COMMENTS ON THE ACCC'S DISCUSSION PAPER: REVIEW OF THE REGULATORY TEST

A Report for TransGrid

Prepared by NERA

March 2003
Sydney

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1. INTRODUCTION

1.1. Scope of this report

The Australian Competition and Consumer Commission (ACCC) has released a Discussion Paper as part of its review of the regulatory test.[1]

TransGrid has asked NERA to review and comment on two of the three options proposed by the ACCC for revising the regulatory test:

- Option 1 Minor Amendments; and
- Option 2 Definitional Changes.

We note that these options have not been proposed as mutually exclusive by the ACCC. Neither do they exclude the adoption of the ACCC's Option 3: Inclusion of Competition Benefits.

1.2. Summary

The ACCC notes that its review of the regulatory test is being undertaken in order to ensure that the test does not result in a complex and lengthy process that delays the development of regulated investment.[2]

Inconsistency between the requirements of the regulatory test and the wider National Electricity Code ('the Code') and any ambiguity in the interpretation of the regulatory test can both lead to uncertainty and the potential for disputes. Removing inconsistencies and limiting ambiguity as far as possible will therefore help to minimise the length and complexity of the regulatory test process. This in turn will reduce unnecessary delays in the development of regulated investment, whilst continuing to ensure that the benefits of regulated investments are considered against those of alternative options before the investment proceeds.

The ACCC's proposals under Option 1 are intended to ensure consistency between the regulatory test and the Code, particularly in the light of the Code changes made as a result of the 'Network and Distributed Resources' (NDR) package. Achieving such consistency will remove the likelihood of unnecessary legal challenge. However, we have concerns that the wording of the proposals as put forward by the ACCC does not in fact achieve the consistency which the ACCC intends. We discuss this further in Section 2 of this report.

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1 ACCC Discussion Paper ***Review of the Regulatory Test***, 5 February 2003.

2 ACCC Discussion Paper, p.5.

The ACCC's proposals under Option 2 are intended to increase clarity in the application of the regulatory test, by providing definitions for aspects of the test that have been found to be ambiguous and open to interpretation. The clearer the regulatory test requirements are, the less the scope for delays and challenges to regulated investment arising as a result of the application of the test. However, again we have concerns that the definitions proposed by the ACCC may not ***in practice*** result in the greater clarity which the ACCC intends. We discuss Option 2 in detail in section 3 of this report.

2. OPTION 1: MINOR AMENDMENTS

The ACCC's proposals under Option 1 are designed to ensure consistency between the regulatory test and the Code, particularly in the light of the Code changes made as a result of the NDR package.

Inconsistency between the regulatory test and Code requirements makes it difficult for Network Service Providers (NSPs) to know with what they should be complying. Amendments to the regulatory test to ensure that it is aligned with the Code will remove the avenue for unintended disputes, and so avoid unnecessary delays to regulated investment.

The ACCC propose two main sets of changes under Option 1:

- changes to the preamble to the regulatory test;[3] and
- changes to the 'reliability' limb of the regulatory test.

We discuss each of these sets of changes in turn below.

2.1. Changes to the preamble to the regulatory test

The first change the ACCC proposes to the preamble is to change the reference to the Code clause under which the ACCC is required to promulgate the regulatory test, from 5.6.5(q)(1) to 5.6.5A(a). This change ensures consistency with the Code, following the NDR package Code changes.

The second proposed change is to that part of the preamble which sets out ***when*** the regulatory test is to be applied, ie, which clauses of the Code require the regulatory test to be applied.

The NDR package has transferred the responsibility for applying the regulatory test from the Inter-regional Planning Committee (IRPC) to the NSPs. As a result, the Code clauses under which the regulatory test must be applied and the party which must apply the regulatory test have changed. The current preamble to the regulatory test is not consistent with these Code changes.

The ACCC has proposed changes to the preamble which are intended to achieve consistency with the current Code provisions. However, the drafting proposed by the ACCC has incorrect references to the relevant Code clauses, and the proposed change in drafting to part (b) of the preamble is (at best) confusing.

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[3] The ACCC's proposed changes in its Discussion Paper under the headings 'preamble' and 'other amendments' both relate to the wording of the preamble. We therefore discuss these changes under a single heading here.

There are three situations in which the Code currently requires the regulatory test to be applied:

(i). by DNSPs to distribution augmentations under clause 5.6.2 and by TNSPs to 'grandfathered' augmentations under clause 5.6.2;[4]

(ii). by TNSPs to new small network assets under clause 5.6.2A(b)(5)(iii); and

(iii). by applicants to new large network assets under clause 5.6.6(b)(5).

One possibility would be for the ACCC's proposed changes to the preamble to be amended to refer to the above Code clauses, as follows:

'The regulatory test is to be applied:

(a) to transmission system or distribution system augmentation proposals in accordance with clause 5.6.2 of the Code (augmentation);

(b) by TNSPs ~~NSPs~~ to new small network assets identified under clause ~~5.6.5~~ 5.6.2A(b)(5)(iii) and pursuant to clause 5.6.6A of the Code~~, other than to a new large network assets in accordance with clause 5.6.6~~ (***new small network assets***); and

(c) by applicants ~~NSPs~~ to new large network assets pursuant to clause ~~5.6.6A~~ 5.6.6(b)(5) of the Code (***new large network assets***)

In this test, ***augmentation***, ***new large network assets*** and ***new small network assets*** are called ***proposed augmentations***'.

There always remains the possibility of further changes to these Code requirements being made in future. If such changes did occur, then the preamble to the regulatory test would need to be revised again.

A more robust solution would therefore be for this part of the preamble to be omitted completely. The Code itself makes clear the circumstances when the regulatory test is required to be applied and by whom. There is therefore no ***need*** for these requirements also to be specified as part of the regulatory test preamble. The ACCC's proposed drafting illustrates the potential for error in attempting to summarise the Code provisions in the preamble to the regulatory test. More fundamentally, including such drafting in the preamble raises the possibility of future inconsistency if the Code requirements change, for little overall benefit.

[4] 'Grandfathered augmentations' are those which fulfil the criteria set out in 5.6.2(a2).

2.2. Changes to the 'reliability limb' of the regulatory test

There are two parts to the regulatory test: one which the ACCC has described as the 'reliability limb' and a second which applies to all other augmentations.

If an augmentation is proposed in order to meet an objectively measurable service standard linked to the technical requirements of schedule 5.1 of the Code – the augmentation must minimise the net present value of the cost of meeting those standards. This is part (a) of the regulatory test, ie, the 'reliability limb'.

In all other cases, the augmentation must maximise the net present value of the market benefit. This is part (b) of the regulatory test (the limb which applies to all other augmentations).

The NDR Code changes expressly introduce the concept of a 'reliability augmentation', which is defined as:

> 'A ***transmission network augmentation*** that is necessitated solely by an inability to meet the minimum ***network*** performance requirements set out in schedule 5.1 or in relevant legislation, regulations or any statutory instrument of a ***participating jurisdiction.***'

The ACCC has proposed a change to the wording of part (a) of the regulatory test ('the reliability limb') to include reference to network performance standards in relevant legislative or statutory instruments. However, given that 'reliability augmentation' is now a defined term in the Code, part (a) of the regulatory test could be more clearly expressed as:

> (a) in the event the ***augmentation*** is proposed ~~in order to meet an objectively measurable service standard linked to the technical requirements of schedule 5.1 of the Code~~ as a ***reliability augmentation*** – the ***augmentation*** minimises the net present value of the ***cost*** of meeting ~~those standards~~ the relevant network performance requirements.

The ACCC Discussion Paper incorrectly states that TNSPs which propose to construct new large network assets must apply the regulatory test 'unless the asset is a reliability augmentation'.[5] This is incorrect. Reliability augmentations are still required to pass the regulatory test, as set out in the Code 5.6.6(b)(5) (for new large network assets) and 5.6.2A(b)(5)(iii) (for new small network assets). The only difference is that in order to pass

[5] ACCC Discussion Paper, p.27.

the regulatory test they need to minimise net costs (under part (a) of the regulatory test) rather than maximising net benefits (part (b) of the regulatory test).[6]

The ACCC Discussion Paper also comments that reliability augmentations cannot be subject to dispute.[7] This is also incorrect. Reliability augmentations may be subject to dispute, under 5.6.6(h) of the Code.

2.3. Other changes to improve clarity and avoid unintended disputes

The ACCC is proposing to make changes to the regulatory test to align it with the NDR package. This would also provide an opportunity for the ACCC to make two additional, minor changes to the wording of the regulatory test, to improve clarity and to remove what may be an unintended potential for dispute.

We note that the term 'project' is used in the regulatory test to cover both an 'alternative project' which is being assessed under the regulatory test and to refer to a 'project' which is included in the market development scenario against which the assessment is being made. The latter will include network developments, generation developments and demand management developments which are expected or modelled to occur in the National Electricity Market (NEM), but which are not being assessed under the regulatory test.

There would appear to be sufficient distinction between what is being referred to in the two cases to warrant the use of separate terms. The adoption of separate terms would result in greater clarification as to what is being referred to in each case.

Secondly, the wording of the text which follows the definition of the regulatory test says that a project maximises the market benefit if it achieves a greater market benefit 'in most (although not all) credible scenarios.'[8] We do not believe that it is the intention of the ACCC to conclude that a project does not satisfy the regulatory test if it does in fact have the greatest benefit across all scenarios considered. Indeed, we understand that this would not be a robust legal interpretation. In the interest of increased clarity it would seem appropriate for the reference to be amended to read: 'in most (although not necessarily all) credible scenarios.' The reference to 'in most (although not all) credible scenarios' in part (b) of the text would also need to be similarly modified.

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6 The difference between the analysis of net costs and the analysis of net benefits is semantic, since costs and benefits need to be taken into account in both cases. The key difference between the two limbs is that a reliability augmentation can satisfy the regulatory test even where it implies a net cost to the market, whereas an augmentation proposed for non-reliability reasons will only satisfy the regulatory test where there is a positive net market benefit associated with the project. If there were not a positive net benefit to the market, then the option which would satisfy the regulatory test would be the 'do nothing' option. For reliability augmentations, the 'do nothing' option is not an alternative project, since it would not result in the required reliability criteria being met.

7 ACCC Discussion Paper, p.36.

8 That is, point (e) following the regulatory test.

3. OPTION 2: DEFINITIONAL CHANGES

The ACCC's Option 2 embodies changes to the regulatory test to remove ambiguity and achieve greater clarity in the requirements. Experience to date with applications of the regulatory test and the recent hearing and Determination by the NET have shown that there are areas of ambiguity. Indeed, such ambiguity has been a source of complexity for TNSPs in knowing how to apply the regulatory test, and has also led to disputes which have slowed the process for regulated investments.

The ACCC's efforts to 'clarify elements of the regulatory test that may currently be considered ambiguous and open to interpretation'[9] may therefore be expected to reduce the scope for disputes. However, some of the definitional amendments proposed by the ACCC could be further refined to ensure greater clarity.

3.1. Alternative projects

The definition of 'alternative project' is one area where there has been ambiguity in applying the regulatory test. The ACCC's move to define more clearly what should be considered as an 'alternative project' can be expected to reduce this ambiguity. We agree with the ACCC that an alternative project should be a 'substitute' to the project being evaluated and should be 'practicable'. We also agree with the view that if a project has a proponent, then this would be sufficient evidence that it is 'practicable', but that the presence of a proponent should not be a requirement for a project to be considered an alternative. We take this to be the ACCC's view from its discussion on page 30 of the Discussion Paper, and from its proposed definition of 'alternative project'.[10]

The ACCC proposes to include the following definition of 'alternative project' in the regulatory test:

- have a clearly identifiable proponent, or
- (a) the project should be a genuine alternative to the project being assessed, ie, a substitute; and
- (b) the project should be practicable.

The ACCC goes on to propose definitions for 'substitute' and 'practicable'.

This definition would have what we imagine is an unintended implication, that a project would be considered an 'alternative project' if it had a proponent, even if it was not a

[9] ACCC Discussion Paper, p. 28.

[10] We note that the ACCC refers to clause 5.5.6 of the Code in support of its view. There is no clause 5.5.6 of the Code, and it is unclear what Code reference is intended by the ACCC.

substitute for the project being evaluated. This is because under the ACCC's proposed definition, projects which have a clearly identifiable proponent are automatically classed as alternatives, without also having to be a substitute for the project being evaluated.

In order to avoid this consequence, alternative projects could be defined as follows:

> (a) the project should be a genuine alternative to the project being assessed, ie, a substitute; and
>
> (b) the project should be practicable.

The ACCC's proposed definition of 'practicable' could then be extended to note that the presence of a clearly identifiable proponent indicates that the project is practicable, as below:

> ***'Practicable:***
>
> In considering the practicality of a proposal, the following issues need to be considered:
>
> - the technical feasibility of the additional proposal; and
> - the commercial feasibility of the additional proposal.
>
> Where a proposal has a clearly identifiable and credible proponent, the project should be considered to be practicable.'

In terms of the ACCC's proposed definition of 'substitute', we agree that the outcomes delivered by the proposal should be similar to those delivered by the project in order for it to be considered as a substitute. However, it may not be necessary also to require the proposal to become operational in a similar timeframe to the project. Requiring alternative projects to become operational in a similar timeframe would exclude alternatives which are able to be implemented with a much shorter lead time. Such projects are typically generation alternatives, which can be constructed more quickly than network augmentations. The NPV analysis required under the regulatory test already accounts for differences in project timings. If the ACCC does want to place some limitation on the extent to which project timings can differ, it may be more appropriate for such a limitation be made explicit (eg, 'five years'), in order to avoid ambiguity.

We note that an issue raised by interested parties in submissions to the ACCC and reported in the Discussion Paper is whether 'alternative projects' is intended to mean 'alternative

non-regulated projects' or 'alternative projects that do not involve regulated augmentation of the proponent's network.'[11]

Imposing such a restriction would not be compatible with ensuring that the augmentation undertaken by NSPs is optimal. It is not apparent from ACCC statements to date or from previous applications of the regulatory test that any such restriction is intended. However, given that this is an area where alternative interpretations continue to be raised, it would reduce the scope for dispute if the ACCC made a clear statement that 'alternative project' is not intended to mean 'alternative non-regulated project.'

3.2. Market benefit and costs

3.2.1. Proposed illustrative list of costs and benefits

The ACCC's Discussion Paper provides a list of market benefits and costs which it considers should be included as 'examples' in the regulatory test.

The list of costs and benefits identified is consistent with those costs and benefits which are commonly included in the regulatory test (with the exception of the 'cost of disruption of the NEM for testing'). There is likely to be value in providing such as a list as examples for parties applying the regulatory test. However, given that the costs and benefits associated with alternative projects can be expected to vary with the type of projects considered, we would consider such a list as being 'indicative' rather than prescriptive. As such, it would not preclude the inclusion of other costs and/or benefits associated with specific options, where these have been identified by the NSP or through the consultation process. Similarly, it would not require all of the costs and benefits listed to be included for all assessments, where such costs and benefits were either deemed not to be present or non-material. We interpret the ACCC's proposal as being consistent with this view.

We note that the ACCC proposes to include the 'cost of disruption to the NEM for testing', as a cost associated with projects. We are not aware that this cost has been incorporated in regulatory test assessments to date. The cost of 'disruption to the NEM' would be related to any changes in the dispatch pattern arising from such testing. Whilst a higher cost dispatch would impose a cost, we are not sure of the practicality of assessing the value of this cost (which would presumably need to be estimated through market modelling), versus the materiality of the cost in terms of the regulatory test assessment.[12]

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[11] ACCC Discussion Paper, p. 16-17.

[12] We note that it is the net cost of any such disruption that should be incorporated in the regulatory test analysis. Testing is also likely to lead to transfers of revenue between generators, with some generators being 'constrained off' by the testing. However, such transfers do not represent a net cost to the market as a whole.

3.2.2. Calculation of the reliability benefit

In relation to the list of benefits provided by the ACCC, 'deferment of reliability plant' is listed as a benefit in capital deferral. The deferment of the need to install reliability plant is a benefit to the market which should be included in the regulatory test analysis. Applications of the analysis to date have valued this benefit in terms of the capex associated with the reliability plant (typically an OCGT plant), and the extent to which the need for the plant is deferred.

We note that an alternative approach to defining 'reliability benefit' has been proposed by Murraylink as part of its application for regulated status.[13] 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).

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. There is therefore no ***a priori*** reason to assume that these two differing approaches will give the same result.

To the extent that the different approaches give different results, the adoption of one method or the other may have a material impact on the regulatory test assessment. Whilst accepting that it may not be desirable to be overly prescriptive in terms of ***how*** costs and benefits are calculated (as opposed to providing examples of the costs and benefits which should be included), it would be beneficial for the ACCC to clarify whether it considers in this case that such an alternative approach would be acceptable.

3.2.3. Restriction of the costs and benefits included in the assessment

An issue raised in the ACCC Discussion Paper is whether regulated and unregulated network alternative should be treated in the same way in terms of the benefit (or detriment) associated with them.[14]

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[13] Murraylink Transmission Company, ***Application for Conversion to a Prescribed Service and a Maximum Allowable Revenue for 2003-12***, 18 October 2002.

[14] ACCC Discussion Paper, p. 13.

The aim of the regulatory test is to ensure that investments are optimal from the view of the market as a whole, rather than from the perspective of any individual proponent.

A level playing field between regulated and unregulated alternatives can be maintained by adopting an approach which assesses all of the costs and benefits accruing to the market as a whole, from each alternative project. There is no need to restrict the benefits included in the assessment for different types of project. We note that this point was made in the National Electricity Tribunal Decision in relation to SNI.[15]

3.3. Committed/Anticipated Projects

The costs and benefits associated with a given project can be considered in terms of both the costs that arise in undertaking the project itself (eg, capital costs) and the costs that arise through the impact of a particular project on the wider NEM (eg, changes in fuel cost as the result of the impact of the project on the pattern of generator dispatch).

Given that the future development of the NEM is uncertain, the assessment of alternative projects under the regulatory test is made against the background of different 'market development scenarios.' Whether or not a project is included in the market development scenario can have a material impact on the costs and benefits associated with the alternative project being assessed under the regulatory test. The notes to the regulatory test require that these market development scenarios include committed projects, anticipated projects and modelled projects. Committed projects must be included in all market development scenarios, with the result that the benefit of alternative projects is assessed taking into account the presence of such projects in the market.

'Committed projects' are defined in the regulatory test as those for which 'implementation and construction' has commenced and which have expected commissioning dates within three years. 'Anticipated projects' are defined as those for which 'planning is at an advanced stage' and which have expected commissioning dates within five years. The term 'implementation and construction' and the concept of what constitutes an 'advanced stage' of planning are both open to interpretation. As a result, there is ambiguity and the potential for dispute around when market developments should be considered as 'committed' or 'anticipated' and therefore about when they should be included in the market development scenarios against which alternative projects are then assessed. Given that whether or not a project is included in the market development scenario can have a material impact on the assessment, a clear definition of the criteria which should be adopted in deciding whether a development is 'committed' or 'anticipated' is therefore desirable, from the point of view of improving clarity and lessening the scope for disputes.

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[15] National Electricity Tribunal, ***Application For Review of a NEMMCO Determination on the SNI Interconnector, Reasons for Decision***, p.60.

Alignment of the definitions with those adopted for 'committed projects' by NEMMCO in its Statement of Opportunities (SOO) would be desirable from a consistency perspective. However, the ACCC's proposal to adopt the definition of committed projects currently applied by NEMMCO in the SOO does not appear to meet the underlying rationale for why projects are considered to be 'committed' or 'anticipated' under the regulatory test.

For projects to be considered 'committed', there should be a high probability that those projects will in fact go ahead. Likewise, for projects to be considered 'anticipated', there should be a more than likely chance that the project will go ahead.

A fundamental principle underpinning the regulatory test is that of competitive neutrality, both in the assessment of alternative projects and in ensuring that the assessment of regulated projects takes into account their impact on non-regulated developments in the market. This principle of neutrality implies that in determining whether a given project is 'committed', the probability threshold adopted should be the same for all projects, whether regulated or non-regulated.

However, the factors which affect the probability of a project proceeding will differ for regulated and non-regulated projects, reflecting the difference in the ***process*** regulated and non-regulated projects each need to go through before they proceed. Therefore, whilst the probability threshold for a project to be considered as committed should be equal, regardless of whether the project is regulated or a non-regulated, it is reasonable for the criteria used to ascertain this probability to differ.

The majority of the criteria adopted by NEMMCO in the SOO in determining whether projects should be considered to be committed appear appropriate to determining that there is a high probability that a ***non-regulated*** project will proceed. The letting of construction contracts, the finalisation of financing arrangements, the purchase of land and the obtaining of environmental and planning approvals are typical processes, the outcome of which indicates that a non-regulated project is indeed likely to proceed. Evidence that these criteria have been met can therefore be used in distinguishing between projects which are feasible and have a high probability of proceeding (ie, are 'committed' projects) and projects about which there remains some doubt and speculation.

In relation to regulated projects, the key process hurdles that the investment needs to meet are the obtaining of environmental and planning approvals and the demonstration that the investment passes the regulatory test. The analysis required under the regulatory test itself requires demonstration that the project is commercially and technically feasible, and consideration of the costs of construction. There is therefore a high degree of substitutability between the financing/contracting criteria discussed above for non-regulated assets and the regulatory test process for regulated assets. Once the regulatory test process has been completed, and relevant environmental and planning approvals have been obtained, there is a high probability that the investment will proceed. Indeed, under note 7 of the regulatory

test, a proposed augmentation cannot be determined to satisfy the regulatory test unless the start of construction date is within twelve months.

As a result of the difference between the processes applying to regulated and non-regulated assets, we consider that for a project to be considered to be 'committed' it should meet the following two criteria (whether it is a regulated project or a non-regulated project) and ***in addition*** either the additional criteria relevant for regulated assets or the additional criteria relevant for non-regulated assets.

The two criteria required for all projects are:

(1) The proponent has obtained all required planning consents, construction approvals and licenses, including completion and acceptance of any necessary environmental impact statement; and

(2) Construction of the proposal must either have commenced or a firm commencement date must have been set.

A regulated investment would need to also meet the following additional criteria:

(1) The proponent has demonstrated that the investment satisfies the regulatory test, in line with the provisions in the Code.

A non-regulated investment would need to also meet the following additional criteria:

(1) The proponent has purchased / settled / acquired land (or legal proceedings to acquire land) for the construction of the proposed development;

(2) Contracts for supply and construction of the major components of the plant and equipment (such as generators, turbines, boilers, transmission towers, conductor, terminal station equipment) should be finalised and executed, including any provisions for cancellation payments; and

(3) The financing arrangements for the proposal, including and debt plans, must have been concluded and contracts executed.

The above criteria could be modified to apply to anticipated projects.

3.4. Discount Rate

The ACCC proposes in its Discussion Paper to retain the requirement to use a commercial discount rate in conducting the NPV assessment under the regulatory test, to ensure uniform treatment between regulated and unregulated projects.

The goal of ensuring competitive neutrality is consistent with the entire thrust of the regulatory test. However, the term 'commercial discount rate' is undefined and, to the

extent it has been interpreted as implying the use of a discount rate ***higher*** than the risk adjusted weighted average cost of capital (WACC), it may in fact ***undermine*** the objective of competitive neutrality.

The regulatory test evaluates the stream of ***costs and benefits*** associated with each alternative project under different market development scenarios, using the same discount rate. The alternative with the highest net benefit (or the lowest net cost, in the case of reliability augmentations) over the majority of credible market development scenarios is considered to have satisfied the regulatory test.

The regulatory test ***does not*** evaluate revenues flowing to particular potential investors, ie, it does not attempt to determine the alternative project with the best business case. Evaluating relative business cases would not only be impracticable, requiring estimation of data on project specific revenues as well as costs, it would be inappropriate. The regulatory test is applied from the perspective of the electricity market as a whole and does not have regard to where particular benefits fall within the market. Whether or not a project is privately profitable enters into the regulatory test only to the extent that a project has a 'proponent' or is deemed to be commercially feasible and so can reasonably be expected to have a proponent.

Consequently, it would be a mistake to believe that in order to achieve competitive neutrality the regulatory test must use a discount rate that is equal to the highest discount rate of any potential unregulated investor. Whether or not a business case exists for a project is determined by whether that project has a proponent or is deemed to be commercially feasible. To the extent that each project is commercially feasible, then competitive neutrality is served by evaluating the (market) benefits of each project using the same discount rate.

In light of this analysis, the term 'commercial' discount rate does not appear to provide sufficient clarity in relation to the choice of discount rate to be applied under the regulatory test. In our opinion, the appropriate discount rate is the weighted average cost of capital (WACC) determined by reference to the average risk profile of the market portfolio. Adopting the capital asset pricing model (CAPM) this can be calculated using the market average equity beta of 1, delevered for the average market gearing (of around 30%) to gain an average asset beta of around 0.7. The market average asset beta should then be applied to the same estimate of the market risk premium adopted by the ACCC at its most recent TNSP revenue determination, and combined with an up-to-date estimate of the risk free rate.

We note that the regulatory test requires the use of sensitivity analysis in relation to the discount rate adopted. Adopting the above definition of the relevant discount rate would be likely to lead to the regulatory test assessment being conducted using discount rates that are significantly below those which have been used in applications of the regulatory test to date (ie, typically 9% to 12%). The impact of the higher discount rates which have been used is that projects which involve greater up-front costs with benefits being realised later would

have a lower net benefit in the regulatory test assessment than would be the case if they were assessed under the more appropriate lower range of discount rates. As a result, it can be considered that applications of the regulatory test to date have not treated projects with such a cost/benefit profile neutrally compared to other projects.

Appendix A discusses why a 'commercial' discount rate may have been interpreted as being above the risk adjusted WACC.

3.4.1. Pre tax transformation

The CAPM model uses data that provides an estimate of the post-tax, nominal discount rate. The ACCC notes that a pre-tax real discount rate should be used, where the cashflows being assessed exclude tax. The ACCC notes that in converting from a post-tax nominal discount rate to a pre-tax real discount rate, there are two conversion methods. However, the ACCC does not propose to mandate a specific method for converting, since it does not consider that the differences between the conversion rates are likely to be material.

We believe that the ACCC incorrectly presupposes that an adjustment to the discount rate used in the regulatory test is necessary to reflect the existence of tax.

The fundamental rule in discounting any stream of values is that the discount rate should be consistent with the values being discounted. For example, if a stream of pre-tax revenue is being discounted by the recipient of those revenues then a pre-tax discount rate must be used to derive the appropriate value of the revenue stream to that individual.

However, the regulatory test is not applied to pre-tax revenue streams. Rather, the discount rate is being applied to different streams of costs and benefits. Consequently, there is no need to discount this stream using a pre-tax discount rate and therefore no need for conversion.

3.5. VOLL

VENCorp has proposed that the use of VOLL in the regulatory test should be replaced by the use of the 'marginal value of supply reliability to consumers'.

VOLL is the price cap which is applied to spot market prices in the NEM, and is currently $10,000/MWh. An earlier review of VOLL concluded that even at $10,000/MWh, this value is likely below the actual value of supply reliability to consumers.[16] That is, VOLL is not considered to be reflective of the ***true*** 'value of loss load' to customers.

[16] ACCC, ***Determination, VoLL, Capacity Mechanisms and Price Floor***, 20 December 2000.

VenCorp has recently commissioned an assessment of the true 'marginal value of supply reliability to consumers. The conclusion of that assessment was that a value of $29,600/MWh more closely reflected the value of supply reliability for Victorian consumers.[17] An earlier study commissioned by TransGrid concluded that a composite value of supply reliability for customers in the range $20,000-$24,000/MWh would be appropriate.[18]

The notes to the regulatory test currently require the assessment to take into account the value of energy to electricity consumers as reflected in the level of VOLL.[19] The ACCC proposes that in order to ensure consistency with the Code, the value of VOLL for the purposes of the regulatory test should be set at $10,000/MWh.

The level of VOLL enters into the regulatory test assessment at a number of points:

(a) it may be an input into deriving the required performance standard which reliability augmentations must meet;

(b) it may enter the market modelling, as the price cap applying in the spot market and as the price which is effectively bid into the market for 'reliability generators'; and

(c) in valuing the extent of unserved energy (USE) which is expected in relation to each of the alternative projects.

The use of VOLL in each of these contexts can be considered separately. In the context of (b), the use of VOLL in the regulatory test is intended to reflect the use of VOLL in the NEM. As such, we agree with the ACCC that these aspects of the assessment should use the value of VOLL as specified in the Code.

However, under (a) and (c), VOLL is in fact being used as a proxy for the value of supply reliability. As such, to the extent that the current $10,000/MWh level of VOLL is seen as being ***below*** the true value of supply reliability, then it would be more appropriate to substitute the use of VOLL in these aspects of the analysis, with a value which is considered to be closer to the true value of supply reliability.

We note that estimating the value of supply reliability may be a contentious exercise. However, to the extent that a consensus emerges on a value for 'supply reliability', or evidence can be provided which supports an alternative value,[20] then the regulatory test should allow flexibility for this value to be used in the assessment, in those places where

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17 VenCorp, ***The Value of Unserved Energy Used by VENCorp for Electricity Transmission Planning***, Consultation Paper, p. 3.

18 Centre for Electricial Power Engineering, Monash University, 1998.

19 Note (1)(b)(ii).

20 In this context, we note the recent studies by VenCorp and TransGrid, referred to above.

VOLL is currently used as a proxy for 'supply reliability.' It would be necessary to amend note 1(b)(ii) to the regulatory test in order to allow such flexibility.

APPENDIX A.

A.1. Why a 'commercial discount rate' may be interpreted as being above the market WACC

Section 3.4 in the main report noted that the 'commercial discount rate' used in the regulatory test assessed may have been interpreted as being above the risk adjusted weighted average cost of capital (WACC).

A relevant question in therefore why this may be the case. The answer is likely to lie in the 'hurdle' rates of return often used in discounted cash flow (DCF) analysis. These hurdle rates of return are often materially above a business' unbiased WACC, because the cash flows used in the analysis have not been estimated on an actuarial basis.

An example is provided in table A.1 below, for a three year investment. The net cash flows from the investment are shown at the left of each column and the expected value is shown on the right of each column. There are three possible forms the cash flow can take. If 'event 1' occurs cash flows will be \$10m, \$15m and \$20m. If 'event 2' occurs cash flows will be \$40m, \$50m and \$50m. If 'event 3' occurs cash flows will be \$60m, \$65m and \$60m. In each year the expected cash flow for this project is equal to the sum of the possible cash flows in each year multiplied by the probability of each event occurring.

Table A.1 Alternative Cash Flow Scenarios

	Probability	Year 1		Year 2		Year 3	
Event 1	0.3	\$10m	***\$3m***	\$15m	***\$4.5m***	\$20m	***\$6m***
Event 2	0.5	\$40m	***\$20m***	\$50m	***\$25m***	\$50m	***\$25m***
Event 3	0.2	\$60m	***\$12m***	\$65m	***\$13m***	\$60m	***\$12m***
		E(\$35m)		E(\$42.5m)		E(\$43m)	

The expected (or actuarial) cash flows for each period are respectively \$35m, \$42.5m and \$43m. If it is assumed that the market WACC is 10%, then the present value of the expected net cash flows gives a value of:

$$NPV = \frac{35}{1.1} + \frac{42.5}{(1.1)^2} + \frac{43}{(1.1)^3}$$
$$= 99.25$$

However, commercial practitioners often take expected net cash flows to mean the most likely cash flows, and ***not*** the actuarial expectation. The result is that they adjust the discount rate they use in the DCF analysis for ***diversifiable*** risk as well as ***non-diversifiable*** risk. In other words, commercial practitioners often compensate for a bias in their cash flows by

adopting a hurdle rate of return which is ***higher*** than the market cost of capital. To the extent that this is what is intended by the term 'commercial discount rate' then a commercial discount rate is clearly inappropriate in the context of the regulatory test – assuming that the modelling of the expected flow of costs and benefits under the regulatory test is unbiased.

The impact of such practice on the hurdle rate of return calculated can be large. Consider the previous example. The most likely cash flows are those relating to event 2 (ie, the event with the highest probability of occurring): $40m, $50m and $50m. This cash flow would need to be discounted by 18.6% instead of 10% in order to arrive at the correct present value for the cashflows associated with the project, ie:

$$99.25 = \frac{40}{1.186} + \frac{50}{(1.186)^2} + \frac{50}{(1.186)^3}$$