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Dear Sebastian

Murraylink Transmission Company - Application for Conversion

TransGrid recently commissioned NERA economic consultants to provide it with preliminary advice analysing Murraylink Transmission Company's ("**MTC**") application for conversion to a regulated interconnector under clause 2.5.2(c) of the National Electricity Code.

In addition to analysing MTC's application of the regulatory test to Murraylink and the general approach MTC has adopted to calculating the regulatory asset value of the Murraylink interconnector, NERA's report also explores alternative approaches to calculating the regulatory asset value of existing market network services. While NERA's report is preliminary in nature, and its analysis of MTC's application of the regulatory test to the Murraylink interconnector is necessarily limited by the quality of information in MTC's application for conversion to the Commission, TransGrid thinks that NERA's report could be of use to the Commission in its analysis of MTC's application. A copy of NERA's report is enclosed for your information.

Please contact us if you have further questions.

Yours faithfully

D W HUTT
GENERAL MANAGER/CORPORATE DEVELOPMENT

COMMENTS ON MURRAYLINK'S APPLICATION FOR CONVERSION TO REGULATED STATUS

A Report for TransGrid

Prepared by NERA

January 2003
Sydney

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An MMC Company

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EXECUTIVE SUMMARY

Murraylink has applied to the Australian Competition and Consumer Commission (ACCC) for conversion to a prescribed service and has proposed a maximum allowable revenue for 2003-2012 ('the Application').

TransGrid has asked NERA to review and comment on Murraylink's Application, particularly as it relates to the use of the regulatory test to derive a Regulatory Asset Value (RAV) for Murraylink.

Murraylink's Approach to Deriving the RAV is Inconsistent with the Regulatory Test

Murraylink's Application states that the approach it has proposed to estimating the RAV for its conversion to regulated status ensures that Murraylink would 'pass' the regulatory test.[1]

Section 2.1 of this report demonstrates that this claim is incorrect. For 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 only considers the cost of alternative projects.

In order to ensure that a RAV is chosen for Murraylink such that it satisfies the regulatory test, Murraylink's proposed approach would need to be amended to incorporate a comparison of the net market benefit provided by alternative projects. To the extent that alternative projects have a positive net market benefit, this reduces the RAV derived for Murraylink.

The Analysis Should Consider Alternative Market Development Scenarios

In applying the regulatory test to derive the RAV, Murraylink has failed to consider alternative market development scenarios. Different market development scenarios will result in different RAVs for Murraylink.

Many of the benefits associated with a given project will depend on the impact of the project on the wider development of the NEM. There is inherent uncertainty in relation to how the NEM will develop. The regulatory test therefore requires that costs and benefits be assessed against several different market development scenarios.

Murraylink's RAV should be calculated assuming different scenarios for future transmission investment and future generation investment The different resulting RAVs should then be

[1] Murraylink Application, p.v.

weighted together on the basis of the relative likelihood of each of the different market development scenarios, in order to arrive at a single RAV for Murraylink which takes into account the future uncertainty about how the market will develop.

Alternative Approaches to Deriving the RAV

The approach to establishing the RAV proposed by Murraylink 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?***

An alternative approach, discussed in section 2.3 of this report, would be to apply the regulatory test to the project specified as 'the change in status of Murraylink from a market network service provider (MNSP) to a regulated interconnector.' 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 ***maximum*** regulated cost that should be set for Murraylink would then be the lowest of the capex cost plus lifecycle opex costs for Murraylink; or 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.

This alternative approach to establishing the RAV for Murraylink has the appeal of being based on an forward looking assessment of the ***actual*** benefit to the market now, from a change in Murraylink's status given what has already been built, rather than a ***hypothetical*** assessment of what alternative could have been built instead of Murraylink.

TEUS' Application of the Regulatory Test

The calculation by TransEnergie US (TEUS) of the gross market benefits associated with Murraylink has a number of shortcomings. Since the gross market benefit of Murraylink has been used to derive the proposed RAV for Murraylink, these shortcomings directly impact the proposed RAV.

The shortcomings are discussed in section 3 of this report, and can be summarised as:

- the analysis does not consider alternative market development scenarios, which can be expected to have a material impact on the market benefit calculated for Murraylink (including, but not limited to, the extent of the Riverland deferral benefit);
- the approach TEUS has taken to calculating the reliability benefit for Murraylink differs significantly from the approach adopted by the IRPC;

- the 9.25 per cent commercial discount rate used by TEUS is significantly below the 11 per cent central estimate used in other recent applications of the regulatory test, which is likely to increase the RAV derived for Murraylink;
- The calculation of Murraylink's gross market benefit assumes that additional investments totalling $8.97m are in place. However, Murraylink has not committed to funding this investment, and this cost has not been incorporated into the regulatory test analysis; and
- TEUS has adopted a very tight definition of the service provided by Murraylink, which reduces the range of alternatives projects considered. The definition rules out consideration of generation and demand management alternatives, which is inconsistent with the Code provisions.[2]

Other Aspects of the Application

There are a number of differences between the parameters underlying Murraylink's proposed WACC and those adopted in recent ACCC decisions. These are set out in section 4 of the report.

The proposed ten year regulatory period for Murraylink is consistent with the expectation that the magnitude of any efficiency gains achieved over the period can be expected to be low, given that future expenditure is limited to operating expenditure rather than capital expenditure. However, the longer the regulatory period, the more important it is to specify the situations in which cost pass-throughs will be permitted, and to provide for the ACCC to initiate such pass-throughs, as well as Murraylink.

[2] National Electricity Code, clause 5.6.6(b)(1)(iii)).

1. INTRODUCTION

Murraylink has applied to the Australian Competition and Consumer Commission (ACCC) for conversion to a prescribed service and has proposed a maximum allowable revenue for 2003-2012 ('the Application').

TransGrid has asked NERA to review and comment on Murraylink's Application, particularly as it relates to the use of the regulatory test to derive a Regulatory Asset Value for Murraylink.

We note that the ACCC has discretion in deciding how to treat an application for conversion by a market network service provider to regulated status. The ACCC determination on Murraylink's application will be the first under the 'safe harbour' provisions under clause 2.5.2(c) of the National Electricity Code. The ACCC has indicated that it intends to apply the regulatory test in assessing such applications, and NERA has prepared this report on that basis. However, there are several ways in which the regulatory test could be used as part of the conversion assessment. NERA notes that there may be other policy considerations which are impacted by the approach taken by the ACCC to assessing conversion applications. We have not examined these considerations as part of this report.

This report focuses on the following areas:

- the appropriateness of the approach proposed by Murraylink in the Application to estimating its Regulatory Asset Value (RAV);
- specific comments on Murraylink's application of the regulatory test, namely:
  - the absence of alternative market development scenarios;
  - the approach taken to valuing the benefit of deferring reliability generation;
  - the Riverland deferral benefit;
  - the discount rate adopted for the analysis;
  - the cost of the future network investment to enhance Murraylink's capability;
  - the choice of alternative projects; and
- other aspects of Murraylink's Application:
  - Murraylink's proposed WACC;
  - the length of the proposed regulatory period.

2. MURRAYLINK'S APPROACH TO ESTIMATING THE REGULATORY ASSET VALUE

Murraylink has proposed the following approach to deriving a Regulatory Asset Value for Murraylink, for its conversion to regulated status:

1. Define the service which Murraylink provides.
2. Calculate the gross market benefit provided by Murraylink.
3. Identify alternative projects which provide the same service and estimate the cost of these alternatives.
4. Set the maximum regulated cost for Murraylink (RAV plus lifecycle opex) as the ***minimum*** of:

   - the gross market benefit of Murraylink;
   - the cost of an alternative project; or
   - the cost of Murraylink.

Murraylink states that the above approach will ensure that the RAV set for Murraylink will ensure that Murraylink provides a positive net market benefit which is greater than or equal to any of the net market benefits provided by any of the alternatives.[3] As a result, at this RAV Murraylink would 'pass' the regulatory test.

2.1. The Proposed Approach is Inconsistent with the Regulatory Test

2.1.1. Benefits of alternatives should be considered, not only costs

The approach proposed by Murraylink is not consistent with Murraylink's own stated intention. The RAV derived as part of the conversion process does not ensure that Murraylink passes the regulatory test – since it 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 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

[3] Murraylink Application p. v.

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.[4]

Table 2.1 below illustrates the point:

Table 2.1: Proposed Approach to RAV Does Not Ensure that Murraylink Passes the Regulatory Test

	Gross Benefit	Cost		Net Benefit
		Opex	RAV (derived)	
Murraylink	$214.240m	$37.334m	$176.906m	0
Alternative 3	$250.4m	$240.4m		$10m

Note: Amounts shaded are shown for illustrative purposes. All other figures are taken from Murraylink's Application.

Under the approach proposed by Murraylink, the RAV is set on the basis of the gross market benefit of Murraylink (since this is below both the cost of the alternative project and the actual cost of Murraylink). However, this results in the net market benefit from Murraylink being equal to zero. To the extent that Alternative 3 has a gross market benefit which exceeds its total cost of $240.4m, then the net market benefit associated with Alternative 3 would be greater than zero.[5] As a result, Alternative 3 would pass the regulatory test rather than Murraylink.

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

1. Define the service which Murraylink provides.
2. Calculate the gross market benefit provided by Murraylink.
3. Identify alternative projects which provide the same service and estimate the cost of these alternatives ***and the gross market benefit of these alternatives.***
4. 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 RAV should be set equal to the capital cost of Murraylink.

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[4] 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.

[5] If Alternative 3 did not have a gross market benefit which exceeded its costs (ie, it has a ***negative*** net market benefit), then it would not pass the regulatory test, since the option of doing nothing (which has a zero net market benefit) would be preferable. The option that would pass the regulatory test would then be the 'do nothing' option, which has a net market benefit of zero.

5. If the net market benefit of Murraylink is less than the net market benefit of alternative projects, then set the regulated cost for Murraylink (RAV plus lifecycle opex) as:

   - the gross market benefit of Murraylink ***minus the highest positive net market benefit associated with an alternative project.***

Table 2.2 illustrates the impact of this proposed approach on the RAV calculated for Murraylink.

Table 2.2: Revised Approach to Deriving the RAV

	Gross Benefit	Cost		Net Benefit
		Opex	RAV (derived)	
Murraylink	$214.240m	$37.334m	$166.906m	$10m
Alternative 3	$250.4m	$240.4m		$10m

Note: Amounts shaded are shown for illustrative purposes. All other figures are taken from Murraylink's Application.

We assume that the net market benefit of Murraylink is lower than the net market benefit of alternative projects (if this were not the case, then Murraylink would pass the regulatory test at its full capital cost).[6] The RAV for Murraylink should then be derived from its gross market benefit ($214.240m) minus its lifecycle opex costs ($37.334m) ***minus the net benefit associated with Alternative 3 ($10m)***. The resulting derived RAV is therefore $166.9m. This is lower than the RAV derived in Table 2.1 using Murraylink's approach, to the extent of the greatest net benefit associated with an alternative project (ie, $10m).

This revised approach results in a net market benefit for Murraylink of $10m. Murraylink would therefore pass the regulatory test, if its RAV was set at this level.[7]

The fact that it is the net market benefit associated with alternative projects and not the cost of alternative projects which is relevant for determining Murraylink's RAV is further illustrated in Table 2.3. Alternative 1 has a higher cost than Alternative 3. However, if it is assumed that it also has higher gross market benefits, and that overall the net market benefit associated with Alternative 1 is greater than Alternative 3, then, in order for Murraylink to

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[6] Note that if the cost of Murraylink is below the RAV as derived under step 5, then this implies that the net benefit of Murraylink is greater than the net benefit of alternative projects (ie, Murraylink passes the regulatory test at its full actual capital cost).

[7] Note that the approach set out above will ensure that the RAV derived is the value at which Murraylink always passes the regulatory test. In the event that the gross benefit of Murraylink was below the net benefit of the option with the highest NPV plus the lifecycle opex costs of Murraylink, the implied RAV would be negative. In this case, even at a zero asset value, Murraylink would fail to pass the regulatory test.

pass the regulatory test, its RAV would need to be set so that Murraylink also provided the same level of net market benefit as Alternative 1. In this example, Alternative 3 (although it is the lowest cost alternative) is no longer the appropriate comparator for determining Murraylink's RAV.

Table 2.3: Relevance of Net Market Benefit Rather than Cost of Alternatives

	Gross Benefit	Cost		Net Benefit
		Opex	RAV	
Murraylink	$214.240m	$37.334m	$156.906m	$20m
Alternative 1	$305.8m	$285.8m		$20m
Alternative 3	$250.4m	$240.4m		$10m

Note: Amounts shaded are shown for illustrative purposes. All other figures are taken from Murraylink's Application.

2.1.2. RAV derived will differ depending on the market development scenario

In applying the regulatory test to derive the RAV, Murraylink has failed to consider alternative market development scenarios. We discuss this further below (section 3.1.1). However, a general point which this shortcoming gives rise to is that Murraylink's approach 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.

The regulatory test is an assessment of the relevant rankings of different projects under different market development scenarios. This is clear from note (a) to the regulatory test, which talks about the 'equivalent ranking of options' across 'most credible scenarios'. In order to pass the regulatory test, a project must maximise the net market benefit over the majority but not all of the different scenarios considered.

Murraylink is using the regulatory test in order to 'back-out' a RAV. However, the net benefit associated with a project will differ, depending on the background market development scenario assumed. As a result, there will not be a single RAV which emerges from 'back-solving' the regulatory test. Rather, the RAV will depend on the market development scenario underlying the regulatory test.

The role of market development scenarios is to capture the uncertainty which necessarily exists about the future development of the electricity market, and to ensure that the project which 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.[8] As a result, the costs associated with alternative projects have been inflated to include 'contingencies'.[9]

Similar uncertainty exists in calculating the RAV under the approach proposed by Murraylink, since different RAVs would be implied under different market development scenarios. In order to take account of this uncertainty, the modelling should consider different market development scenarios, and a RAV for Murraylink should be derived under each of those scenarios. The different market development scenarios considered should be all those which have a material probability of occurring. The different RAVs 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 RAV for Murraylink which reflects future uncertainty about how the market will develop.

We note that this approach to weighting the outcome of the regulatory test assessment under different market development scenarios is similar in concept to the approach which the Inter-regional Planning Committee (IRPC) considered in its assessment of the proposed interconnector (SNI) between South Australia and New South Wales.[10]

In our view, Murraylink's approach of only considering a single market development scenario in deriving the RAV is inadequate and does not represent a proper application of the regulatory test.

2.1.3. Costs not relating to prescribed services should be excluded from the RAV

The notes to the regulatory test require consideration of whether the proposed augmentation will enable the network service provider to provide both prescribed services and other services.[11] To the extent that this is the case, the costs and benefits associated with the other services should be disregarded in the regulatory test assessment.

In relation to the derivation of the RAV for Murraylink, the ACCC therefore needs to determine whether any of the services which Murraylink provides are non-prescribed services. The benefits of any non-prescribed services would need to be excluded from the regulatory test assessment. In addition, the cost of that portion of the investment associated with the non-prescribed service would need to be ***deducted*** from the 'regulated cost' amount derived for Murraylink, in order to arrive at the RAV in relation to the prescribed service.

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[8] Murraylink's Application, section 4.4.4.

[9] Murraylink's Application, Appendix F: ***Report – Selection and Assessment of Alternative Projects – Burns and Roe Worley***, p.22.

[10] IRPC Stage 1 Report, Proposed SNI Interconnector, August 2001, p.39.

[11] Note (2) on the regulatory test.

The ACCC will also need to consider whether the prescribed services provided by Murraylink are in line with the Code requirements for prescribed services. To the extent that Murraylink provides services which ***exceed*** the current Code requirements, but do not result in any additional benefit to the market, then the regulatory test assessment should consider an alternative project which only meets (rather than exceeds) the current Code requirements. To establish a RAV for Murraylink on the basis of a higher than required level of service (where this does not provide additional benefits to the market) would be a form of 'gold-plating'. The appropriate selection of alternative projects to Murraylink is considered further in section 3.2 of this report.

2.2. Cost Benefit vs Cost Effectiveness Analysis

By concentrating on the cost of alternative projects, rather than the net benefits of alternatives, Murraylink is effectively proposing an approach which is more akin to a cost effectiveness analysis, rather than a cost benefit analysis. Under a cost effectiveness analysis, the focus is on minimising the cost of meeting a given objective, rather than maximising the net benefit. A project can pass a cost effectiveness analysis, even if the cost of the alternative exceeds the benefits (ie, there is a negative net market benefit). Given that some previously specified objective has to be met under a cost effectiveness analysis, continuing with the status quo (ie, the 'do nothing option') is not an alternative.

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').[12] 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.[13] 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.

It should also be noted that, even if Murraylink was 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 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.

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[12] Regulatory test (a) and (b).

[13] Murraylink Application, p.iv.

As a result, Murraylink's proposed approach to deriving the RAV, which only focuses on the costs of alternatives, is inconsistent with the regulatory test.

2.3. Is Murraylink's Proposed Approach the Most Appropriate Way of Deriving its RAV?

We have highlighted above shortcomings in the methodology proposed by Murraylink for determining the RAV. However, the methodology proposed by Murraylink is potentially open to more fundamental questioning, in terms of whether a retrospective application of the regulatory test is the appropriate vehicle for determining the RAV for Murraylink.

New regulated interconnector assets must pass the regulatory test in order to be eligible for regulated status, as a first step to be included in the regulatory asset base. Murraylink's proposal is therefore consistent with the requirements it would face if it had not yet been constructed, and was applying ***ex ante*** for regulated status.

However, Murraylink is an ***existing*** interconnector asset. In relation to existing interconnector assets, at the time of their initial regulatory review by the ACCC, such assets would normally be included in the regulatory asset base (alongside the remainder of the network service provider's assets) on the basis of a depreciated optimised replacement cost (DORC) valuation. Such assets would be subject to optimisation, but there would be no retrospective application of the regulatory test. On the basis of past practice and statements of the ACCC, optimisation would consider such factors are the relative size of the asset versus its utilisation and the appropriateness of the technology used.[14] It is important to note that the Code provisions for new interconnectors to be eligible for regulated status and the provisions for the regulator to determine the regulatory asset base for network service providers (NSPs) are distinct.

We note that Murraylink's Application states that the ACCC has indicated that it will apply the regulatory test in making its determination on Murraylink's Application.[15] The ACCC has previously noted that a DORC valuation is consistent with the intent of the regulatory test.[16]

A further alternative to deriving a RAV for Murraylink could in theory be 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.

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[14] See for example ACCC, ***Draft Statement of Principles for the Regulation of Transmission Revenues***, 27 May 1999, pages 26-27 and page 52.

[15] Murraylink Application, p.4.

[16] ACCC, ***Network Pricing and MNSP Code Changes – Determination***, September 2001

The approach to establishing the RAV proposed by Murraylink 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?***

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.

An alternative approach would be to apply the regulatory test to the project specified as 'the change in status of Murraylink from a market network service provider (MNSP) to a regulated interconnector.' Under this approach, the background market development scenario would be one which contained Murraylink operating as an MNSP, ie, 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 (ie lifecycle opex plus RAV) that should be set for Murraylink would then be the lowest of:

1. the capex cost plus lifecycle opex costs for Murraylink; or
2. 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.

The first condition ensures that the regulated return which Murraylink receives from converting does not exceed its actual costs (ie, actual capex cost plus opex cost). This is the return which a regulated interconnector would expect to receive, if it passed the regulated test.[17]

[17] If the regulated cost was 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).

The second condition ensures that the amount paid to Murraylink does not exceed what market participants are currently willing to pay Murraylink (as an MNSP) plus the additional benefit to the market from the conversion in Murraylink's status. Provided that the regulated cost is set somewhere between the expected revenue to Murraylink of continuing to act as an MNSP and the maximum value established under condition 2, then both market participants and Murraylink would benefit from Murraylink's change in status.

This alternative approach to establishing the RAV for Murraylink has the appeal of being based on an forward looking assessment of the ***actual*** benefit to the market now, from a change in Murraylink's status given what has already been built, rather than a ***hypothetical*** assessment of what alternative could have been built instead of Murraylink. Murraylink's current revenue is a relevant measure of the amount that market participants are already willing to pay Murraylink.[18] The additional market benefit which can be derived from a change in Murraylink's status is in turn a relevant measure of the ***additional*** revenue which it would be appropriate to pay Murraylink, over and above its current revenue as an MNSP, for converting.

Although the approach above is conceptually different from that proposed by Murraylink, we note that the approach to the net market benefit analysis, and the majority of the associated modelling inputs and assumptions would be similar.

Determining the expected revenue for the MNSP would require modelling the future expected pool price differential between the regions at either end of the link. Although a complex task, it is not intrinsically different to the modelling which underpins the regulatory test assessment. The expected revenue should be established by considering how the market will develop if Murraylink continues to act as an MNSP – since 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.

The assessment of the market benefit of a change in the status of Murraylink would differ from an assessment of the market benefit with Murraylink and without Murraylink. For example, the TransEnergie US assessment includes a Riverland deferral benefit for Murraylink, to reflect the fact that the presence of Murraylink will delay the need for network reinforcement in the Riverland area. However, it is anticipated by some parties (including Murraylink) that ElectraNet SA will be able to sign a network support contract with Murraylink, in its current role as an MNSP, in order to defer this network

[18] We note that Murraylink's current revenue may potentially reflect the exercise of market power, or may be below the benefit that it currently provides to the market (through some of the benefits being non-excludable). However, current revenue remains the relevant measure of what market participants are currently willing to pay Murraylink.

augmentation.[19] There would therefore be no ***additional*** benefit to the market in relation to Riverland network deferral which arises from the change in Murraylink's status from an MNSP to a regulated interconnector. If the change in status of Murraylink were to be assessed under the regulatory test, there would therefore be a zero deferral benefit included for Riverland.[20] However, the expected income for Murraylink in relation to the network support contract would be a factor included in the assessment of Murraylink's current revenue.[21]

Under this alternative approach to determining the RAV, MNSPs would always have an incentive to convert to regulated status where the net benefit to the market of such a change in status was positive, given that their expected return from converting would be set above the return they expect as an MNSP. This is efficient from a static perspective, if the benefit from the MNSP operating as an open-access interconnector is expected to outweigh the additional cost. However, in the absence of clear, long-term guidance on the principles for assessing conversions of MNSPs to regulated status, there may be dynamic efficiency concerns in relation to the 'level-playing field' between MNSPs and regulated interconnectors. In terms of developing new interconnector assets, regulated interconnectors are required to comply with the regulatory process as a pre-condition to constructing the assets, whereas the application of the regulatory test to an incremental change in interconnector status would mean that the original investment decision was not subject to the same pre-condition.

2.4. Implications of Approach for Future Network Development

Under the 'safe harbour' provisions applying to MNSPs in the Code, an MNSP can apply to convert to regulated status at any time under clause 2.5.2(c). Murraylink's application for a change in status from an MNSP to a regulated interconnector is the first time that the conversion provisions in the Code have been invoked.

Currently, the regulatory test acts as a hurdle which regulated investments must pass in order to proceed. This fits with one of the key aims of the test, which is not to crowd out non-regulated alternatives.

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[19] 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.

[20] What would potentially change as a result of a change in Murraylink's status is the parties who bear the cost of the Riverland deferral benefit provided by Murraylink. With Murraylink acting as an MNSP, it would be paid for network support under a network support contract with ElectraNet, which would eventually be passed through to customers in South Australia. If Murraylink was regulated, no network support contract would be needed, and under Murraylink's proposal the cost of Murraylink will be met by customers in both Victoria and South Australia.

[21] Note that the amount paid to Murraylink under a network support contract would be capped at the cost of the next most cost effective option for meeting the reliability requirement in the Riverland area.

It is important that the methodology used to estimate the RAV does not provide an incentive for an NSP to build a market interconnector, in order to convert to regulated status at a later date.

Such an incentive would occur if the NSP expected that it could earn higher revenue as the result of converting after construction, rather than applying for regulated status prior to construction. Setting the actual cost of the market interconnector as a ceiling on the regulated cost derived will ensure that this is not the case.

An NSP would also have an incentive to adopt the conversion route as a means to bypass the regulatory test if it expected that an investment would not pass the regulatory test (or would only pass the regulatory test if construction was delayed), but that it could still recover its costs if it proceeded to construct the asset as an MNSP, and then converted to regulated status. This implies that the comparison against alternative projects under Murraylink's proposed approach to deriving the RAV should also encompass different timings for alternative projects (including Murraylink (see section 3.2.2)).

2.5. Future Re-optimisation of the RAV

The Code and the current ACCC draft Statement of Regulatory Principles (SORP) allow the ACCC to re-optimise the regulatory asset base established for a regulated NSP.[22]

It is not clear how re-optimisation would work in the context of Murraylink, since the initial RAV would not have been determined on the basis of the actual cost of the interconnector.

It is important that there is a level playing field between all classes of regulated assets when it comes to re-optimisation, so that all regulated assets bear a similar level of risk. It would not be appropriate for assets which pass an ***a priori*** application of the regulatory test to face an optimisation risk and for MNSPs that convert to regulated status not also to face this risk.

[22] We note that we view the ability to re-optimise a regulated business' asset base as detrimental to NSPs' incentives.

3. MURRAYLINK'S APPLICATION OF THE REGULATORY TEST

The previous section considered whether Murraylink's approach to estimating its RAV by reference to an ***ex post*** application of the regulatory test was a suitable approach.

This section considers the application of the regulatory test conducted by TransEnergie US (TEUS) to derive the gross market benefit calculated for Murraylink, and the appropriateness of the alternative projects considered by TEUS in its analysis.

3.1. Gross Market Benefits Calculated for Murraylink

The calculation by TEUS of the gross market benefits associated with Murraylink has a number of shortcomings. Since the gross market benefit of Murraylink has been used to derive the proposed RAV for Murraylink, these shortcomings directly impact the proposed RAV.

3.1.1. Market development scenarios

A major shortcoming with the approach taken by Murraylink in calculating its gross market benefit is that it does not consider alternative market development scenarios.

Many of the benefits associated with a given project will depend on the impact of the project on the wider development of the NEM. There is inherent uncertainty in relation to how the NEM will develop, and as a result the regulatory test requires that costs and benefits be assessed against several different market development scenarios. The alternative which passes the regulatory test is that which maximises the net market benefit over most (although not necessarily all) of these market development scenarios.

TEUS has not considered any alternative market development scenarios in its assessment of the market benefit associated with Murraylink. The CRA Report which 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'.[23]

TEUS should have calculated the benefit of Murraylink against alternative market development scenarios, which include:

i. future transmission investment; and

ii. future generation investment.

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[23] 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).

Murraylink has the potential to defer other transmission augmentations, as TEUS recognises in attributing a benefit to Murraylink from delaying network augmentation in the Riverland region.[24] Future transmission investment will also affect the future pattern of electricity prices, and therefore the pattern of generation investment. Murraylink's impact in deferring generation investment will therefore differ depending not only on what future generation investment is assumed, but also what future transmission investment is assumed (since the latter will affect the former).

Key transmission augmentations which can be expected to have a material impact on the assessment of Murraylink, and which should therefore be reflected in the market development scenarios, are SNI, Basslink and any expected upgrade of the Heywood Interconnector.

Market development scenarios should also capture potential future developments in generation investment. The benefit attributed to Murraylink from deferring generation will depend on the timing and extent of future expected generation. The regulatory test sets out specific requirements for how market development scenarios should be derived and, in particular, requires that generators are assumed to bid at SRMC and also on other generation bidding assumptions.

The TEUS assessment only assumed generator SRMC bidding. They correctly note that benefits assuming another bidding scenario will be greater.[25] However, this greater benefit would apply to all of the alternatives considered. Whether the ***net impact*** on the RAV calculated for Murraylink[26] would be to increase the RAV if non-SRMC bidding scenarios were considered is not certain. We would therefore recommend that the modelling anlaysis explicitly considers the impact on the RAV of non-SRMC bidding assumptions.

3.1.2. Reliability benefit

TEUS has calculated the benefit which Murraylink provides by improving the reliability of the transmission system.

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'.

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[24] This in turn indicates that Murraylink has adopted a market development scenario which has the Riverland augmentation contained within it.

[25] Since prices will be higher, resulting in new generation entering earlier and the deferral benefit associated with Murraylink increasing.

[26] As discussed in section 2.1.1, the benefits of alternative options need to be considered along with their costs in deriving a RAV for Murraylink at which Murraylink would pass the regulatory test.

Murraylink 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).

The approach adopted by Murraylink differs significantly from the approach which was adopted by the IRPC 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.

TEUS' argument in support of the approach it has adopted is that it captures both the size and duration of capacity shortfalls,[27] and enables the increased reliability that Murraylink provides to be directly measured, rather than using a shadow valuation technique such as 'installed capacity margins'.[28]

There is an important distinction between the valuation of reliability improvements which 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 which 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.[29] Although not included in the IRPC's final analysis (since the impact was

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

[28] Murraylink Application, p.19.

[29] See IRPC ***Stage 2 Report, Proposed SNI Interconnector***, October 2001, p.11.

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.[30]

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.[31]

A priori 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. We would therefore recommend that, at the very least, the materiality of the difference in the approach is established by also valuing the reliability benefit associated with Murraylink on the basis of the value of the deferral of reliability generation (ie, on a consistent basis to the previous IRPC analysis).

We also note 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 RAV derived is robust.

3.1.3. Riverland deferral benefit

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 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.

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[30] See IRPC ***Stage 1 Report, Proposed SNI Interconnector***, August 2001, p.31.

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

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.

3.1.4. Commercial discount rates

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).[32]

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. The effect of this is to increase the RAV 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.

The remainder of this section compares the commercial discount rate used by TEUS with recent regulatory test decisions, as well as reviewing the commercial discount rates recommended by DTT.

3.1.4.1. Discount rates used in other regulatory test assessments

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.

The IRPC received two comments by interested parties on the discount rate used in the SNI analysis, with one party indicating that it was too low while the other argued that it was too high.[33] The IRPC received only one comment (from a private-sector electricity generator) on

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[32] Appendix C of Murraylink's Application to the ACCC

[33] IRPC Stage 1 Report on the proposed SNI Interconnector, August 2001, p126.

the discount rate used in its SNOVIC 400 assessment, which supported the use of an 11 per cent commercial discount rate.[34]

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 RAV derived for Murraylink.

3.1.4.2. DTT's analysis of the commercial discount rate

DTT has calculated three commercial discount rates: a low, high and base discount rate.

1. ***Low rate*** – of 7.76 per cent is based on the proposed regulatory return on assets for Murraylink as set out in the report by Officer.[35]

   - DTT applies the WACC/CAPM parameters recommended by Officer to derive a real, pre-tax WACC (discount rate for Murraylink) of 7.76 per cent. DTT does not provide any rationale for why this regulated return is a good proxy for a low commercial discount rate.

2. ***High rate*** – of 10.4 per cent is based on the parameters reported by IES as consistent with the IRPC's calculation of its 11 per cent discount rate,[36] although DTT note that its calculation "assumes that the figures are in fact nominal, not real as indicated".[37]

   - It is not readily apparent that the figures reported by IES are nominal rather than real: DTT's assumption that they are real decreases the discount rate by around 2.2 per cent. In addition, the parameters reported by IES relate to the IRPC's ***base*** discount rate assumption, rather than its high discount rate assumption: DTT has not justified why it has used these parameters to derive its high discount rate.
   - DTT's calculation of the high discount rate does not include any compensation for tax, resulting in the 10.4 per cent derived being a post-tax rather than pre-tax discount rate.

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[34] IRPC Stage 1 Report, SNOVIC Project, October 2001, p61.

[35] Professor R Officer, Appendix G of Murraylink's application for regulated status, 18 October 2002.

[36] As reported in IES' Report on the Application of the Regulatory Test to SNI, 27 November 2000.

[37] DTT, Appendix C of Murraylink's Application for regulated status, p 4.

3. ***Base rate*** – of 9.25 per cent is based on the parameters in the Officer WACC paper[38] for the required rate of return for a regulated Murraylink, except for the equity beta which is based on the average of 5 equity betas for non-regulated energy business, sourced from the Officer paper.[39]

   - DTT has again used the WACC/CAPM variables applicable to a ***regulated*** monopoly business, such as the debt equity ratio and debt premium (based on a regulated return), to derive a ***commercial*** discount rate;
   - the equity beta is incorrectly calculated, since it does not take into account differing levels of debt financing by the surveyed companies. The five companies over which the average was calculated had equity betas varying from between 0.74 to 2.49. However, all these companies had differing ranges of debt financing so that debt accounted for between 12 and 98 per cent of capital financing. Given that the riskiness of equity increases the greater the extent to which capital is financed by debt, a simple average does not compare like with like. Instead, it is necessary to de-lever the equity beta to an asset beta and then re-lever using the assumed debt ratio; and
   - there is inconsistency in the return on equity presented in the base case. The high discount rate uses a return on capital of 18 per cent which DTT comment is a "high-end scenario" - however the base discount rate is based on an 18.28 per cent return on equity, which is ***greater*** than the high-end scenario.

In addition we note that all three discount rates are derived using a real return on capital that is calculated by a simple subtraction of the expected inflation from the nominal rate, rather than using the accepted Fisher transformation (although we do not believe that this has a material impact on the determination of the real pre-tax commercial discount rate).

3.1.5. Network investments to enhance Murraylink's capability

Murraylink's Application refers to a number of network augmentations which 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'.[40]

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.[41] However, the cost associated with these investments does not appear to have been explicitly

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38 Professor R Officer, Appendix G of Murraylink's application for regulated status, 18 October 2002.

39 DTT, Appendix C of Murraylink's application for regulated status, 18 October 2002, p5.

40 Murraylink Application, p.iv and p.18.

41 Murraylink Application, p.17.

incorporated into the analysis. It is unclear whether Murraylink's reference to 'initial development budget' is intended to be a reference to its initial RAV. We note that Murraylink's projected revenue requirement does not incorporate any future capital expenditure.[42]

It is inappropriate to ignore the amount of this future investment and to implicitly include it in Murraylink's RAV, 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 RAV 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 RAV. 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 RAV 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.

3.2. Alternative Projects

3.2.1. TEUS has adopted a tight definition in selecting alternative projects

In the context of Murraylink's Application, the cost associated with an alternative project potentially impacts on the RAV assigned to Murraylink.[43] The higher the cost of alternative projects, the greater will be the RAV derived for Murraylink. The ACCC will therefore need to be convinced that the alternative projects identified by Murraylink are appropriate.

TEUS' approach to selecting alternative projects is to define the services being provided by Murraylink very tightly. TEUS has defined the service provided by Murraylink to be not only the flow of power between Victoria and South Australia, but also the provision of a reactive power capability. In addition, there has been no consideration of alternative timings for Murraylink, or alternative sizing of Murraylink.

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[42] Murraylink Application, p. vii.

Defining alternative projects this tightly reduces the range of alternatives which can be considered. From an economic perspective, the term 'alternative' implies projects with attributes such that, were they to proceed, they would materially affect the net market benefit calculated for the other projects being considered. In general, these will be projects where the factors contributing to the net benefit are of a similar nature. Provided that there is this sufficient degree of substitutability, the sources of benefits need not be exactly the same.

We note that the argument that the benefits associated with alternative projects do not have to arise from identical sources is a point which has also been made by CRA[44] and by Professor Littlechild, acting as an expert witness for Murraylink in the National Electricity Tribunal hearing in relation to SNI. Professor Littlechild argued that:

> "[..] any project needs to be considered that might impact on that evaluation, regardless of whether it represents a "genuine alternative" or "substitute". For example, a project might provide only some of the benefits of the project being assessed and/or some additional benefits as well."[45]

If the bulk of the benefits associated with Murraylink arise from the increase in the transfer of power flows, then requiring all alternatives also to include reactive power components appears to be unnecessarily restrictive.

An indication that the approach adopted by Murraylink in identifying alternative projects is overly restrictive is its assertion that generation and demand side management (DSM) options cannot be alternative projects, since they do not provide the same reactive power benefits. The inherent assumption in the Code (as evidenced in clause 5.6.6(b)(1)(iii)) is that generation and DSM do have the potential to be alternatives for network investment. Previous applications of the regulatory test to interconnectors ***have*** included generation and DSM as alternatives to network augmentation. To the extent that a network alternative provides benefits to the market which are not provided by generation or DSM (such as reactive power capability) then the value of the benefit of such a service should be incorporated into the calculation of the gross benefits provided by that network option, rather than the capability being used effectively to screen out other options and/or to raise their cost. Provided that there is ***sufficient*** overlap of the benefits of different options for them to be considered alternatives, they do not have to provide exactly the same benefits or exactly the same services.

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

44 Murraylink Application, Appendix E: ***Report – Review of TEUS Market Benefits Report – Charles River Associates***, p.16

45 ***Witness statement of Stephen Charles Littlechild***, 23 May 2002, p.6 in the matter of an Application for Review of a NEMMCO determination on the SNI Interconnector in front of the National Electricity Tribunal. In his reply statement, Professor Littlechild goes on to give an example of an interconnector delivering low cost power from

In terms of the alternatives considered, TEUS has only considered projects which increase power flows between Victoria and South Australia. However, Murraylink also has the capability to increase power flows from NSW to South Australia, via Victoria.[46] To the extent that the benefits from Murraylink arise from increasing the dispatch of cheaper NSW generation, and allowing reserve sharing between NSW and South Australia (rather than NSW and Victoria, which have largely coincident peak demands) then alternative projects which increased power flows between NSW and South Australia would also be valid alternatives to include in the analysis.

We therefore recommend that the ACCC considers a wider range of alternative projects than those proposed by TEUS.

3.2.2. Alternatives should reflect different sizes and timing

We noted in section 2.3 that Murraylink's approach in applying the regulatory test ***ex post*** to derive a RAV is akin to the optimisation of an asset, which has been the approach adopted by the ACCC in order to establish the RAV for existing assets.

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. 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.[47]

In addition, the regulatory test effectively optimises over different project timings, and ensures that regulated NSPs do not invest too early. Murraylink's Application has considered the benefit of alternatives 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. 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 RAV derived.

NSW to Queensland as an interconnector transferring low cost power from NSW to South Australia - see ***Witness statement of Stephen Charles Littlechild in Reply, 10 August 2002, p.35.***

[46] Murraylink Application, p.18.

[47] Murraylink Application, p.5.

4. OTHER ASPECTS OF THE APPLICATION

This final section considers two other aspects of Murraylink's Application, namely the WACC proposed for Murraylink and the proposed length of the regulatory period.

4.1. Weighted Average Cost of Capital

The table below compares the CAPM parameters and the resulting WACC proposed by Murraylink with recent ACCC decisions on the WACC for regulated energy transmission businesses.

Table 4.1: Comparison of Murraylink Proposed WACC with Recent ACCC Decisions

Parameters	Murraylink 1 Oct 2002	ElectraNet SA 11 Dec 2002	GasNet 13 Nov 2002	SPI PowerNet 11 Dec 2002
Nominal Risk Free Rate (R_f)	5.4%	5.17%	5.31%	5.12%
Expected Inflation	2.2%	2.07%	2.16%	2.04%
Debt Margin	1.50%	1.22%	1.59%	1.20%
Cost of Debt	6.90%	6.39%	6.90%	6.32%
Market Risk Premium	6.00%	6.00%	6.00%	6.00%
Debt Funding (D/V)	60%	60%	60%	60%
Value of Imputation Credits (γ)	45%	50%	50%	50%
Asset Beta (β_a)	0.60	0.40	0.50	0.40
Equity Beta (β_e)	1.13	1.00	1.00	1.00
Debt Beta (β_d)	0.20	0	0.18	0
Nominal Post Tax Return on Equity	12.15%	11.17%	11.15%	11.09%
Post Tax Nominal WACC[48]	6.97%	6.07% (6.36%*)	6.57%**	6.31%**
Vanilla WACC[49]	9.00%	8.30%	8.60%	8.23%

* The ACCC uses 6.07%, however is based on effective tax rates for debt and equity. If statutory rates are used then the Post-tax nominal WACC is 6.36%.

** Calculated by NERA using statutory tax rates.

The major differences between Murraylink's proposed WACC and recent ACCC decisions are summarised below.

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[48] Post-Tax Nominal WACC = $R_e \times \frac{S}{V} \times \frac{(1-T)}{(1-T(1-g))} + R_d \times \frac{D}{V} \times (1-T)$

[49] Vanilla WACC = $R_e \times \frac{E}{V} + R_d \times \frac{D}{V}$

Risk Free Rate – Murraylink has used a 10-year bond rate rather than the ACCC's practice of using the yield on a 5-year Commonwealth bond (although note that other Australian regulators also use the ten year bond rate). On the 17 December 2002, the spread between the five and ten year bond rate was 0.34 per cent; if this is an indicative spread it would mean that the use of a five year bond rate would result in a reduced vanilla WACC for Murraylink of 8.64 per cent.

Expected Inflation – Murraylink has used the difference between a ten year bond and a ten year indexed bond, which differs from the ACCC's use of a five year horizon. Also, Officer does not use the Fisher Transformation, which is contrary to the practice of the ACCC and other Australian regulators (although this has no effect on the nominal vanilla WACC).

Imputation Credits – Murraylink has used a value of 45 per cent on imputation credits. The ACCC has consistently used 50 per cent, but has indicated that this is likely to be reviewed upward (rather than downward) due to the business tax reforms in June 2000. Although this has no material effect on the vanilla WACC, it will result in the post-tax nominal WACC decreasing to 6.90 per cent.

Effective Tax Rate / Carried Forward Tax Losses – Officer assumes that the effective tax rate is equal to the statutory tax rate of 30 per cent. Although this does not change the vanilla WACC it does mean that the post-tax nominal WACC calculated by Officer overstates the required WACC. If Murraylink writes down the value of its asset base as a consequence of gaining regulated status, as implied by its Application, then it is likely that there will be significant carried forward tax losses and lower on-going profits, so that the effective tax rate over the life of the asset would be less than 30 per cent.

Asset Beta – The value of 0.60 used by Officer is high in light of recent ACCC (and other Australian regulatory bodies) decisions. Officer uses listed Australian energy companies to derive the asset beta, which includes unregulated companies. Officer also uses a debt beta of 0.20 which is inconsistent with most ACCC decisions.

Debt Beta – The value of 0.20 used by Officer is high in light of most ACCC decisions. The debt beta is calculated by redefining the CAPM so that $\beta_d = (R_d - R_f) / MRP$. However, the use of observable yields as a proxy for expected returns on debt only holds if lenders have no expectation of default. Given the likelihood of default, expected returns (rather than observable returns) should be used in this transformation. In addition, the Market Risk Premium does not include any debt securities and is instead calculated purely on returns in the Australian equities market.

Equity Beta – The overall effect of both Murraylink's proposed asset and debt beta is that the equity beta is 1.13, which is higher than the 1.00 used by the ACCC in its recent decisions. The effect of decreasing the equity beta to 1.00 would be for the return on equity to fall to 11.40 per cent and for the vanilla WACC to fall to 8.70 per cent.

4.2. Regulatory Period

Murraylink 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. Murraylink has also incorporated a number of 'cost pass-through' triggers, to shield it from the risk of changes in external cost drivers over this longer regulatory period.

The rationale for the longer period is that Murraylink is already built, and will not be investing further capital over the period. There is therefore no scope for efficiencies in capital expenditure to be made over the regulatory period. Murraylink also argues that its operating costs are expected to be at world-class levels, leaving very limited scope for efficiencies to be achieved in opex over the regulatory period. 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 which might be passed through to customers as the result of such a review.

The CPI-X approach to regulation with periodic regulatory reviews is an approach under which businesses have an incentive to improve their efficiency during the regulatory period, since any reduction in their costs will not be reflected in a reduction in the prices which they can charge, and therefore will contribute directly to increased profits. At the time of the next regulatory review, some or all of the cost reductions achieved are passed through to customers in the form of lower prices going forward into the next regulatory period.

In determining the appropriate length of the regulatory period, there is therefore an inherent trade-off between providing sufficient time for the business to have an incentive to make efficiency gains, and ensuring that customers do not have to wait too long to benefit from those gains in the form of lower prices. Typically regulators have adopted a five year regulatory period. However, increasingly 'efficiency carryover mechanisms' are being incorporated into the regimes, which allow the businesses to retain the efficiency gains they make within a regulatory period into the next regulatory period – thereby enhancing the business' incentive to make gains, but delaying the time at which such gains are reflected in lower prices.

The major costs in monopoly infrastructure businesses are capital costs. As such, the value of efficiency gains will be greater in relation to capex than to opex, which forms a much smaller proportion of total costs. Murraylink is already built, and so there is no scope for future efficiency gains on the vast majority of its capital expenditure cost. There is ***limited*** potential for efficiency gains in relation to future capex, but Murraylink notes that such future capex is limited to $8.97m.[50] The scope for efficiency improvements arising under the CPI-X framework for Murraylink is therefore largely limited to opex which, by the nature of the business, is of a much lower order of magnitude.

[50] Murraylink Application, p. iv.

As a result, we agree with Murraylink's contention that the magnitude of any efficiencies achieved over the period can be expected to be low. This would be one argument in favour of a longer regulatory period, when weighed against the costs of conducting a review.

However, we note that the longer the regulatory period, the more important it is to specify the situations in which cost pass-throughs will be permitted, and to ensure that the pass-through provisions are symmetric. The ACCC should itself have the ability to trigger a cost pass-through, when external cost drivers ***fall***, since Murraylink would have no incentive to trigger a cost pass-through in that situation. Murraylink's current Application does not provide for the ACCC to trigger a pass-through.

In addition, a longer regulatory period would also provide the ACCC with no scope to re-optimise the value of Murraylink's asset base, if future circumstances change (see section 2.5).