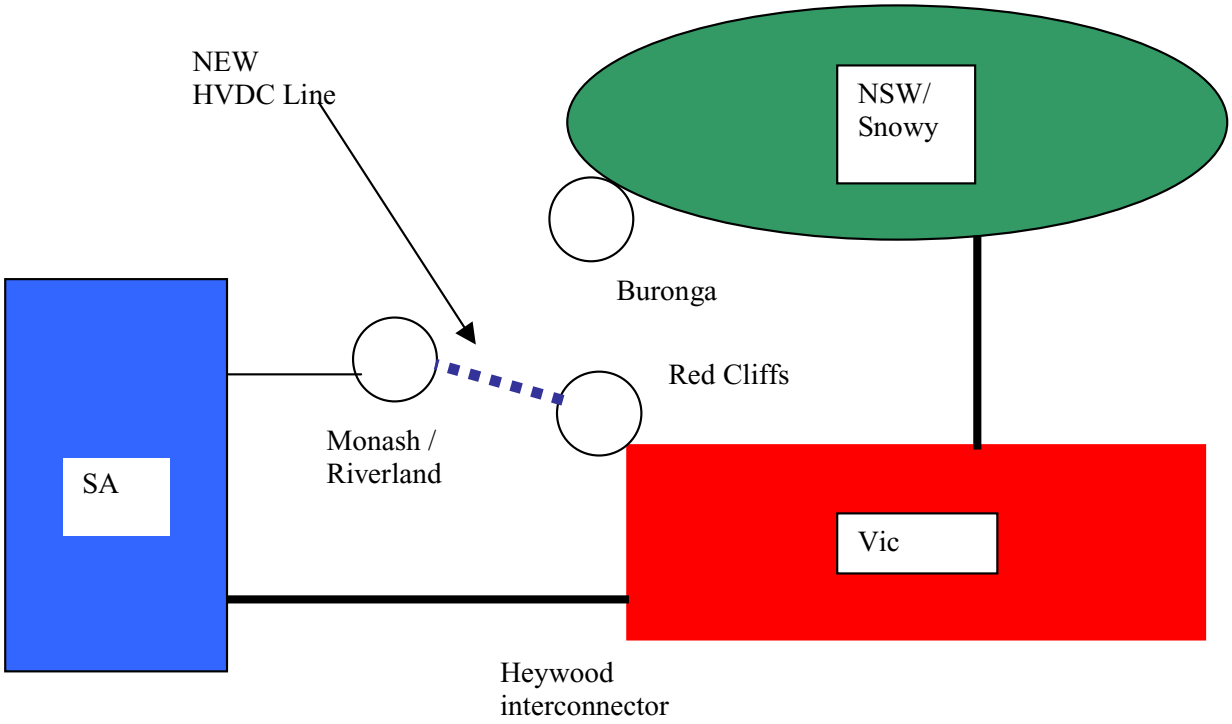
(f) BRW quote the total cost of transformers (without spare) and connection at Monash to be in the order of $20M whereas, in the context of the SNI project, TransGrid considers that a cost of less than $10M would be incurred for connecting SNI at Monash with a single transformer;

(g) mention is made of "Augmentation of existing plant due to impact of new interconnection with increased fault levels". No details seem to be provided and these details are required to provide further comment, and

(h) no communications development costs appear to be included.

The cost of Alternative 1 is quoted at $246M compared to an overhead line development that would be of the order of $40-50M. Hence the cost of undergrounding, power flow control and voltage control add significantly to the cost. This increased cost is a direct result of MTC's decision to only select alternative projects that are technically the same as Murraylink. However, as discussed above, this approach is based on a standard of service significantly in excess of that provided for under the Code for a regulated interconnector. Given this, as set out in that section, if this approach is adopted then substantial *"gold-plating"* would be entrenched in Murraylink's asset base.

2. Alternative Project 2 - Red Cliffs – Monash HVDC Line



This alternative is an overhead HVDC line from Red Cliffs to Monash with a 25 km underground section. Hence it is similar to Murraylink except that some overhead line is developed. The new line is constructed at 140 kV DC which TransGrid understands is similar to the design voltage of the Murraylink cables (150 kV). In the plant costs in Appendix 5, the system is described as 150 kV. Hence it is likely that the HVDC converters would be similar to the Murraylink converters.

Power Transfer Capability

This should be identical to Murraylink.

Plant and Costs

A cost breakdown into categories of approvals, development costs, line costs and switchyard costs is given in Appendix 5 to MTC's Application. The cost of individual plant items is difficult to derive from the table in section 3.1. of Appendix 5.

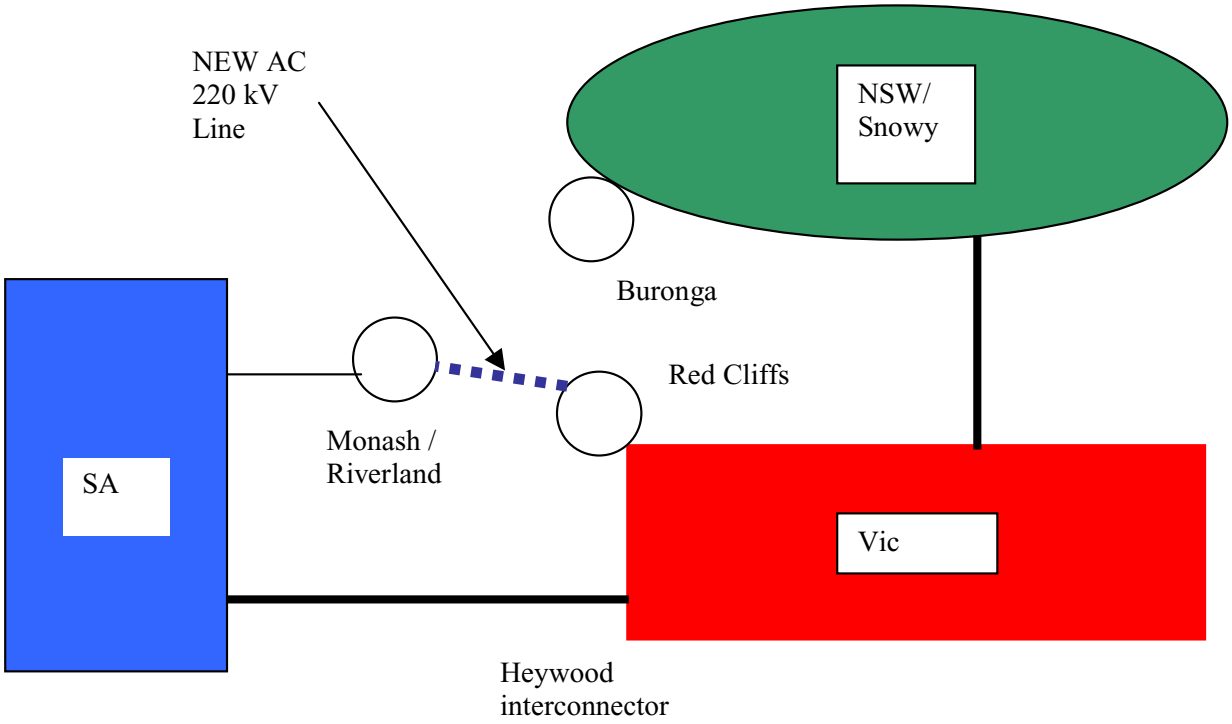
TransGrid's comments about the cost information for this project is as follows:

Spare converter transformers are included for each end of the link. It is not known whether such spares were purchased for Murraylink. In TransGrid's view only one dual voltage spare converter transformer is needed for Murraylink on the basis that it has three single-phase converter transformers at either end.

The cost breakdown of Appendix 5 of MTC's Application indicates that the Red Cliffs - Monash line and cable section would cost in the order of $53 million.

The HVDC overhead line should cost of the order of $150k per km, with a total of the order of $23M based on 180 km route length that includes a 25 km underground section. Hence the 25 km of underground cable is costed at the order of $30M. TEA has often stated that undergrounding costs less than an overhead line. The cabling appears to cost of the order of $1.2M per km. Even if the line cost $200k per km or $31M this leaves 25 km of cable costing $22M or $0.9M per km. As a result, it is difficult to understand the costs of this option.

3. Alternative Project 3 - Red Cliffs – Monash AC 220 kV Line



This alternative is similar to Alternative 1 but only allowing for 220 kV operation over its life. The line is 30 km shorter than Alternative 1.

Power Transfer Capability

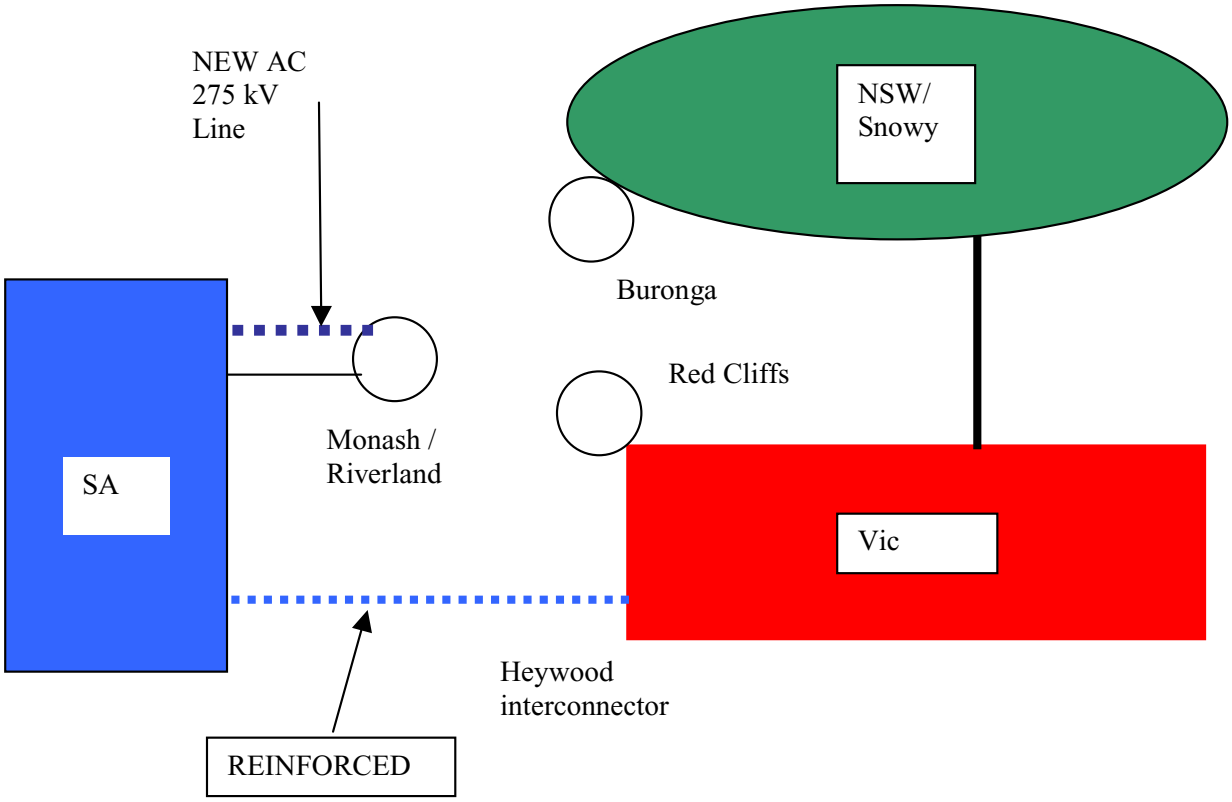
TransGrid notes that very limited details of power flow studies have been provided for this alternative and as a result there is no evidence supporting the need for all the plant associated with the alternative. Further analysis on the design is required to be certain of its capability.

It appears that BRW has not taken into account the fact that operation of this new line with power flow of the order of 200 MW would significantly stress the NSW 220 kV system.

Plant and Costs

The comments set out above in relation to Alternative 1 also apply in respect of this alternative. If a 220kV overhead line costs $200K per km, the line would amount to about $34M whereas MTC quote a combined line and cable cost of about $75M.

4. Alternative Project 4 - Robertstown – Monash Reinforcement and Reinforcement of Heywood Interconnection



Alternative 4 includes:

(a) An overhead 275 kV line from Robertstown to Monash to support the Riverland area;

(b) Reinforcement of the Heywood interconnector, comprising:

(i) series capacitors;

(ii) an additional transformer at Heywood; and

(iii) a new 275kV line from Heywood to South East substation.

The Riverland reinforcement includes an SVC that has not been identified by ESIPC or ElectraNet as being required. BRW appears to have included it to provide the same voltage performance as Murraylink provides. This would appear to be unnecessary.

The Heywood reinforcement is similar to the Heywood B option developed by the IOWG. It does however include power flow control the purpose of which is unclear (see below). The IOWG found a cost of approximately $76M and a capability of 240 MW for Heywood B.

Power Transfer Capability

The IOWG reviewed the capability of a similar (Heywood B) system. The capability is expected to be about 240 MW.

Plant and Costs

A cost breakdown into categories of approvals, development costs, line costs and switchyard costs is given in Appendix 5 to the MTC's Application. The cost of individual plant items is difficult to derive from the table in section 3.1 of Appendix 5. TransGrid notes the following differences between the costs provided by BRW and those estimated by the IOWG:

(a) BRW give the cost of the 275 kV from Heywood to South East Line as $38M. The IOWG estimated $150k per km over 80km, that is at $12M. TransGrid considers the BRW cost very high.

(b) BRW estimate $6.4M for the series capacitors, while the IOWG estimated $24M for these works although it is possible that BRW has included part of the series capacitor cost in the switchgear cost.

(c) BRW estimate the cost of switchgear at $22M. The IOWG estimated the switchgear costs would be in the order of $12M.

(d) BRW estimate the cost of the transformer as $10.6M and the IOWG estimate for this is $9M.

In addition, BRW estimates the cost of the phase shift transformer at a cost of $19M. The connecting switchgear cost is probably in addition to this. Their reason is “to ensure a full 220 MW transfer is available across the new Heywood to Robertstown 275 kV line, even when the existing 275 KV double circuit between Heywood and South east Substation is constrained (as occurs during times of lightning activity in south-east South Australia).”

However, at present when lightning activity is in the vicinity of the interconnector the link is downgraded to 250 MW to cover the risk of outage of the double circuit line as a single contingency. This 250 MW rating roughly matches the size of the largest generator in SA and hence the system is then secure allowing for the loss of the largest input to the SA system.

With a new third line in place the interconnector could then be rated at a higher secure level during storms. This may be above 500 MW depending on the rating of the new plant. As a result, the phase shift transformer is probably redundant – there is no need to provide power flow control given adequate rating on the other plant. The Heywood transformer is rated at 600 MVA and the line rating should not present any difficulty.

Monash Works

The Monash works include a new 275/132 kV transformer and an SVC. The cost of transformers is given as $10.6M. It appears that this would cover two transformers. The system would be secure for loss of a transformer hence the reason for a spare is not clear.

An SVC is included at Monash at a cost of $19M. In the ElectraNet and ESIPC work on the Riverland reinforcement there was no need for an SVC in addition to the 275 kV line. Presumably BRW seeks to provide the same level of voltage control as provided by Murraylink.

The 132kV connection cost at Monash is $10M. TransGrid considers this is more likely to be of the order of $2M. A detailed engineering review is required to estimate the cost of the work.