



TransGrid Submission to
ACCC Review of the Regulatory Test
Draft Decision March 2004

7th May 2004

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1. Introduction

TransGrid welcomes the opportunity to make this submission to the Australian Competition and Consumer Commission (ACCC) on its Draft Decision of March 2004 concerning its review of the regulatory test.

As stated in its submissions on the May 2002 issues paper and the February 2003 discussion paper, TransGrid is a strong supporter of the fundamental principles embodied in the regulatory test. As a TNSP, the NSW Jurisdictional Planning Body and a member of the IRPC, TransGrid is committed to ensuring that the regulatory test promotes economic efficiency, and minimises the scope for inappropriate and counter-productive disputes.

TransGrid has reviewed the ACCC's draft decision and is of the view that in most areas the proposed regulatory test represents a reasonable outcome for the review process. In particular TransGrid would agree with the ACCC that the scope for widening the inclusion of competition benefits within the regulatory test (beyond that proposed by the ACCC in its draft decision) is a matter for the MCE or AEMC as appropriate rather than the ACCC.

Notwithstanding the solid basis provided in the draft decision, further consideration of the following matters is requested:

- The proposal to change the regulatory test for reliability augmentations to a "minimisation of cost" assessment may, in its proposed form, be open to misinterpretation in ways not intended by the ACCC;
- The requirement that, in evaluating a non-reliability augmentation, there is a need to consider an *alternative project*, that may not have a proponent, may delay delivery of the benefits of interconnection unnecessarily;
- The inclusion of the regulatory WACC formula as the basis for determining the discount rate applicable to computing the present value of benefits and costs could be simplified without undermining the integrity of the regulatory test process;
- Clarifying the definition of VCR would be very helpful in ensuring consistency and transparency in applying this aspect of the regulatory test; and
- Clarifying the difference between requirements of the regulatory test that are recommended and those that are mandatory would be helpful.

The remainder of this submission explains TransGrid's position on each of these matters and proposes changes to the proposed regulatory test for consideration by the ACCC.

2. Proposed "Minimisation of Cost" Assessment for Reliability Augmentations

TransGrid understands that the ACCC is proposing to amend the regulatory test for reliability augmentations such that the analysis is based on a "minimisation of cost" assessment.

In its draft decision the ACCC gives effect to this proposal in a number of ways:

- On p 39 of the draft decision the ACCC states:
"Therefore, the Commission proposes to retain the existing reliability limb of the regulatory test as a 'minimisation of cost' assessment."
- On p 40 of the draft decision the ACCC states
"The Commission however proposes to make a minor amendment by replacing the words 'net present value' with 'present value' to reduce confusion with respect to the requirements of the reliability limb of the regulatory test. That is, reliability augmentations should only consider the present value of costs. It does not include an assessment of market benefits."
- Section (2) of the proposed regulatory test makes a distinction between its application for reliability augmentations (Section 1(a)) and other augmentations (Section 1(b)). This section implies that Sections (5) and (6) are not to be applied for reliability augmentations, thus restricting the analysis of reliability augmentations to the consideration of "costs" only.

TransGrid submits that the ACCC should amend this proposal to improve clarity and minimise the risk of misapplication. The current proposal suffers from definitional problems, as set out in Appendix 1, that could result in misapplication to the detriment of non-network options (as illustrated by the example in Appendix 2). TransGrid therefore recommends that the ACCC retain the regulatory test in its current form (rather than as proposed in the Draft Determination) in relation to the definition of costs and benefits to be included in assessing options to address the reliability requirements of the transmission network. TransGrid proposes the following changes to the wording of the proposed regulatory test that are intended to minimise the changes, provide further clarifications in a number of areas and allow other new features in the proposed regulatory test to be retained.

Change Section 1 of the proposed regulatory test to read [words in bold added]:

(1) The Commission has determined that the *regulatory test* is as follows:

A *proposed augmentation* satisfies this test if –

- (a) in the event the *proposed augmentation* is a *reliability augmentation*, it minimises the **net** present value of the *costs*, compared with a number of *alternative projects*, in a majority of *reasonable scenarios* **and meets relevant minimum network performance requirements**; or
- (b) in all other cases, the *proposed augmentation* maximises the **net** present value of the *market benefit*, compared with a number of *alternative projects*, in a majority of *reasonable scenarios*.

Change Section (2) of the proposed regulatory test to read:

(2) In performing analysis under the *regulatory test*, the following Sections (3) – (15) must be applied. The level of detail in the analysis should take account of the size, significance and operational date of the *proposed augmentation*. The consideration of *market benefits* and *Cost* in Sections (5), (6) and (9) should also take account of the relevance and materiality of each *market benefit* or cost element to the *proposed augmentation*.

Add a new item at the end of Section (5):

- (g) Other benefits that are determined to be relevant and material to the case concerned.

Change Section (9) of the proposed regulatory test to read [words in bold added]:

(9) *Cost* means the total cost of the proposed augmentation (or an alternative project when used for comparisons) to all those who produce, distribute or consume electricity in the National Electricity Market. **Any requirements in notes 3 to 15, inclusive, on the methodology to be used to calculate the *market benefit* of a proposed augmentation should also read as a requirement on the methodology to be used to calculate the *Cost* of that proposed augmentation.**

In determining the *cost* of a *proposed augmentation*, the analysis may include, but need not be limited to, the following *costs*:

- (a) the capital costs incurred prior to commissioning;
- (b) operating and maintenance costs over the operating life of the project;
- (c) costs that arise from losses associated with power flow;
- (d) ancillary service costs;
- (e) the cost of disruption to the National Electricity Market for testing of augmentations or upgrades, **excluding wealth transfers associated with this cost**;

- (f) **other cost elements that are determined to be relevant and material to the case concerned.**

Insert the following paragraph in Section (5) after the paragraph ending with the phrase “... reasonable scenarios.”.

The *costs* identified in determining the *market benefit* should include the cost of complying with existing and anticipated laws, regulations and administrative determinations such as those dealing with health and safety, land management and environment pollution and the abatement of pollution. An environmental tax should be treated as part of a project’s cost. An environmental subsidy should be treated as part of a project’s benefits or as a negative cost.

3. Requiring a Project Proponent

TransGrid supports the ACCC’s inclusion of the requirement, for reliability augmentations, that *alternative projects* must have a clearly identifiable proponent. It also supports the ACCC’s inclusion of the requirement, for other augmentations, that in determining whether or not an alternative project is practicable, the existence of a proponent will be taken into account.

However, TransGrid believes that this second requirement needs further clarification to become workable, particularly under the circumstances where there is no proponent for a ‘prima facie’ ‘better alternative’ than an option for which there is a proponent.

As it stands ‘Commercial Feasibility’ is defined as “whether a market participant acting rationally in the National Electricity Market would have sufficient **economic incentive** to construct the *alternative project*” (emphasis added). This should read “sufficient **commercial** incentive ...” in order to make sense. It also requires an applicant to form quite difficult and potentially controversial judgements on the commercial position of different participants.

Until a more workable definition can be established it is recommended that the existence of a clearly identifiable proponent be necessary for an *alternative project* to be considered practicable.

TransGrid therefore recommends that Section (4) of the proposed regulatory test be amended as follows on interim basis:

Change Section (4)(c) of the proposed regulatory test to read [words in bold added]::

Other Augmentations

(c) The *alternative project* should be a genuine alternative to the project being assessed, meaning it should:

- (i). **have a clearly identifiable proponent**
- (ii). deliver similar outcomes to those delivered by the project being assessed; and
- (iii). become operational in a similar timeframe to the project being assessed.

In Section (4)(d)(ii)(a) change the phrase “economic incentive” to “commercial incentive”.

Delete the last paragraph in Section (4)(d).

4. Simplifying the Appropriate Discount Rate

TransGrid believes that use of the proposed WACC formula to determine the discount rate to be applied within the Regulatory Test is not appropriate for the following reasons:

- The regulatory Test is an economic rather than a commercial test. The WACC formula relates to the commercial cost of capital to a transmission business assuming a particular capital structure. After tax returns are also not relevant in an economic evaluation. A measure linked to the economy wide cost of capital may be more appropriate.
- The use of this formula implies a level of accuracy that is neither correct nor necessary for the effective operation of the regulatory test. Selection of a base case discount rate that is 'about right' is sufficient given that the test requires the use of sensitivity checks above and below the reference discount rate chosen.
- The use of detailed parameters similar to those used in assessing rates of return for revenue cap setting purposes risks inviting debates over the appropriateness of these parameters each time the regulatory test is applied.

TransGrid therefore recommends that Section (10) of the proposed regulatory test be amended to include a simpler basis for calculating the reference discount rate. Possibilities include using the ten year bond rate plus some margin, or alternatively the regulated rate of return applied to the most recent TNSP revenue cap decision.

5. Clarifying the Definition of VCR

While not disputing the conceptual proposals in relation to utilising the Value of Customer Reliability (VCR) in applying the regulatory test, care needs to be taken with the definition of this parameter. In particular, the definition should be included explicitly within the regulatory test. This definition could either be decoupled from definitions that may be used within one or other of the jurisdictions, or explicitly linked to the definition used within the relevant jurisdiction. Given that the reliability criteria for networks vary from jurisdiction to jurisdiction this latter option appears to have merit in order to preserve consistency with policy settings within a given jurisdiction.

6. Clarification of Mandatory and Recommended Requirements

In a number of places in the proposed regulatory test the ACCC refers to things that "should" be done or considered. TransGrid has obtained legal opinion as to whether the use of the word "should" in certain situations implies a mandatory, or a recommended requirement. This advice suggests that the word "should" may lead to a lack of clarity in this area. Therefore TransGrid recommends that the ACCC carefully review this aspect of the regulatory test and make it clear whether or not each requirement indicated by use of the word "should" is intended to be mandatory (by replacing "should" by "must") or recommended (by replacing "should" by "may").

For example, TransGrid believes the ACCC's intention in formulating Section (4) on alternative projects, is that the requirements in that section are intended to be mandatory. For the avoidance of doubt it is recommended that all seven instances of the word "should" in Section (4) be changed to "must".

Similarly it is recommended that the word "should" in Section (12)(d) be changed to "must".

7. Summary

While TransGrid is essentially supportive of the proposals contained in the draft determination, changes as follows are recommended:

- Retain the regulatory test in its current form (rather than as proposed in the Draft Determination) in relation to the definition of costs and benefits to be included in assessing options to address the reliability requirements of the transmission network.
- Until a more workable definition can be established it is recommended that the existence of a clearly identifiable proponent be necessary for an *alternative project* to be considered practicable, even in relation to non-reliability projects.
- Section (10) of the proposed regulatory test be amended to include a simpler basis for calculating the reference discount rate. Possibilities include using the ten year bond rate plus some margin, or the regulated rate of return applied to the most recent TNSP revenue cap decision.
- The definition of the Value of Customer Reliability (VCR) used in applying the regulatory test be explicitly linked to the definition used in the relevant jurisdiction where such definition exists.
- The ACCC review the wording of the proposed regulatory test with a view to ensuring that the mandatory and non-mandatory requirements of the regulatory test are clearly identified.

Appendix 1 – Problems with the “Minimisation of Cost” Assessment

Proposed Minimisation of Cost Assessment

The ACCC’s proposal for a minimisation of cost assessment for reliability augmentations makes use of lists of “effects” that should be considered in an application of the regulatory test. These effects are characterised as either “market benefits” (Section (5)), “competition benefits” (Section 6)) or “Costs” (Section (9)).

The ACCC’s minimisation of cost proposal requires that for reliability augmentations, Section (5) and Section (6) may not be applied. However it is required that the lists of effects in Sections (5) and (9) should be expanded to include other effects that may be relevant and material in a particular case.

Equivalence of Market Benefits and Costs

Despite this characterisation of effects into lists of “market benefits” (increases in the consumer and producer surplus) and “costs” (decreases in the consumer and producer surplus) TransGrid is of the view that the only difference between the lists is the most likely (but not necessarily the only) possible direction of the change (increase or decrease) in the consumer and producer surplus.

Furthermore, TransGrid’s believes that there is a fundamental equivalence of “market benefits” and “costs” that has been made clear in the regulatory test. In this regard the ACCC, on p 32 of its February 2003 discussion paper stated [emphasis added]:

The regulatory test defines costs as

the total cost of the augmentation to all those who produce, distribute or consumer electricity in the National Electricity Market. Any requirements in note 1 to 9, inclusive, on the methodology to be used to calculate the market benefits of a proposed augmentation should also read as a requirement on the methodology to be used to calculate the cost of an augmentation.

This equivalence of “market benefits” and “costs” is illustrated in the following simple example.

Consider the following application of the regulatory test to three options. For simplicity, only the contribution of two effects to the net present cost of each option is shown (and the values are in arbitrary monetary units). These effects could, for example, be the cost of electrical losses, the capital cost of market entry plant, or any other “market benefit” or “cost” listed in Sections (5), (6) and (9) of the proposed regulatory test.

Option	NPC of Effect 1	NPC of Effect 2
Option 1	20	60
Option 2	60	45
Option 3 (Business as usual)	70	20

Using Option 3 as a reference case gives, for Option 2 a “market benefit” of 10 for Effect 1 and a “cost” of 25 for Effect 2. If, instead, Option 3 is not used and Option 1 is used as the reference case then Option 2 has a “cost” of 40 for Effect 1 and a “market benefit” of 15 for Effect 2.

Hence whether Effects 1 and 2 result in a “cost” or “market benefit” for a particular option is dependent on the starting point, or reference case, which is often implicit in calculations.

Definitional Problems with the ACCC’s Proposal

In its discussion with TransGrid the ACCC was not specific as to how the list of costs in Section (9) ought to be applied in a practical application of the regulatory test. It is TransGrid’s conclusion that such an application is, in fact, difficult to achieve in a consistent and unambiguous manner.

To illustrate the difficulties, four possible “schemes” for the application of the regulatory test as a “minimisation of cost” assessment are considered below. These schemes are based on different interpretations as to the extent of “costs” that should be considered in applying Section (9):

1. The first scheme is based on a literal interpretation of the wording of the proposed regulatory test. In this scheme, it is assumed that in applying Section (9) all relevant and material “costs” must be considered and that they must be applied across the National Electricity Market.

In TransGrid’s view the problem with this scheme is that it leads to the conclusion that applying the regulatory test for reliability augmentations is effectively equivalent to the methodology to be applied to other (non-reliability) augmentations.

The previous section discussed the fundamental equivalence of “market benefits” and “costs”. A consequence of this equivalence is that the list of “costs” in Section (9) can (and should if relevant and material to a particular case) be expanded to include any of the “market benefits” in Sections (5) and (6).

For example, in applying the proposed regulatory test for reliability augmentations, it is mandatory to apply Section 11 (market development scenarios) and these must include various types of projects. Thus the list of costs in Section (9) must be expanded to include, for example, the capital costs of various types of projects that may arise in market development scenarios. When this is done and the various options compared then if the capital “costs” of projects for an option are less than the capital “costs” of projects for the reference case then a “market benefit” (difference in capital costs) may be said to arise, although only Section (9) has been applied. In other words the effect is exactly the same as if, for example, Section (5)(d)(ii) had been applied.

A similar argument can be made for effects that correspond to each of the “market benefits” in Section (5). Thus the exclusion on the application of Section (5) for reliability augmentations is effectively bypassed. Clearly this is not the intention of the ACCC’s proposal. Therefore, for the “minimisation of cost” assessment to be workable, some change to the wording of the proposed regulatory test would be required.

Schemes 2-4 below assume that the wording of the proposed regulatory test can be changed to accommodate them in a clear and unambiguous manner.

2. The second scheme uses the list of “market benefits” in Sections (5) & (6) and “costs” in Section (9) but does not allow for migration of effects between the “market benefits” and “cost” lists. It is difficult to see how the regulatory test can be worded to achieve the required restriction in a consistent and logical manner, or how the lists of “costs” and “market benefits” can be augmented on a case-by-case basis. Nevertheless, if it can be achieved it would achieve a form of “minimisation of cost” assessment. This scheme is used in the worked example in Appendix 2
3. The third scheme is similar to Scheme 1 and allows the list of “costs” to be expanded to include all relevant and material effects. However, there is a restriction that if a “benefit” (ie a negative cost difference or decrease in the consumer and producer surplus) were to result for a particular effect then it would be counted as zero.

A problem with this scheme is that whether a “benefit” is deemed to arise or not may be dependent on a number of (somewhat arbitrary) assumptions, including:

- How the reference case is determined, and
- How different effects may, in practice, be lumped together in calculations. For example, using one calculation method, electrical losses and unit fuel costs may

be estimated as separate effects. Using a different method the losses may be implicitly included in the fuel cost estimate.

Disputes could arise on the basis that different outcomes of the regulatory test could eventuate depending on the specifics of these assumptions and calculation methods.

For example, consider that Scheme 3 is applied to the example given in the previous section.

If Option 3 is used as the reference case then the following table results:

Option	NPC of Effect 1	NPC of Effect 2
Option 1	0	40
Option 2	0	25
Option 3 (Business as usual)	0	0

Note: The NPC of each effect for the reference case is subtracted from the values the table on p 4, so that the NPCs for the reference case are always zero. The NPCs for the other options are set to zero if they would otherwise be less than 0 (because “market benefits” for individual effects are not allowed).

Since Option 3 is a non-participating reference case then Option 2 has the minimum cost and passes the regulatory test (assuming, in this simple example, that the NPCs of all other effects are the same for all options).

If, on the other hand, Option 1 is used as the reference case then the following table results:

Option	NPC of Effect 1	NPC of Effect 2
Option 1	0	0
Option 2	40	0

Option 1 has the minimum cost and passes the regulatory test.

Thus, the outcome of the regulatory test is determined by the choice of reference case!

If, Option 1 is again used as the reference case but Effects 1 and 2 are lumped together (combined) as a single effect then the following table results:

Option	NPC of combined Effect
Option 1	0
Option 2	25

Option 1 still passes the regulatory test but the “Cost” of Option 2 has reduced significantly (from 40 to 25) because of the combining of effects. In more complex cases it is possible that combining effects may alter the ranking of options and thus the outcome of the regulatory test.

4. The fourth scheme envisages that only costs directly associated with the particular option should be considered in applying Section (9). For example, capital costs of the option are to be included but not capital costs of projects that arise in market development scenarios.

As in Schemes 2 and 3 this would require the wording of the proposed regulatory test to be changed to ensure that appropriate restrictions are in place. It would also require significant restrictions on the list of costs that could be included in Section (9). For example the proposed item (9)(e) would probably have to be excluded in this scheme.

An advantage of this scheme is that in practice it is similar to the simplified analysis that is often carried out for small augmentations.

However two problems are apparent with this scheme:

- It may tend to favour short-term minimum cost outcomes over medium to long-term strategic outcomes that are captured by the current regulatory test; and
- The treatment of electrical losses that may be necessitated by the restriction of costs to the options concerned is counter-intuitive.

Simple examples illustrating these two problems are as follows.

Short-term Focus Problem

Suppose there are two network constraints that are forecast in an area over a ten-year planning horizon. The first constraint is proposed to be relieved by one of two options:

1. A new 330 kV line costing, say, \$100M
2. A shorter 330 kV line to a different location costing \$90M and a new substation costing \$20M.

The second constraint, which is forecast to emerge a few years later, is likely to be relieved by a new substation. However the planner is unwilling to commit to the new substation at the present time because there are different options for its location (or possibly other equivalent options) and the planner would prefer to apply the regulatory test to those options at a later time. In addition Option 2 has similar network benefits to the new substation and so the second constraint does not emerge if Option 2 is built.

Applying the current regulatory test over a 10 year planning horizon (assuming the above costs to be present worth):

NPC of Option 1 = \$100M + \$20M = \$120M

NPC of Option 2 = \$ 90M + \$20M = \$110M

and Option 2 satisfies the regulatory test. The total investment over the ten year period is \$110M.

Applying a regulatory test modified as per Scheme 4:

NPC of Option 1 = \$100M

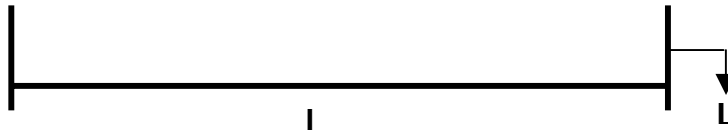
NPC of Option 2 = \$ 90M + \$20M = \$110M

and Option 1 satisfies the regulatory test. The total investment over the ten year period is \$120M.

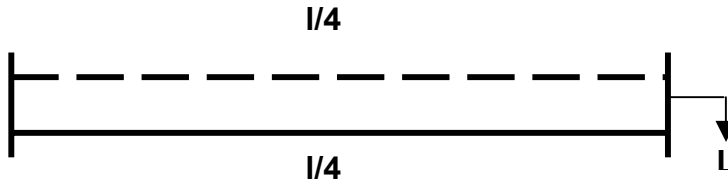
Arguably a rational planner would prefer to invest \$110M rather than \$120M over the ten year period for the same result (relieving the two forecast constraints).

Loss Calculation Problem

Assume a single line to a location supplying Load L with losses I as per the diagram below.



For reliability reasons it is required to construct a second line to the area as in the diagram below.



The total losses in the new system decreases from I to $I/4 + I/4 = I/2$ but only the losses in the new line ($I/4$) can be included in the regulatory test under Scheme 4. ie in the regulatory test the effect of losses of the line option counts as a “cost” of that option, not a “market benefit”.

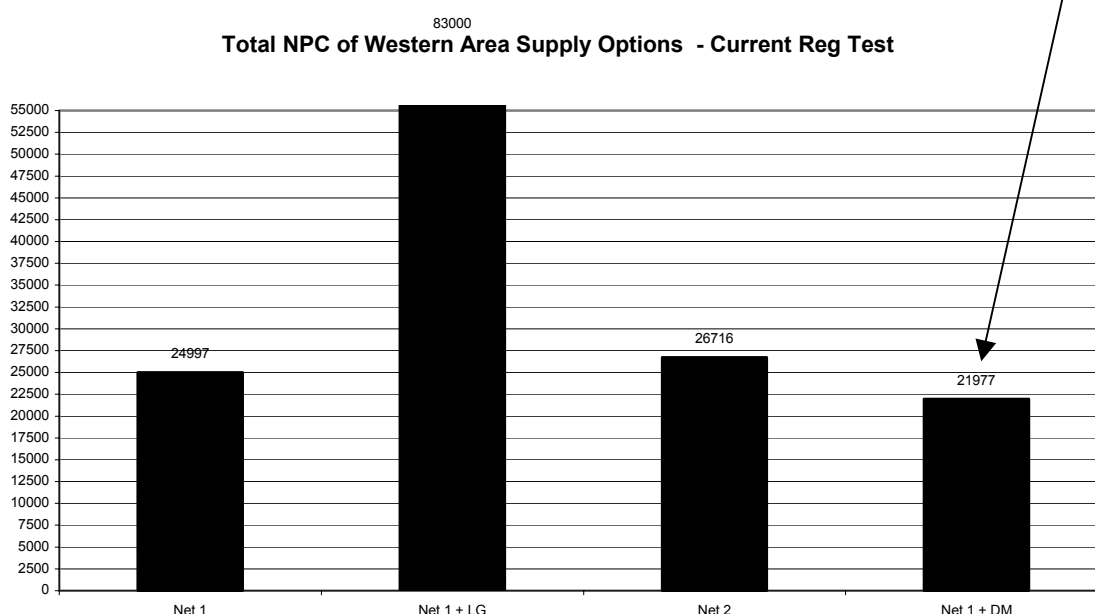
Appendix 2 – Minimisation of Cost Assessment - A Worked Example

The following worked example illustrates possible differences in the outcome of the regulatory test that may arise from a change from its current form to a “minimisation of cost” assessment. It is based on TransGrid’s recent application of the regulatory test to options for development of supply to the Western Area of NSW. Therefore the results should represent a realistic possible outcome. For clarity there have been some simplifications in presentation and only a single scenario for one set of input assumptions has been considered.

Four options are considered in applying the regulatory test: two network options, a combined network plus local generation option and a combined network plus demand management option.

The chart below displays one set of results from applying the current regulatory test to these options. The table below the chart provides details of the “cost” and “benefit” components.

For the current regulatory test the highest ranked option (lowest cost) is the network +DM option.

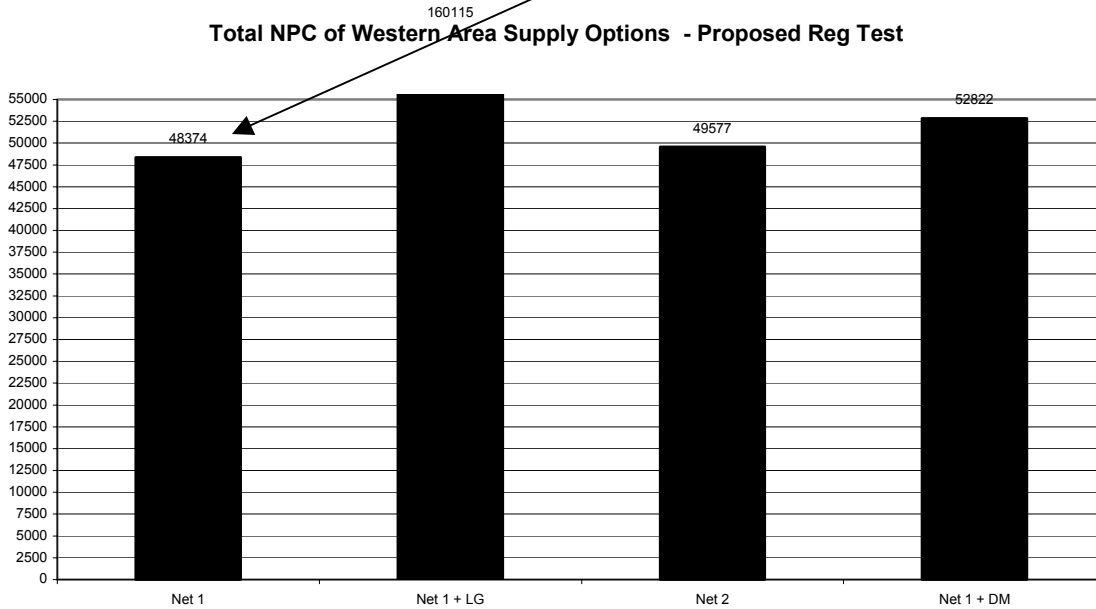


Discount rate	12%	Local PS O+M Cost (\$/MWh)	10.0	Reg Test Version Current	
Capex costs per cent of base	100%	Local PS Capacity Factor	0.50		
Equipment life - Local PS (Years)	20	Avoidable PS Capex Costs (\$000/MW)	0		
Equipment Life Other (Years)	45	Avoidable Fuel + O&M Costs (\$/MWh)	32.0		
Cost of Unserved Energy (\$/MWh)	10000	O+M % of Capex Costs	2.0%		
Value of CO2 benefit (\$/Tonne)	0.00	Avoided USE Terminal Growth Rate	5.6%		
Cost of Loss Energy (\$/MWh)	13.50	Avoided Losses Terminal Growth Rate	0.028		
Local PS Fuel Cost (\$/MWh)	35.0	Residual/Terminal Method	Term		
	Network 1	Network 1 + LG	Network 2		Network 1 + DM
Capex Costs - DSM Programme	0	0	0		4448
Capex Costs - Local Power Station	0	42375	0	0	
O+M Costs - Local Power Station	0	15415	0	0	
Fuel Costs - Local Power Station	0	53952	0	0	
Capex Costs - Transmission	41090	41090	42113	41090	
O+M Costs - Transmission	7284	7284	7464	7284	
Unserved Energy Benefit	-19448	-21282	-19052	-20122	
Series Loss Benefit	-3929	-6505	-3809	-5743	
Avoided Gen'n Capex Cost Benefit	0	0	0	0	
Displaced Fuel + O&M Cost Benefit	0	-49327	0	-4980	
CO2 Reduction Benefit	0	0	0	0	
Capex Residuals Benefit - Local PS	0	0	0	0	
Capex Residuals Cost - Avoided PS	0	0	0	0	
Capex Residuals Benefit - Transmission	0	0	0	0	
Total NPV	24997	83000	26716	21977	

The chart below, displays the corresponding set of results to those on the previous page with the regulatory test modified to a “minimisation of cost” test in accordance with Scheme 2 (Refer

Appendix 1 for a descriptions of this scheme). The table below the chart provides details of the “cost” and “benefit” components.

The highest ranked option is now the first network option.



Discount rate	12%	Local PS O+M Cost (\$/MWh)	10.0	<table border="1"> <tr> <td>Reg Test</td> </tr> <tr> <td>Version</td> </tr> <tr> <td>Proposed</td> </tr> </table>	Reg Test	Version	Proposed
Reg Test							
Version							
Proposed							
Capex costs per cent of base	100%	Local PS Capacity Factor	0.50				
Equipment life - Local PS (Years)	20	Avoidable PS Capex Costs (\$000/MW)	0				
Equipment Life Other (Years)	45	Avoidable Fuel + O&M Costs (\$/MWh)	32.0				
Cost of Unserved Energy (\$/MWh)	10000	O+M % of Capex Costs	2.0%				
Value of CO2 benefit (\$/Tonne)	0.00	Avoided USE Terminal Growth Rate	5.6%				
Cost of Loss Energy (\$/MWh)	13.50	Avoided Losses Terminal Growth Rate	0.028				
Local PS Fuel Cost (\$/MWh)	35.0	Residual/Terminal Method	Term				
	Network 1	Network 1 + LG	Network 2	Network 1 + DM			
Capex Costs - DSM Programme	0	0	0	4448			
Capex Costs - Local Power Station	0	42375	0	0			
O+M Costs - Local Power Station	0	15415	0	0			
Fuel Costs - Local Power Station	0	53952	0	0			
Capex Costs - Transmission	41090	41090	42113	41090			
O+M Costs - Transmission	7284	7284	7464	7284			
Unserved Energy Benefit	0	0	0	0			
Series Loss Benefit	0	0	0	0			
Avoided Gen'n Capex Cost Benefit	0	0	0	0			
Displaced Fuel + O&M Cost Benefit	0	0	0	0			
CO2 Reduction Benefit	0	0	0	0			
Capex Residuals Benefit - Local PS	0	0	0	0			
Capex Residuals Cost - Avoided PS	0	0	0	0			
Capex Residuals Benefit - Transmission	0	0	0	0			
Total NPV	48374	160115	49577	52822			

The net present cost (NPC) of all options has increased significantly because under the “minimisation of cost” assessment the “market benefit” components (white area in the tables) are zero. Comparison of the above table with the table on the previous page reveals why the NPC of the combined options has increased more than the NPC of the network only options.

In the network + LG option a significant benefit relating to displaced fuel costs in the NEM has been eliminated, resulting in a significant increase in the NPC for this option. Similar comments would apply to the benefits arising from avoided generation (deferral of plant entry) although in the scenario considered these are 0.

Note that if Scheme 3 had been applied instead of Scheme 2 the displaced fuel costs benefit may or may not be allowed up to the amount of the corresponding fuel costs for the power station option. This would depend on whether it is considered that the fuel costs of the option, and the fuel costs of other projects that arise in market development scenarios, are or are not separate effects. This problem of whether or not to lump cost and/or benefit effects together is discussed in Appendix 1 on p 5 and p 6.

Similar effects may be expected to occur for benefits arising from avoided generation. However for the scenario considered in this example the benefit for the current regulatory test is zero.

In the network + DM option a significant benefit relating to displaced fuel costs in the NEM has been eliminated, causing a significant increase in the NPC for this option. As a result, this option is no longer the highest ranked option. (In contrast to the case of the LG option there is no corresponding fuel cost component against which this benefit may be offset in Scheme 3.).

The series loss and unserved energy benefits are somewhat larger for the LG and DM options than for the network options. Elimination of these benefits also results in a larger increase in the NPC of the LG and DM options when compared with the network options.