A REVIEW OF THE ACCC REGULATORY TEST

As applied to Network Augmentations

A Response to the ACCC Discussion Paper

dated 5 February 2003

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and
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1. Reasons for having a Regulatory Test

The purpose of the Regulatory Test (RT) is to ensure that there is some control over the investment in electricity networks where the risk of the investment is to be passed onto users of the networks. There is a basic assumption that the monopoly service providers (TNSP and DNSP) will actively seek to augment their networks and by doing so will achieve the regulated rewards resulting from carrying out such augmentations.

The Regulatory Test should therefore be seen as a discipline on NSP's to use their capex for augmentations which give an overall benefit to the electricity market and the users of the services provided.

There would appear to be two main flaws with the current formulation of the RT. The first is that the benefits arising from greater competition are excluded from the test. The ACCC has noted this and has addressed it as part of the review of the RT.

However there is a more insidious flaw with the RT as it stands. This is that the assumption has been made that the proposed augmentation as designed is the most appropriate augmentation for the needs of the network and for the users of the network. Thus the RT needs to be expanded from just assessing whether the proposed augmentation delivers a net benefit, to including whether the *design* of the proposed augmentation, at technical and commercial levels, provides the maximum benefit to the electricity market and to users. This aspect is developed further within this paper at section 3, review of ACCC option 2.

2. A review of augmentations

There are two basic types of augmentations – that for improving reliability of the service and the other for providing an expansion of the network.

Reliability augmentation.
Reliability is a measure of performance. Any measure must have a start point and therefore the first step of measuring reliability is to establish the benchmark performance. The National Electricity Code (the code) implicitly provides some reliability requirements and performance standards; the Reliability Panel has also established some yardsticks and regulators have set some benchmark

performance levels. Derogations to the code add further confusion to what are the acceptable minimum reliability standards.

The implicit assumption made by the ACCC in the RT is that these various benchmarks are appropriate, and that improvement on them is desirable. It is essential that as a first step there must be agreement as to what constitutes the range of settings for acceptable or standard reliability and performance.

There is some variation between jurisdictions as to what constitutes the acceptable performance benchmark and there are even interpretative differences as to what the “standard performance” requires. The recent ACCC review of service performance measures assists in this task, but these standards were developed to set overall performance measures for the purpose of incentivising out-performance from current levels rather than establishing a minimum standard

What is required is a consistent set of clearly defined operational standards for establishing minimum reliability levels. However care must be taken to ensure that in setting the minimum standards for reliability, the cost in achieving these levels is commensurate with the costs to users of not benefiting from the minimum reliability standards. This is an issue for the jurisdictions, the Reliability Panel and regulators with technical responsibility.

From the basis of having clear minimum standard(s), comes the ability to apply the RT as to what augmentation (and what alternatives are possible) is needed to achieve minimum reliability of the system.

An improvement in reliability does not have an identifiable financial benefit, and the RT should be applied to demonstrate that the solution to be provided to rectify the reliability shortcoming, is being provided at the least cost to users of the network. Thus the regulatory test should be to prove the lowest cost option will be instituted.

A cost/benefit analysis is not appropriate for augmentations provided to increase reliability to the minimum standard.

Expansion augmentations.
An expansion of the network can be carried out to provide two different benefits.

1. To extend an existing network to provide for the needs of identifiable new user(s). This allows for surplus capacity of the network to be utilized and so reduce the unit costs to all existing users i.e. this is an augmentation which provides more effective use of the capacity of the existing network.

2. To provide stronger connection between regions, and so reduce the cost of potential or actual constraints and/or to normalize the inter-regional pool price differentials.

There is little doubt that the first type of expansion can be readily tested using the economic approach implicit in the RT. Cost modeling is relatively simple and the calculation of benefits straight forward. Alternatives to achieve similar outcomes are likely to be few, resulting in straight forward analysis of the options and cost of each.

However the second type of expansion augmentation provides the greatest difficulty in applying an econometric approach. Effectively identifying the target outcome is not necessarily obvious and this outcome can be in fact a variable in itself. Following on from this, the number of alternatives to achieve the target outcome expected from the proposed augmentation can be large, with each having different characteristics and varying degrees of ability to provide the target outcome. In this environment the modeling becomes a major activity, with the numeric solutions so dependent on assumptions made that effectively the modeling can deliver the outcome desired. The reviews of the SNI project and the current Murraylink application demonstrate this high level of complexity and the challenges confronting the modeler.

The basic reason for building an interconnector between regions is to normalize power pool prices and to reduce market power of the generators in each region. Valuation of the benefits of such an augmentation then becomes grossly complex and beset by a large variety of assumptions. There has previously been an attempt to exclude the benefits of pool price normalization as this would appear to be a transfer of wealth, rather than a market benefit. The term “a transfer of wealth” implies equity between the proponents, in this case between generators and consumers. There are issues that then cloud the apparent clarity of this argument.

- As market participants, generators are required contribute less than half of the costs of the network, biasing the transfer of wealth argument in favour of generators.
- There is now general acceptance by the market participants and particularly the market administrators and the ACCC, that generators can and do exercise market power, and the consumers have little ability to balance that power. One of the ways consumers can rebalance the market power issue is by paying for greater interconnection between regions.
- There is a correlation between volatility of power pool prices and degree of interconnection between regions. The stronger the interconnection, the less volatile the pool prices between regions and within each region.

Lower volatility creates less risk to all generators, retailers and consumers. Valuation of this lower risk is difficult but is an essential but overlooked element of the RT.

For the RT to exclude the pool benefits arising from the operation of the inter-regional augmentation – supposedly excluded because of the transfer of wealth argument – denies that there are benefits which need to be included. To continue to deny the inclusion of these benefits in the RT will result in suboptimal networks and perpetuate generator market power.

3. Review of the ACCC options

The ACCC has proposed that there be three options that need consideration for the revision of the RT

1. Ensure there is consistency between the code and the RT
2. Enhance definition and clarity to ensure consistency of application
3. Assessing methods for incorporation of competition benefits.

ACCC Option 1- consistency

There is a need to ensure consistency between the RT and the code. The changes proposed by the ACCC are sensible and reflect the code as amended.

It should be noted that the experience of the application to transfer Murraylink to regulated status raised serious concerns as to the adequacy of the NSP to provide a comprehensive listing and analysis of alternative projects which should be evaluated for technical viability. This concern is particularly relevant to the review of proposed interconnections. The NSP has a vested interest in presenting its preferred project in the best light and alternatives in lesser terms.

To overcome this inevitable bias, there is needed an independent body responsible for reviewing proposed large augmentations (particularly interconnectors) to ensure that the proposal does provide the optimum technical benefit to network users. The IRPC already has such a role and should have the responsibility for verifying the technical benefits and detriments of the proposed augmentation. It could also ensure that all alternatives have been identified and their technical benefits and detriments clearly evaluated.

The ACCC seeks comment as to whether the current threshold for allocation to “small” or “large” augmentations is too low. It is contended that it is not so much the threshold between large and small that needs review but that different thresholds may be appropriate to different types of augmentation.

Currently the $10m threshold would allow the NSP to add approximately $1m pa to its annual revenue base. This is a significant amount and shows that the current break point is appropriate, particularly where the augmentation may have wider impacts than purely replacement of existing assets.

There is agreement with the ACCC view where the augmentation is a replacement of exiting assets, and with the view that an increase of capacity undertaken at the time of replacement should be subject to the RT.

ACCC Option 2 - definitions

It is strongly recommended that the submissions made to the ACCC in response to the application for Murraylink to be granted regulated status should be reviewed as part of this review of the Regulatory Test. The Murraylink application and the submissions made provide good examples for many of the definitional issues confronting the ACCC with regard to application of the RT.

There are three reasons to evaluate alternative projects as part of the RT.

1. Identification of what is needed.
   There is a need to identify whether the full extent of the proposed augmentation is in fact required. The implication of the change proposed by the discussion paper is that the size and route of the proposed augmentation sets the benchmark for assessment of alternative projects.

   As noted in the response to Murraylink by ECCSA/EUCV the slightly smaller capacity augmentation of SAVic 650 may well provide a similar market benefit to Murraylink 180, but at a much lower cost. It could well be argued that under the proposed revised definitions the apparently smaller project would not be considered as an alternative, despite the fact that the smaller project would deliver much the same outcomes.

2. Technical superiority
   There is a need to establish the technical superiority of one project over another. With the Murraylink application, the technical features of Murraylink which was designed as a “market” augmentation (which requires controllability) are not required for a free flowing regulated augmentation. This highlights the need to assess the technical features of the proposed augmentation over those of competing and alternative augmentations which will achieve similar network outcomes and user benefits. Such a review by an independent technical body (as suggested above under option 1) would provide valuable input as to the technical benefits and detriments of the various options.

An example of this concern is found from the Murraylink conversion proposal. The method for converting the AC to DC and back to AC results in a very high impedance, causing large energy losses. An independent review would assess whether such increased impedance has a detrimental effect on the free flow of power, and whether the losses resulting from this impedance are appropriate for the system and greater than those occurring with alternative projects.

3. Lowest cost
   It is essential to identify the lowest cost to deliver the outcomes required. In regard to this it is important to assess both the technical aspects of the proposed augmentation to evaluate whether the features included within the proposal, are in fact needed to achieve the market benefit.

   As an example the proposal to convert Murraylink to regulated status includes for the cost of expensive equipment for converting AC to DC and back to AC. Whilst these features are needed for a market driven interconnector, there is serious doubt as to whether they are appropriate for operating in a free flowing AC regulated network. Alternative projects are unlikely to incorporate such features thus reducing the costs significantly.

The ACCC suggests that alternatives to a proposal should

- Have an identifiable proponent
- Be a substitute (i.e. have similar outcomes, and be able to be operational in a similar timeframe)
- Be practicable (i.e. be technically feasible and commercially feasible)

Whilst this listing is appropriate, what is absent from the details is that the proponents for the proposed augmentation should identify and quantify what the outcomes of the augmentation are (so to provide a firm basis for comparison) and whether the proposal itself has inherent alternatives (e.g. whether the proposal should be half or twice the size to achieve optimum benefit for the market).

An example of this concern arises with the Murraylink application. Murraylink as it is designed has the ability to be “controllable”. In the application for conversion to regulated status, the controllability is represented to be a desired feature. Under the proposed rewording of the RT, alternatives would be required to also be “controllable”, with there being no assessment as to whether controllability is a feature that is essential for the optimum operation of the network.

It is therefore beholden on the RT that is assesses the proposal itself to ensure that the maximum benefit to cost is to be achieved by the proposal. The assessment of the maximum benefit to cost will identify the optimum solution to achieve the desired outcomes and this becomes "the base case". If the proposal itself does not return the maximum benefit to cost, then the proposal and all alternatives should be measured against the base case against which all options are measured.

ACCC Option 3 – competition benefits

There is no doubt that augmenting the network will have an impact of the level of competition in the electricity market. Bardak P/L prepared an assessment of the benefits accruing to Queensland consumers as a result of the start up of QNI which shows a clear benefit[1].

It can be averred that regulated network augmentation (particularly increasing interconnection) is a demand side approach to reducing generator market power. The current ACCC RT (which excludes the impact of reducing generator market power) must be seen as less than a satisfactory test on which to base approval for an augmentation to be included into the regulatory asset base.

This shortcoming is recognized by this ACCC review and a number of theoretical approaches are proposed to assess the competition benefit, and for a quantification of the benefit to be included in the regulatory test. The ACCC then asks about practicality of each option, their flexibility and even whether it is appropriate to add the preferred test option into the RT, or for it to be a separate test.

The RT is designed to give a quantitative answer as to whether an augmentation increases the market benefit or not. To exclude an identified benefit (or to treat it separately) from the calculation of the quantified market benefit makes no sense. Whilst suggesting that the competition benefit test might be a separate test to the RT, the ACCC makes no attempt to provide an indication as to how the results of the two tests might be combined or considered to give a final answer as to the market benefit. In the absence of any proposal as to how the separate tests might be combined, the only sensible approach is to treat the competition benefit element as part of the RT and for the calculated answer to be inclusive of all benefits.

The fact that there may be a number of ways of quantifying the competition benefit seems to create concern and confusion, ranging from the view that there

[1] "An assessment of the first six months of operation of the QNI Interconnection" by Robert R Booth, July 2001, available for download on www.bardak.com.au

is one test which may provide the correct answer, through to excluding the benefit as there is no certain way to quantify it.

The Essential Services Commissioner of South Australia goes so far as to suggest that

> "The faith in modeling is not justified by experience; any result desired can be preprogrammed for delivery from any model. The heroic assumptions required, the sensitivity to these, and the wide deviation from actual outcomes, make any approach for a regulatory test based on modeling a recipe for dispute."[2]

This concern highlights the analogy for the setting of initial asset valuation, an issue debated at length for inclusion into the Gas Code – where the merits and demerits of DORC, DRC, DV, ODV were all debated – and after deliberation it was accepted that all of these methodologies are subjective and open to interpretation. To reach agreement the Gas Code finally is worded so that

> "… the following [eleven] factors should be considered in establishing the initial Capital Base for that Pipeline:"[3]

This clearly implies that after assessing a range of options, the Gas Code allows the regulator to exercise its discretion in setting the initial asset base, subject to upper and lower bounds[4]. Since the introduction of the Gas Code, regulators have used the flexibility inherent in it to set the initial asset base for a number of gas pipelines.

Using this principle as a template, the ACCC could calculate from any or all of the various options a quantification of the competition benefit, and from these develop a view of the probable competition benefit. This view would be added to the other market benefits calculated.

[2] Letter to ACCC from ESCoSA 13 March 2003
[3] National third party access code for natural gas pipeline systems clause 8.1
[4] ibid, clause 8.11