Treatment of Demand Management in the Regulatory Framework for Electricity Distribution Pricing 2004/05 to 2008/09

Draft Decision

IPART

INDEPENDENT PRICING AND REGULATORY TRIBUNAL
OF NEW SOUTH WALES

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Other Paper OP-20

February 2004

ISBN 1 877049 41 7

Request for submissions

Submissions are invited from interested parties. Unless confidentiality is sought, the submissions are generally available for public inspection at the Tribunal's offices and will be available on-line in PDF format from the time of processing of the submission until 3-4 weeks after the release of the final report of an inquiry. The Tribunal may exercise its discretion not to exhibit any submissions based on their length or content (containing material that is defamatory, offensive, or in breach of any law).

Submissions should have regard to the specific issues that have been raised. There is no standard format for preparation of submissions but reference should be made to relevant issues papers and interim reports. Submissions should be made in writing and, if they exceed 15 pages in length, should also be provided on computer disk in word processor, PDF or spreadsheet format.

Submissions from stakeholders must be received by 5pm, Friday 5 March 2004.

All submissions should be sent to: **Demand Management Draft Decision**
Independent Pricing and Regulatory Tribunal
PO Box Q290
QVB Post Office NSW 1230

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If you want your submission, or any part of it, to be treated as confidential, please indicate this clearly. The Tribunal may include in its publications a list of submissions received during the course of a particular review or inquiry. It may also refer to submissions in the text of its publications. If you do not want your submission or any part of it to be used in any one of these ways, please indicate this clearly.

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Information about the role and current activities of the Tribunal, including copies of latest reports and submissions can be found on the Tribunal's web site at www.ipart.nsw.gov.au.

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1 INTRODUCTION

In its draft report on NSW electricity distribution pricing from 2004/05[1], the Independent Pricing and Regulatory Tribunal (the Tribunal) expressed its belief that demand management can play an important role in helping the state's four Distribution Network Service Providers (DNSPs) to better manage their networks and lower the cost of service provision. In the past, several stakeholders have argued that the way in which distribution pricing is currently regulated creates barriers to demand management. Therefore, in determining the regulatory framework for 2004/05 to 2008/09, the Tribunal is seeking to ensure it provides no regulatory barriers to DNSPs undertaking efficient demand management projects.

1.1 Summary of draft decision

The Tribunal's draft decision in relation to the treatment of demand management for the 2004/05 to 2008/09 regulatory period is that:

- the cost building blocks on which DNSPs' notional revenue requirements are based will be established on the basis of pre-demand management values and will exclude demand management costs
- DNSPs will be allowed to pass through demand management costs incurred during the regulatory period, up to a maximum value of the avoided distribution costs
- DNSPs will be allowed to recover foregone revenue as a result of demand management projects during the regulatory period
- the recovery of demand management costs and foregone revenue will be by way of a D-factor in the weighted average price cap formula.

The Tribunal considers that its draft decision represents a generous treatment of demand management. It believes that this approach is justified in the 2004-09 regulatory period, in light of the emergent nature of the market for demand management solutions and the barriers to adoption that demand management faces. The Tribunal expects that the treatment of demand management will be less generous in future regulatory periods as demand management becomes integrated into the DNSPs' planning processes.

1.2 Purpose of this paper

The purpose of this paper is to explain the Tribunal's draft decision in detail, and invite stakeholders to comment on the decision. This paper should be read in conjunction with the Tribunal's draft determination[2] and draft report on NSW electricity distribution pricing.

The following chapters discuss:

- the Tribunal's objective for the regulatory treatment of demand management
- the issues that need to be considered to meet this objective
- the findings of the consultant, SKM that the Tribunal engaged to help it examine these issues

1 IPART, *NSW Electricity Distribution Pricing 2004/05 to 2008/09*, Draft Report, OP-18, January 2004.
2 IPART, *NSW Electricity Distribution Pricing 2004/05 to 2008/09*, Draft Determination, OP-19, January 2004.

- the Tribunal's proposed approach for the treatment of demand management for the 2004/05 to 2008/09 regulatory period
- the expected impact of this approach, using a demand management project in Castle Hill as an illustration.

The Tribunal welcomes feedback on any aspect of its draft decision, and will consider this feedback prior to making its final decision. In particular, it invites submissions from DNSPs on whether the proposed framework can adequately deal with the kind of demand management projects they could potentially undertake during the regulatory period. If DNSPs or other stakeholders identify concerns with the proposed treatment, the Tribunal welcomes suggestions for alternative treatments, *including details of how these treatments would be implemented in practice*. The Tribunal also welcomes input on the appropriate principles for calculating foregone revenue and demand management costing, as discussed in chapter 5.

Submissions in response to this paper are due on 5 March 2004. Inquiries relating to the paper should be directed to Lisa Spence (02 9290 8440) or Fiona Towers (02 9290 8420).

2 TRIBUNAL'S OBJECTIVE

In the context of electricity distribution networks, demand management can potentially be used to reduce network expenditures. For example, a DNSP could implement a demand management project to reduce congestion at a particular location in the network, or at a particular time across the whole network, or both. This could reduce the need for additional network capacity, and thus could enable the DNSP to defer or even avoid capital expenditure (and associated operating expenditure) for a period of time.

This deferral of expenditure represents a benefit that is equivalent to the opportunity cost of the avoided expenditure — that is, the return on the expenditure that could have been earned had the funds been invested at the DNSP's weighted average cost of capital (WACC).[3] The *net* benefit is the difference between this deferral value and the cost to the DNSP of bringing about the change in demand patterns (demand management implementation or project costs) — that is, the net cost saving.

In determining the regulatory treatment of demand management costs and benefits—for example, whether this net benefit should be retained by the DNSP or returned to customers—the Tribunal has considered the likely effects on DNSPs' incentives to undertake demand management. However, it is important to note that the Tribunal's objective here is not to encourage DNSPs to maximise the amount of demand management they undertake during the regulatory period. Rather, **the Tribunal is seeking to ensure that there are no regulatory barriers that affect DNSPs' commercial decisions to contract or purchase *efficient* demand management that could lead to net reductions in network costs.** By efficient, the Tribunal means demand management projects that deliver net cost savings to networks.

The Tribunal recognises that demand management can have wider benefits than the deferral of network expenditures—such as reductions in greenhouse gas and other emissions, and reductions in capital expenditure upstream from the distribution network (for example, in generation or transmission assets).[4] However, the Tribunal believes the primary focus of its network determination should be on ensuring that its regulatory framework supports an efficient level of distribution network-related demand management. The Tribunal does not believe that its network determination is the appropriate instrument for encouraging demand management not directly related to the efficient provision of network services. It is likely that other more targeted instruments would be better at stimulating demand management that generates wider benefits to the community. The NSW Government's greenhouse gas abatement scheme is one example.

The Tribunal is aware that some stakeholders would like to see requirements on DNSPs to spend a minimum amount on demand management or for there to be more prescriptive regulation of DNSPs in regards to their treatment of demand management options. However, considering such measures is outside the Tribunal's role, which is economic regulator for network businesses. Deciding whether or not these measures should be

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3 Another way of expressing this is that the deferral value represents the savings in the 'interest' cost of funding the investment brought about by deferring the expenditure. Here the interest cost is the rate of return required by the DNSP's owner to commit funds to the business — that is, the WACC.

4 The wider benefits of demand management are discussed more fully in the Tribunal report on its inquiry into demand management — IPART, *Inquiry into the Role of Demand Management in the Provision of Energy Services Final Report*, Rev02-2, October 2002.

introduced is a policy issue, and therefore the responsibility of the Government. However, the Tribunal notes that such an approach would be heavy-handed and not without some considerable disadvantages. Any policy consideration of these issues will need to carefully weigh potential benefits against potential costs.

The Tribunal's aim is to ensure that its regulatory framework does not erect barriers to network-driven demand management. This will be an important step in promoting demand management, but it will not remove all the obstacles that demand management faces. Action is required by all those involved in the industry. DNSPs must respond to the incentives created and seek out opportunities for demand management to reduce their operating and capital costs. As the Tribunal has noted previously, this will require improvements in planning processes and in the cultures within these businesses. Beyond the network businesses, development of the market for demand management will also require action by retailers, customers, service providers and Government. The Tribunal's report on the inquiry into demand management[5] outlines possible actions by these groups that could support the development of a market for demand management.

5 IPART, *Inquiry into the Role of Demand Management in the Provision of Energy Services Final Report*, Rev02-2, October 2002.

3 ISSUES TO BE CONSIDERED

Demand management can affect the costs and revenues of a DNSP in three ways:

- **avoided distribution costs**—the reduction in the DNSP's costs that may result from the deferral of capital and operating expenditure as a result of the demand management activity
- **demand management implementation costs**—the costs that the DNSP will incur in bringing about deferral of capital expenditure
- **foregone revenue**—the reduction in the DNSP's revenue due to the lower sales of electricity that may result from the demand management activity.

The way that each of these impacts is treated under the regulatory framework will affect the DNSPs' incentives to undertake demand management. The Tribunal needs to ensure that this treatment does not create disincentives, and thus regulatory barriers to demand management. The Tribunal needs to address a number of issues to avoid creating disincentives to demand management.

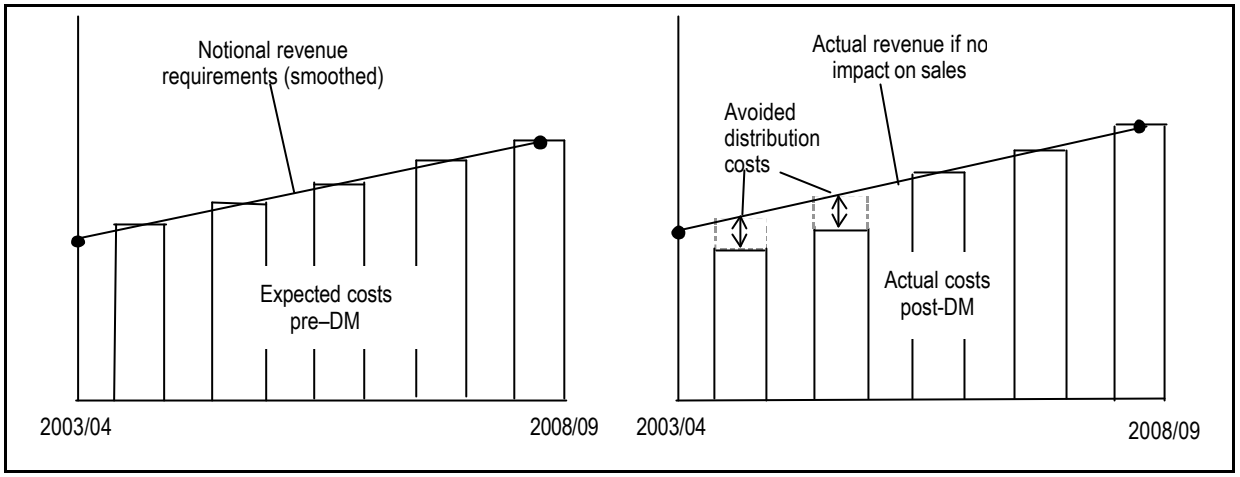
The first issue is whether the regulatory framework should pass avoided distribution cost savings through to customers, or whether should it allow some or all of the savings to be retained by the DNSP for a period of time? By allowing the DNSP to retain some or all of the cost savings, the regulatory treatment would provide DNSPs with positive incentives to pursue demand management options relative to network solutions.

Figure 3.1 illustrates how avoided distribution costs would benefit a DNSP. Under the new arrangements for the 2004 regulatory period, distribution prices are set using a weighted average price cap formula. With this approach, prices are set so that, if the DNSP sells its forecast volume of electricity, it will collect sufficient revenue to cover its expected costs, as shown in the first frame of Figure 3.1. Here the expected costs are based on a network build approach. If the DNSP undertakes a demand management project during the regulatory period that allows it to avoid some of these expected network costs but has no effect on its sales during the period (for example, some load shifting or embedded generation projects), then its actual revenue will be in line with the notional revenue requirement while its actual costs will be lower than the expected costs, as shown in the second frame of Figure 3.1.

The difference between actual revenue and actual costs represents the net cost saving to the DNSP, which adds to its realised profit.[6] This increase in profit provides an incentive for the DNSP to undertake demand management. The more these cost savings are passed on to consumers, the less incentive the DNSP has to choose demand management over network build options.

[6] In the example shown, the smoothed revenue requirement is the same as the unsmoothed revenue requirements. If the smoothed revenue requirement is less than the unsmoothed revenue requirement, the net cost saving will be greater, equal to the difference between the pre-demand management costs (as reflected in the unsmoothed notional revenue requirement) and actual costs (post demand management).

Figure 3.1 Impact of avoided distribution costs



The second issue to be considered is how the regulatory framework should treat demand management implementation costs. Should DNSPs be required to fund these costs out of the cost savings that demand management generates? Or should the Tribunal provide an explicit allowance to recover these costs and allow the DNSP to retain the full benefit of the avoided distribution cost savings?

The third issue to be considered is whether DNSPs should be able to recover any revenue foregone as a result of demand management. One of the key assumptions underlying Figure 3.1 is that the demand management activity will not affect the DNSP's sales volumes and revenue. However, as some demand management projects involve improving the efficiency of energy use, this assumption is not realistic for all projects. If a demand management project does reduce the DNSP's sales volumes, it will reduce its actual revenue. In this case, the impact on profits—and therefore the incentive to undertake demand management—will depend on how revenue is affected relative to costs.

Figure 3.2 provides a stylised illustration of the likely impact of foregone revenue on DNSP incentives under a range of possible scenarios with no adjustment to the current weighted average price cap regulatory framework:

- The first frame presents the base case, where the DNSP undertakes no demand management during the regulatory period. For simplicity, it is assumed that revenues and costs remain constant over the regulatory period, in the absence of demand management. The difference between revenue and cost represents the DNSP's profit — equivalent to the allowed rate of return on the DNSP's regulatory asset base.
- The second frame illustrates the same scenario as in Figure 3.1 — demand management brings about a reduction in costs but with no impact on revenues. In this case, the DNSP's profit is increased by the amount of the cost saving.[7]
- The third frame shows what happens when the demand management project leads to a small reduction in revenues for the DNSP (smaller than the avoided distribution costs). The increase in profit is smaller than when there is no foregone revenue — but is still an increase over the base case. In this scenario, there is still an incentive to

[7] It is assumed here that the demand management costs are funded out of the net cost saving — the reduction in costs is therefore equal to the difference between the deferral value and the cost of implementing the demand management project.

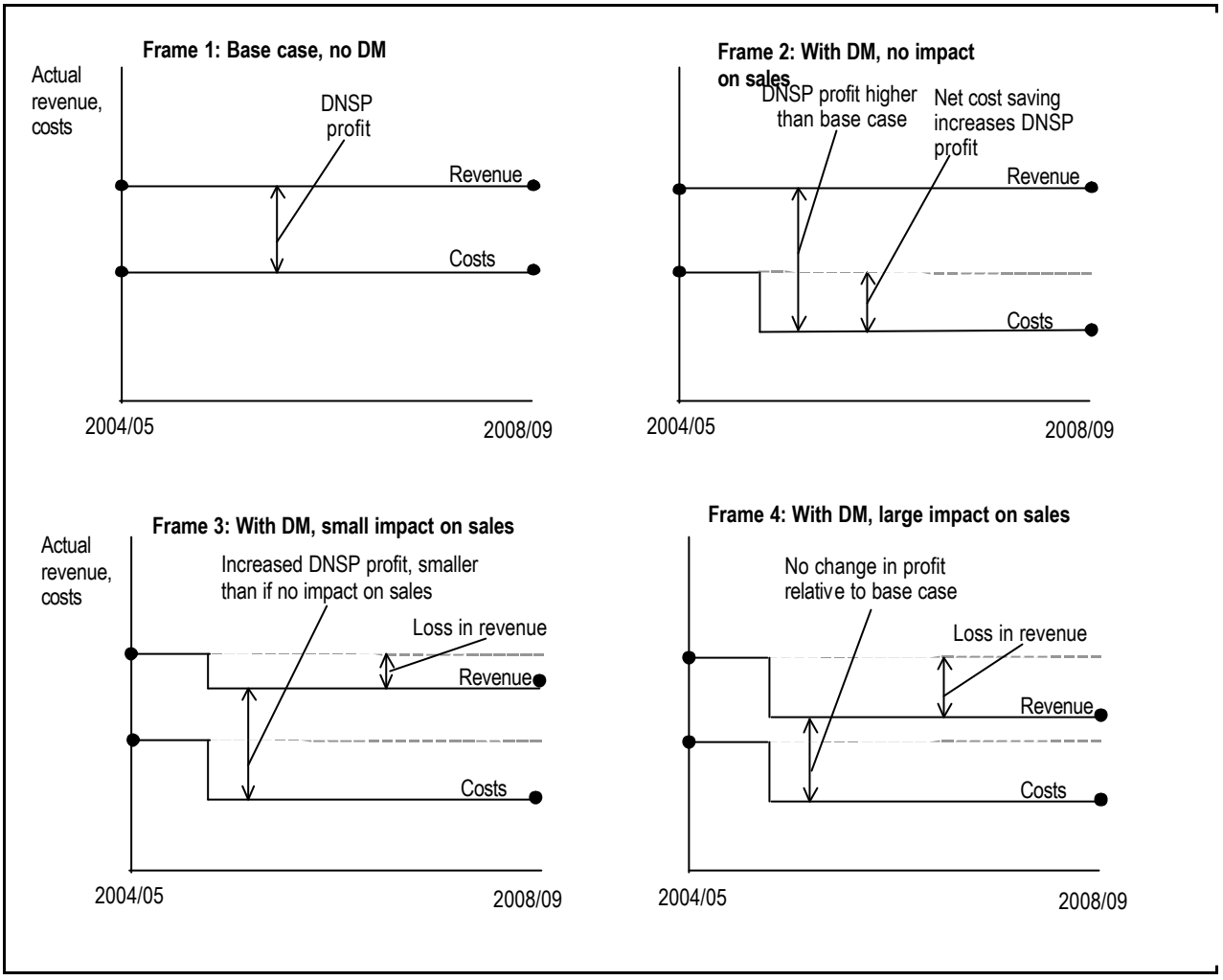
undertake demand management, but it is smaller than if there were no impact on revenues.

- The final frame illustrates the scenario where the reduction in revenue as a result of lower sales matches the reduction in costs.[8] Here, there is no change in the DNSPs' profit relative to the base case. In this situation, there would be no financial incentive to undertake a demand management project rather than the higher cost network solution assumed in the development of its notional revenue requirements, since the profits under each scenario are the same. However, the community's welfare would be improved if it undertook the demand management project since it lowers the resource cost of meeting the demand for electricity. If network businesses were in a competitive market, it would be expected that these demand management projects would be undertaken as competing firms attempt to lower their costs in order to attract market share and increase profits. This competitive discipline is not present in the monopoly market structure that characterises network businesses. The Tribunal needs to consider whether it should attempt to correct for 'foregone' revenue[9] to increase the incentives for DNSPs to undertake demand management.

[8] It is also likely that there will be instances where the decrease in revenues is greater than the cost savings.

[9] That is, the reduction in revenue as a result of reduced sales through demand management.

Figure 3.2 Impact on incentives of foregone revenue



4 SKM'S FINDINGS

To help it consider these issues, the Tribunal engaged a consultant, SKM, to examine the treatment of demand management in the regulatory framework. SKM's final report[10] evaluated two approaches — a cost recovery approach and an incentive-based approach.

Under the cost recovery approach, the Tribunal would:

- allow DNSPs to explicitly recoup the cost of demand management implementation,
- require any cost savings to be passed on to customers at the regulatory reset
- allow DNSPs to recoup foregone revenue as a result of the demand management project.

Under an incentive-based approach, the Tribunal would:

- allow DNSPs to retain the net benefit of cost savings for a period of time beyond the regulatory reset,
- require DNSPs to fund any demand management implementation costs out of the cost savings,
- allow DNSPs to recoup foregone revenue as a result of the demand management project.

SKM recommended that the Tribunal adopt an incentive-based approach, as this approach would encourage greater demand management activities. However, it also noted that over the longer term, as demand management becomes 'business as usual', it may be more appropriate to shift toward a cost recovery approach.[11] The implications of an incentive-based approach for the regulatory framework are discussed below.

4.1 Implications of SKM's incentive-based approach for the regulatory framework

The Tribunal's 1999 determination set out a framework for dealing with demand management projects under a revenue cap form of regulation. The Tribunal included a mechanism that allowed the DNSPs to recoup demand management implementation costs during the regulatory period, in addition to the annual revenue requirement. A DNSP could apply to the Tribunal to add payments for demand management and other network support services to its allowed revenues, up to an amount determined by the Tribunal through an examination of avoided network (distribution) costs.

To date, the Tribunal has received only one application under these arrangements. EnergyAustralia claimed initial expenditure on a retro-fit program. It was allowed monies up to the avoided distribution costs of the project.

From 2004, a weighted average price cap form of regulation will apply. In considering what changes are required to the regulatory framework under this new form of regulation, the Tribunal looked at what the implications of extending the current regulatory framework to

10 SKM, *Avoided distribution costs and congestion pricing for distribution networks in NSW*, November 2003

11 *Ibid*, p. 26.

the 2004-09 regulatory period, in light of SKM's findings. Table 4.1 summarises this comparison—the first column describes how the 1999 determination treated demand management projects; the second describes the impact of carrying forward the current arrangements into the 2004-09 regulatory period when a weighted average price cap will apply; and the third column describes what regulatory action might be required to implement the incentive based approach, as recommended by SKM.

Table 4.1 Implications of SKM report for current regulatory treatment

1999 Determination	Implications of Weighted Average Price Cap with no changes to regulation	Implication of SKM report findings
Revenue cap fixed for length of regulatory period – DNSP will retain any benefit from cost savings as a result of demand management	X-factor fixed for length of regulatory period – DNSP will retain any benefit from cost saving as a result of demand management	If demand management projects not factored into cost projections, no adjustment required by the Tribunal
Revenue cap means actual revenue will be the same as allowed revenue over regulatory period – not affected by sales volumes	Actual revenue will depend on sales volumes – demand management may lower sales volumes leading to under-recovery of notional revenue requirements	Foregone revenue may be disincentive for DNSPs to undertake demand management – Tribunal may need to correct for foregone revenue[12]
Pass through of approved demand management costs – DNSP is directly funded for these costs so does not need to fund them from cost savings	Same as for current regulatory period, if status quo regulation maintained	Recommends that no explicit recovery for demand management costs as these should be funded out of realised cost savings
No provision for handling projects where deferral spans regulatory periods	Same as for current regulatory period, if status quo regulation maintained	Recommends that notional revenue requirements be built up a basis of pre-demand management expenditure profile

This comparison suggests that the key implications of continuing the arrangement from the 1999 determination are:

- DNSPs will retain the benefits of any cost savings brought about by demand management (or any other efficiency improvements) during the regulatory period, provided these projects have not been factored into the cost projections
- demand management that reduces sales volumes will reduce the revenue recovered by DNSPs, reducing the incentive to undertake demand management
- the pass through of demand management costs will compensate DNSPs for demand management costs incurred, allowing them to retain the gross cost saving (as opposed to the net cost saving of the value of deferring capital and operating expenditure less any demand management costs)
- DNSPs can recover the costs of any projects that span regulatory periods, but may lose any avoided distribution cost benefits at the regulatory reset.

12 Assuming that impact of demand management projects have not been already factored into demand forecasts.

SKM's recommended approach for an incentive-based regulatory treatment of demand management would require the Tribunal to:

- ensure that the cost projections that underlie the notional revenue requirements for each DNSP exclude the impact of any potential demand management projects (so that DNSPs can retain cost savings)
- introduce a mechanism for correcting for foregone revenue as a result of the demand management project
- not pass through demand management costs, requiring the DNSP to fund these out of any cost savings arising from demand management
- make adjustments for demand management projects that commenced in a prior regulatory period, to allow the DNSP to retain the benefit of any achieved cost savings, and allowing the DNSP to fund demand management costs out of these cost savings.

5 PROPOSED APPROACH FOR 2004/05 TO 2008/09

The Tribunal recognises that neither it nor the DNSPs are working from an established base of knowledge about how demand management projects will affect network operations or the implications they might have for the regulatory framework. It has made its draft decision on the treatment of demand management costs in the context of:

- soft constraints within DNSPs that lead to the favouring of network build solutions over demand management options
- its own limited experience in dealing with the avoided distribution costs associated with demand management projects in its regulatory framework
- a limited market for demand management solutions, which is still in its infancy in NSW but is likely mature and result in the development of innovative demand management solutions to network constraints.

Any mechanism the Tribunal introduces will need to be flexible enough to handle a range of possible demand management solutions, which in turn will have different impacts on network costs depending on structure and demands placed on the DNSP's network.

The Tribunal has carefully considered the issues related to the regulatory treatment of demand management and SKM's report. It proposes to adopt an approach largely in line with SKM's recommendations. This approach includes the following draft decisions:

- the cost building blocks on which DNSPs' notional revenue requirements are based will be established on the basis of pre-demand management cost projections
- DNSPs will be allowed to recover revenue foregone as a result of demand management activities
- the building block costs will exclude demand management costs but there will be a pass through of demand management costs, up to the avoided distribution cost of the project
- the recovery of foregone revenue and demand management costs will be by way of D-factor in the weighted average price cap formula.

5.1 Cost building blocks to be established on pre-DM costs

The Tribunal's draft decision is that the cost projections underlying DNSPs' notional revenue requirements be specified on a pre-demand management basis. That is, these projections should exclude the impact of any demand management projects expected to occur during the 2004-09 regulatory period.

The Tribunal believes it is appropriate for the DNSPs to retain the benefit of demand management-induced costs savings during the 2004-09 regulatory period and its decision will support this outcome.

One of the implications of this draft decision is that Integral Energy's cost building blocks (as laid out in the draft determination and used to calculate the X-factor in its weighted average price cap) will need to be adjusted to reflect its pre-demand management projected expenditure.

Whereas, the other DNSPs developed their projections assuming that demand management has no effect on the capital and operating cost expenditure profiles. Integral Energy assumed that demand management would be able to defer some capital projects. Integral Energy did not explicitly identify the demand management projects expected to bring about this deferral but has based its expenditure profile on its view of the network projects likely to be able to be deferred with demand management.

The approach taken by Integral Energy effectively means that the benefits of avoided distribution costs are transferred to customers. Integral Energy would only retain any cost savings over and above those associated with the demand management already factored into the cost building blocks. Further, Integral Energy would need to achieve its targets for demand management or its realised rate of return will be lower than the WACC allowed by the Tribunal (all other things being equal) because Integral Energy would have to adopt higher cost network build options.

In contrast, the other DNSPs would retain all the benefits of demand management for the length of the regulatory period. This means that even if the other DNSPs fail to meet their targets for demand management, they will still earn a rate of return equivalent to the WACC (other things being equal). Any cost savings through demand management would, in principle, raise their realised rate of return above the allowed WACC.

This differential treatment of DNSPs is not appropriate and inconsistent with the Tribunal's draft decision. The Tribunal therefore proposes that Integral Energy's cost building blocks be adjusted to reflect a 'pre-demand management' expenditure profile, putting it on the same basis as the other DNSPs. As part of the follow-up information request, the Tribunal has asked each DNSP for details of any demand management projects that have been included in the expenditure assumptions and the effect that these projects have on the timing of expenditures. The Tribunal proposes to use this information to adjust the capital and operating expenditures to a 'pre-demand management' basis.

5.2 Foregone revenue to be recovered

The Tribunal's draft decision is that it will allow DNSPs to recover the foregone revenue as a result of lost sales due to demand management.

As shown in Figure 3.2, reductions in sales as a result of demand management can reduce or remove the financial incentive for DNSPs to undertake demand management projects. A reduction in revenue is a financial cost of demand management to the DNSP.[13] But provided the reduction is less than the realised cost saving, the DNSP still receives a financial benefit and therefore has a positive incentive to undertake demand management. If the foregone revenue equals or exceeds the net cost saving, however, the DNSP has no financial incentive to undertake demand management.

[13] It is not an *economic* cost since it is effectively a transfer between DNSPs and customers.

To ensure that DNSPs have sufficient incentive to undertake demand management, SKM recommended that, where the effect of demand management has not been factored into the demand projections, the Tribunal correct for foregone revenue so that:

- projects where the foregone revenue exceeds the distribution cost savings would deliver a positive financial reward to the DNSPs (as opposed to a zero or negative financial return)
- projects where the distribution cost savings exceed the foregone revenue would deliver an increased positive financial reward to the DNSPs.

In deciding whether or not to adopt SKM recommendation on foregone revenue, the Tribunal has weighed the benefits of providing increased incentives for demand management against the impact on customers. If an allowance for foregone revenue were included, this cost would need to be recovered through charges on customers, which would have some distributional impacts across customers. If a demand management project increases energy efficiency, those customers directly affected by it will benefit from lower bills as a result of lower consumption. However, any recovery of the DNSP's foregone revenue associated with the project is likely to be spread across its full customer base, as the DNSP would be allowed to increase general prices. This same effect occurs under the current revenue cap form of regulation.

The Tribunal considers that strong benefits to customers are likely to emerge from the development of an effective market for demand management services. These benefits will accrue over time if DNSPs make greater use of demand management, improving network utilisation and lowering costs. The Tribunal believes that allowing DNSPs to recover foregone revenue in the coming regulatory period, will support the development of the market for demand management and ultimately benefit consumers through lower prices in the future. For this reason, it has decided to allow DNSPs to fully recover foregone revenues in the 2004-09 regulatory period.

The Tribunal considered whether it should allow only partial recovery of foregone revenue. This approach would lessen the impact on customers facing higher prices, but would also reduce the incentives for DNSPs to undertake demand management. However, in allowing the full recovery of foregone revenue, the Tribunal has sought to maximise the incentives for DNSPs to undertake efficient demand management.

Another issue the Tribunal considered is whether the growth projections used in the financial model have factored in the effect of demand management conducted by DNSPs or not. If the effect of demand management projects has already been factored into the growth forecasts then DNSPs would have already been compensated for foregone revenue. This compensation comes about by way of a higher average price as notional revenue requirements are recovered over a smaller consumption base. In this situation, it would be inappropriate for DNSPs to be allowed to recover foregone revenue since they would effectively be recovering it twice from customers. The Tribunal's view is that it would only be appropriate to allow the recovery of foregone revenue where the impact of demand management projects has not been factored into the consumption and demand forecasts.

The Tribunal has indicated that it will be basing the calculation of the X-factor on the growth projections contained in MMA's report.[14] MMA concluded that demand management is unlikely to have a large impact on total energy usage, apart from changes to appliance efficiency. Therefore, it has not made any allowance for specific demand management projects in its forecasts. MMA did, however, factor in the impact of further demand management initiatives, for example, increasing the mandatory energy star ratings of houses.[15] The MMA forecasts therefore incorporate demand management only at a high level and do not specifically target specific network demand management projects undertaken/commissioned by DNSPs for which the foregone revenue correction would apply.

The Tribunal therefore considers that the MMA forecasts, on which the Tribunal's financial modelling is based, exclude the impact of any specific demand management projects that might be undertaken by DNSPs during the 2004-09 regulatory period. In light of this, it considers it appropriate to allow for DNSPs to fully recover foregone revenue as a result of demand management projects.

5.2.1 Calculating foregone revenue

SKM notes that the measurement of foregone revenue due to demand management is difficult, as the impact of demand management activities on the level of energy consumption cannot be separated from the impact of other influences, such as the weather, economic conditions, technology changes and government policies. As a result, this impact will never be known with certainty and any calculation of foregone revenue will be an estimate.[16]

SKM proposes a process for recovering foregone revenue in which DNSPs provide an estimate of lost revenue each year using a 'reasonable' method, and apply to the Tribunal to have this amount added to its regulated revenues through some adjustment mechanism for the following year. SKM notes that the DNSP will need to estimate the size of the demand management impact on various consumption components (energy, demand and capacity components of charges) to estimate the foregone revenue. SKM suggests the following options for estimating the impact on consumption volumes:

- estimating directly from demand management projects implemented
- using avoided distribution costs as a proxy for lost revenues
- correcting for differences between actual and forecast volumes
- correcting volumes if they fall below forecast.

SKM prefers the direct assessment and avoided distribution cost proxy methods.[17] The other two methods assume that the original forecasts are accurate and that the only reason for divergence is the impact of demand management, which is likely to be an unrealistic assumption.

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14 MMA (McLennan Magasanik Associates), *Review of demand forecasts for the 2004 electricity network review*, Draft Report, December 2003.

15 This adjustment was factored in through MMA's choice of 'comfort factor'.

16 SKM, *Avoided distribution costs and congestion pricing for distribution networks in NSW*, November 2003, p. 80.

17 SKM, *Avoided distribution costs and congestion pricing for distribution networks in NSW*, November 2003, p. 8

The direct assessment method involves the DNSP estimating the impact that a particular project has on demand/consumption. SKM notes that DNSPs that currently make payments or provide incentives as part of the implementation of the demand management projects should already be estimating the expected impacts on demand, and then evaluating actual impacts to determine whether the demand management has been effective in reducing demand. The Tribunal believes it would be reasonable to expect that DNSPs' contracts with demand management providers include a performance-based element that includes some measurable impact on consumption. This is the case with Integral Energy's Castle Hill project, where payments to SEDA are contingent on measured reductions in demand.

The avoided distribution cost proxy approach, which was suggested by EnergyAustralia and is based on the assumption that if tariffs are reasonably cost reflective, then revenues should match the cost of supply at the margin. SKM notes that this method is simple and transparent to calculate, using an annualised avoided distribution costs of deferred assets. However, as a proxy measure it will be not be completely accurate due to differences between marginal costs and prices. In addition, it does not differentiate between deferrals achieved through embedded generation (which may not affect revenue) and demand-side measures. Measures such as load shifting may also not affect revenues as they may only affect the timing of sales, not volume of sales[18].

The Tribunal prefers the direct assessment approach. Given the potential problems with using avoided distribution costs as a proxy for foregone revenue, the Tribunal is concerned that, if DNSPs were allowed to choose which approach to apply to calculate their foregone revenue, they may simply pick the approach which gives them the maximum pass through. The Tribunal believes there is merit in requiring the DNSP to demonstrate that volumes have been affected, preferably with reference to quantitative evidence.

However, given that both the Tribunal and DNSPs have limited experience of the type of demand management projects that might occur, it is difficult for the Tribunal to specify a particular approach to calculating foregone revenue. It has therefore decided to leave open the methodology for calculating foregone revenue, allowing the DNSPs to submit their estimates and methodology to it for assessment. But the Tribunal also believes it is appropriate for it to establish a set of broad principles to guide DNSPs in calculating foregone revenue.

These broad principles could include the following:

- there should be a well-defined group of customers whose consumption is impacted by the demand management project
- the link between the demand management project and affected customer should be documented
- estimates should be made with reference to quantitative estimates of reductions in volumes — for example, based on reduction in metered consumption, reductions in number of appliances, hours or time of use of machinery etc.
- estimates may be derived with reference to a sample of affected customers — a full audit of customers is not required.

[18] Some revenue impact may occur depending on whether load is shifted into period with lower charges or not.

The Tribunal seeks comment on these principles and proposes to work with stakeholders to develop an appropriate set of principles.

5.3 Demand management costs will be passed through

The Tribunal's draft decision is that it will allow the pass through of demand management implementation costs, up to the amount of avoided distribution costs. However, these costs will be excluded from the DNSPs' notional revenue requirements, and demand management costs funded from other sources cannot be passed through.

The costs of implementing demand management could include direct costs incurred by DNSPs for demand management projects that they themselves implemented. More likely, the costs incurred will represent payments to demand management service providers to manage and deliver agreed reductions in demand. In the case of Integral Energy's Castle Hill project, SEDA manages the project for Integral Energy — working with customers to reduce demand — in return for a payment for measured reductions in demand. It is reasonable for these costs to be recouped through the DNSPs' revenues.

The Tribunal's draft decisions on how demand management costs will be defined, how they will be incorporated into the regulatory framework, and how the costs of unsuccessful and uncertain demand management projects will be treated are explained below.

5.3.1 Pass through mechanism limited to non-tariff measures

The Tribunal's draft decision is that arrangements for foregone revenue be restricted to non-tariff demand management measures.

Any revenue foregone through tariff related measures such as rebates or interruptibility payments would be recovered through negative prices in the weighted average price cap.

While the definition of demand management costs could include tariff related measures, SKM recommends that generally available price and tariff-only options be considered congestion pricing and therefore not come under this framework. However, it recommends that where a DNSP is more pro-active and negotiates an individual contract with the end user, possibly including performance criteria, this would be classified as demand management and would come under the current framework. Similarly, payments not linked to metered consumption would also be regarded as demand management payments.

In its draft report, the Tribunal has indicated that it will treat tariff-related demand management measures, such as rebates and payments for load reduction, as negative prices for inclusion in the weighted average price cap. This treatment will allow DNSPs to recover the cost of rebates and payments by allowing them to increase other tariffs within the overall constraint of the weighted average price cap. Interruptible tariffs that offer a lower tariff for customers in return for the right for the DNSP to interrupt supply would be treated in a similar manner. DNSPs would be able to raise other tariffs to offset the loss of revenue as a result of the lower tariff being offered to customers.

5.3.2 Incorporating demand management costs into the regulatory framework

SKM recommended that DNSPs fund the costs of demand management out of the cost savings generated. It is the difference between the gross savings and the cost of generating those savings that is the true benefit to the community of the demand management project.[19] If the cost savings generated are not sufficient to justify the cost of the demand management, then the demand management project would not be worthwhile.

The Tribunal agrees, in principle, with SKM's recommendation that demand management implementation costs should be funded out of net cost savings arising from demand management projects. In situations where the deferral benefits accrue within a regulatory period, the costs savings are retained in full by the DNSP and so would be available to the DNSP to cover the demand management costs.

However, this may not be the case where the deferral benefits accrue across regulatory periods — that is, if costs are incurred in one regulatory period but capital expenditure is deferred into subsequent regulatory periods. This is likely to occur toward the end of the regulatory period. The benefit to the DNSP of deferred expenditure will therefore depend on how the expenditure is treated at the subsequent regulatory reset. If building block costs were built up on the basis of the actual timing of expenditure (that is, post demand management), then the benefit derived from the demand management project would be transferred to customers. This could lead to a situation where the financial cost to the DNSP exceeds the financial benefits to it, creating a disincentive for the DNSP to undertake the demand management.

The Tribunal believes that this issue is particularly relevant in the 2004-09 regulatory period as it is likely to take some time for demand management projects to get going.

Ideally, to provide the strongest incentives for demand management going forward, the Tribunal would commit to allowing the DNSPs to keep any distribution cost savings at the next regulatory reset in 2009. In practice, this could be done by committing to allowing capital expenditure in the regulatory period to be included in the building block costs at its pre-demand management profile (as the Tribunal has decided to do in the 2004-09 regulatory period) or allowing an addition to the cost building blocks in the next regulatory period, reflecting the amount of avoided distribution costs. However, whether such an adjustment should be made is an issue for the regulator at the next regulatory reset. The Tribunal is unable to make a commitment that is legally binding on future regulators.

In the absence of a mechanism that guarantees that the carry-forward of the cost savings for DNSPs into the next regulatory period, the incentives for a DNSP to undertake demand management will be influenced by their expectation of how this deferred capital expenditure will be treated at the next regulatory reset. The more likely it considers that the benefits of demand management will be passed onto customers, the lower the incentive for it to undertake demand management on projects that span regulatory periods.

The Tribunal believes that this timing issue represents a significant regulatory barrier to demand management in the short term, particularly in light of the emergent nature of the

[19] Ignoring any benefits that accrue from the demand management project outside the network business, for example, any greenhouse gas benefits.

market for demand management solutions. The Tribunal explored options for bringing forward the distribution costs savings by including them in the allowance in the current regulatory period, but found this approach would be administratively complex and costly and would likely to lead to distortions in prices in the current regulatory period. The Tribunal's draft decision is therefore aimed at neutralising the financial disincentives to DNSPs by allowing them to recover demand management implementation costs (and by compensating them for any revenue lost during the current regulatory period).

The Tribunal recognises that its draft decision over-compensates DNSPs for demand management implementation costs in situations where the deferral benefits created in the 2004-09 regulatory period are sufficient to cover demand management costs. It acknowledges that this has certain disadvantages in terms of the signals sent for efficient demand management. However, it has weighed these disadvantages against the potential benefits from supporting demand management where the benefits accrue across regulatory periods and decided to err on the side of supporting the development of demand management for long term gains.

In principle, it could be possible to limit the pass through of demand management costs to those situations where the majority of benefits accrue outside the 2004-09 regulatory period. The Tribunal gave serious consideration to this option but was concerned that such an approach would be complex and less transparent since it would allow demand management cost to be passed through for some projects but not others. It therefore favoured a uniform pass through of costs. This is consistent with the treatment of demand management costs in the current regulatory period.

The Tribunal believes that it is appropriate to limit the pass through of demand management costs to a maximum of the amount of avoided distribution costs. As noted earlier, it considers its regulatory treatment should support only efficient demand management projects — that is, where a net cost saving is generated. The Tribunal does not believe it is appropriate that customers should be required to fund demand management costs in excess of the avoided distribution costs.

In applying for the pass through of demand management costs, DNSPs will be required to demonstrate that these costs are less than or equal to the annualised avoided distribution costs as a result of the demand management project. The Tribunal does not believe this to be an onerous requirement on DNSPs, as it would be expected to be part of the standard processes for developing a business case for demand management options.

To reduce uncertainty, the Tribunal will need to develop broad principles to govern the recovery process. These include addressing such issues as:

- what constitutes or is defined as demand management expenditure (for example, loss minimisation practices are an expense that the DNSP would otherwise be expected to undertake for efficiency purposes)
- the treatment of demand management capital expenditure — the pass through of the return of and on this expenditure rather than expenditure itself
- the calculation of avoided distribution costs, including the time period over which the avoided distribution costs are calculated.

Demand management costs will be excluded from the notional revenue requirements

One of the implications of this draft decision is that the cost building blocks/notional revenue requirements should not include an allowance for demand management costs. Allowing the pass through of these costs and including them in the notional revenue requirements would lead to a double counting of these costs.

Currently, EnergyAustralia and Integral Energy both have included allowances for capital and operating costs relating to demand management in their cost building. Under the Tribunal's approach, these allowances would be removed from the cost building blocks that underlie these DNSPs' notional revenue requirements.

Demand management costs funded through other sources will not be passed through

Demand management costs that have been funded through other sources will not be passed through. The Tribunal does not believe it appropriate for customers to bear costs that have already been paid for from other sources such as the CBD demand management fund or the Government's proposed demand management fund.

5.3.3 Treating the costs of unsuccessful and uncertain demand management projects

The Tribunal's draft decision is that it will not underwrite risky demand management projects nor allow the pass through of 'learning-by-doing'-type costs.

SKM notes that DNSPs have had little experience in the application of demand management to deferring network congestion, and that considerable learning and capability development is required for demand management to be effective in reducing network costs. It suggests that the DNSPs face risks associated with uncertainty regarding:

- technologies and performance
- commercial arrangements that can underpin demand management measures
- potential response to demand management
- the timing and size of incentive necessary to achieve a given penetration of demand management.[20]

SKM believes that these risks may act to further dissuade DNSPs from implementing demand management options, even if issues such as foregone revenue are addressed. Its report recommended that the Tribunal make available short-term additional risk protection and underwrite some learning and development costs, in order for more DM projects to cross the threshold. Under SKM's proposal, DNSPs could approach the Tribunal with proposals for demand management initiatives in areas where demand management is expected to be cost effective. The proposal would outline the proposed measures and expected costs and benefits. Underwriting the proposal would involve the Tribunal agreeing to pass through demand management costs in excess of avoided distribution costs. End-users would effectively pay some of the costs of developing demand management options.

[20] SKM, *Avoided distribution costs and congestion pricing for distribution networks in NSW*, November 2003, p. 38.

In response to SKM's draft report, EnergyAustralia proposed that the Tribunal allow the pass through of the costs of what it calls 'learning by doing' demand management projects. These learning by doing projects tend to be experimental or trial projects where the outcomes in terms of impact on demand and the deferral of expenditures tend to be uncertain or diffuse. Diffuse benefits could be general system-wide reductions in demand, which may reduce demand across the network that may affect capital expenditures in ways that are difficult to predict. For these projects, the net cost savings are unpredictable and may not be incurred until many years into the future. For these reasons, EnergyAustralia argue that the costs of these projects should be recovered from customers. Its process would entail the DNSP nominating, prior to commencement of the project, whether projects would be classified learning by doing and subject to cost-recovery.

Under the Tribunal's draft decision, if a demand management project is expected to deliver net costs savings — that is, avoided distribution costs in excess of the demand management costs — then DNSPs would be able to pass through demand management costs in full. The Tribunal believes that this approach supports the selection of efficient demand management projects. It does not favour underwriting demand management project costs as this reduces the incentives for DNSPs to minimise costs or to write contracts with demand management providers that limit potential risks of cost overruns. Further, its draft decision allows DNSPs to recover demand management costs while retaining the full benefit of avoided distribution costs. The Tribunal believes that this represents a generous treatment of demand management costs that provides for the possibility of higher than expected costs as DNSPs develop their expertise in dealing with demand management options. This approach also reduces the risk to DNSPs of lower-than-expected deferral benefits.

The Tribunal does not favour EnergyAustralia's proposal for cost recovery for 'learning by doing'-type projects. It does not believe it is appropriate to fund (via charges on customers) 'learning or development' costs incurred by DNSPs — this would seem a more appropriate role for government — for example, the proposed demand management fund. The Tribunal notes that its draft decision allows for the recovery of costs associated with all demand management projects, including 'learning by doing' projects, up to the avoided distribution costs generated by these projects—it does not believe it is appropriate to allow cost recovery beyond this.

5.4 Foregone revenue and demand management costs to be recovered through a D-factor

The Tribunal's draft decision is to allow foregone revenue and demand management costs to be recovered via a D-factor, which is added to the weighted average price cap formula.

The advantages of this approach and how it would be implemented are discussed below.

5.4.1 Advantages of the D-factor approach

Once the size of any adjustment to a DNSP's revenues required to recover foregone revenue and demand management costs is decided, it could be incorporated in its network tariffs either through the DUOS tariffs in the weighted average price cap formula, or by allowing direct pass-through in the 'transmission cost recovery tariffs'.

Under the weighted average price cap, it is not possible to make adjustments to the notional revenue requirements in the same way that the Aggregate Annual Revenue Requirement is adjusted in the current regulatory period under the revenue cap. Any adjustment would need to be made directly to the weighted average price cap formula, which affects the rate of change in prices. For example, it would be possible to add a 'D-factor' to this formula. The D-factor would increase the amount by which DNSPs are permitted to increase their prices, on average. The D-factor would be calculated each year as part of the annual price approval process and would be calibrated to recover an amount to cover foregone revenue and demand management costs, as approved by the Tribunal.

An advantage of the D-factor approach is that it provides a transparent signal to the industry and other stakeholders about the treatment of demand management costs in the regulatory framework. However, with this approach the Tribunal will need to calculate a value for the D-factor at each annual price change.

Alternatively, if the adjustment is incorporated in the transmission recovery arrangements, the full amount of the pass-through will be recovered by the DNSP either immediately, or over time, through the transmission overs/unders account. This approach is simpler from an administrative point of view. However, its disadvantage is that the amount to be passed through will affect the level of the 'transmission cost recovery tariffs' and not the DUOS tariffs. This could lead to some distortion in the balance between DUOS and TUOS tariff components of network tariffs. It may also be less transparent in terms of signalling how the regulatory framework addresses demand management issues. Therefore, the Tribunal favours recovery via a D-factor.

5.4.2 How the D-factor would work

The D-factor would be added to the weighted average price cap control formula (on the right hand side) and would represent the allowed percentage increase in prices necessary for the DNSP to recoup its foregone revenue and pass through demand management costs. The Tribunal will approve the D-factor each year as part of the annual price approval process. The D-factor would be calibrated using the following formula.

$$D_{t+1} = \frac{Foregone\,revenue_{t-1} + DM\,Cost\,Pass\,Through_{t-1}}{Smoothed\,revenue\,requirement_{t+1} - Foregone\,revenue_{t-1} - DM\,Cost\,Pass\,Through_{t-1}}$$

where;

D_{t+1} is the D-factor to be included in the price control formula for year t+1

Foregone revenue$_{t-1}$ is the amount approved by the Tribunal for recovery as foregone revenue in year t+1 (reflecting the revenue foregone in year t-1)

DM Cost Pass Through $_{t-1}$ is the amount approved by the Tribunal for recovery of demand management implementation costs in year t+1 (reflecting the revenue foregone in year t-1)

Smoothed revenue requirement$_{t+1}$ is the smoothed revenue requirement for year t+1, as estimated by the Tribunal in its Determination[21]

[21] This information was detailed in table 9 of the financial appendices in the Tribunal's draft determination.

The Tribunal's proposed process for recouping foregone revenue and demand management costs would be as follows:

- a DNSP implements a demand management project
- as part of the annual pricing proposal its submits to the Tribunal for approval, the DNSP provides:
  - its estimate of the amount of foregone revenue in the most recently completed financial year and the methodology for arriving at that estimate
  - the demand management costs incurred in the most recently completed financial year
  - its estimate of the annualised avoided distribution cost for each project for which pass through of demand management costs is being claimed.
- the Tribunal reviews the foregone revenue and demand management cost estimates and, if acceptable, approves the amount to be incorporated in prices, via the D-factor for the upcoming financial year.

This approach means that foregone revenue and demand management costs will be recouped on a retrospective basis, with a two-year lag. For example, costs and revenue foregone in 2004/05 would be recovered through prices in 2006/07. This lag is necessary as prices for 2005/06 have to be approved by the Tribunal before the end of the 2004/05. The demand management costs and foregone revenue estimate will be carried forward at the DNSP's weighted average cost of capital. The Tribunal expects that demand management costs and foregone revenue occurring in 2007/08 and 2008/09 would be recouped in the following regulatory period, via a correction factor as allowed for under the clause 6.10.5(d)(8) of the Code.

In situations where the demand management project has brought about reductions in revenue that extend beyond the end of the demand management project, the DNSP may apply for the recoupment of foregone revenue each year after the end of the project up until the end of the regulatory period. Allowances would end at the regulatory period, as any impact on sales volumes as a result of demand management should be incorporated in demand forecasts for the subsequent regulatory period.

The estimate of annualised avoided distribution costs used to cap the pass through of demand management costs will be held constant in real terms at its initial value. The initial value will be the value submitted in the first year for which pass through of that project's cost is claimed.

5.5 Beyond the 2004-09 regulatory period

The Tribunal considers that its draft decision on the treatment of demand management, represents a generous treatment of these activities in the regulatory framework. It considers that this treatment is justified in light of the apparent barriers to greater up-take of demand management solutions in supplying network services and the emergent market for demand management solutions.

The Tribunal supports SKM's view that over the medium to longer term, as demand management becomes 'business as usual', it would be more appropriate to treatment demand management costs in the same manner as other costs. In this situation, it would be

expected that DNSPs' forward-looking expenditure profiles put forward at the regulatory reset would incorporate an appropriate mix of demand management and network build solutions, representing the least cost approach to meeting expected demand. Notional revenue requirements for DNSPs would reflect this lower cost mix of network solutions and it would not be appropriate for an on-going pass-through of demand management costs or foregone revenue. The Tribunal expects that this will be a key issue at the next regulatory reset in 2009.

6 CASE STUDY: INTEGRAL ENERGY'S CASTLE HILL PROJECT

Castle Hill is a suburb in Integral Energy's supply area. In the absence of demand management, Integral Energy estimates that growth in that area will push peak demand beyond acceptable network capacity limits, requiring network augmentation at a cost of $3.2 million by 2005. It has engaged the Sustainable Energy Development Authority (SEDA) to identify and implement demand management options that can defer network investment for up to three years. SEDA has identified a number of possible demand management projects focussing on efficiency and control improvements with major-end users. SEDA is contracted by Integral Energy to deliver demand reductions, with payment contingent on reductions being realised.

This case study illustrates how the Tribunal's proposed framework will impact on Integral Energy's revenues over the 2004-09 regulatory period.

6.1 Key assumptions

Table 6.1 illustrates the expected profile of capital and operating expenditures, under 'with demand management' and 'without demand management' scenarios and shows the expected demand management implementation costs. Capital and operating costs are estimated to be deferred by 3 years as a result of demand management. Operating costs are estimated to represent 2 per cent of (undepreciated) capital expenditure, in line with SKM's assumptions. Demand management implementation costs of $300,000 are assumed to be paid at the end of the demand management project, following its successful implementation.[22]

Table 6.1 Assumed profile of costs

Cost item	Financial year ending					
	2004	**2005**	**2006**	**2007**	**2008**	**2009**
	$'000	$'000	$'000	$'000	$'000	$'000
Without DM						
Capital expenditure	2,000	1,200	-	-	-	-
Operating expenditure	40	64	64	64	64	64
With DM						
Capital expenditure	-	-	-	2,000	1,200	-
Operating expenditure	-	-	-	40	64	64
DM implementation						
Costs	-	-	300	-	-	-

The analysis also assumes:

- a real pre-tax weighted average cost of capital (WACC) of 6.8 per cent
- the network asset has a life of 50 years so depreciation occurs at a rate of 2 per cent per year.

[22] Note that as it is a performance based contract, payments may occur annually over the three year period and not necessarily in one lump sum as assumed here.

To match the assumptions underlying the Tribunal's building block model, half of any capital expenditure is assumed to occur at the beginning of the financial year and half at the end of the year. For illustrative purposes, the analysis is conducted in real terms, ignoring the impact of inflation. The Tribunal's financial model is specified in nominal terms and so the actual adjustment made to Integral Energy's notional revenue requirements would reflect expected inflation over the regulatory period.

6.1.1 Impact on notional revenue requirement

The cost projections underlying the notional revenue requirements in the Tribunal's draft report assume that the Castle Hill project is successful and expenditure is deferred till 2007. Table 6.2 illustrates the notional revenue requirements associated with Castle Hill expenditures, assuming that capital and operating expenditure are recorded when they are expected to occur. Table 6.2 also assumes that Integral Energy receives an allowance in the cost building blocks for the expected cost of demand management ($300 000). Over, the regulatory period, Integral Energy would receive $837,000 in net present value terms associated with the Castle Hill expenditures if it is assumed that these are included in the building blocks at their actual timing.

Table 6.2 Notional revenue requirements assuming DM is successful

Notional revenue requirements	Financial year ending				
	2005	2006	2007	2008	2009
	$'000	$'000	$'000	$'000	$'000
Rate of return[1]	-	-	68	175	213
Depreciation[1]	-	-	20	52	64
Operating expenditure	-	-	40	64	64
DM costs	-	300	-	-	-
Total building block allowance	-	300	128	291	341
Net present value of revenues	$837				

Note: Rate of return and depreciation calculated on assumption that half capital expenditure occurs at start of year and half at year end.

Table 6.3 illustrates the impact of the Tribunal's proposed treatment of the demand management project on Integral Energy's notional revenue requirements. In this situation, capital and operating expenditure is assumed to occur at its pre-demand management profile — that is, it is not deferred. This notionally brings forward the expenditure from the unadjusted, cost-recovery scenario in Table 6.2 and means that Integral Energy receives a higher cost allowance earlier on.[23] Under the proposed approach, Integral Energy would also be able to recoup demand management costs of $300,000. In net present value terms, Integral Energy would receive $1.6 million as its notional revenue requirement plus revenue from pass through of demand management costs.

The difference between the Tribunal's proposed approach and the cost recovery approach shown in Table 6.2 is $764,000 in net present value terms. This value represents the net incentive to under take this demand management project offered to Integral Energy under the Tribunal's proposed approach.

[23] This adjustment is made to provide the incentive for demand management — in reality, capital expenditure is deferred.

Table 6.3 Notional revenue requirements under Tribunal's proposed approach

Notional revenue requirements	Financial year ending				
	2005	2006	2007	2008	2009
	$'000	$'000	$'000	$'000	$'000
Rate of return	175	213	208	204	200
Depreciation	52	64	64	64	64
Operating expenditure	64	64	64	64	64
Total building block allowance	291	341	336	332	328
DM costs[1]	-	300	-	-	-
Total revenues received	291	641	336	332	328
Net present value of revenues	$1602				

Note:
1. DM costs are a pass through amount, not included in building block allowance.

6.2 Impact of foregone revenue

SKM's estimates of foregone revenue are presented in Table 6.4. These are indicative estimates only, and have not been verified by the Tribunal. Under the Tribunal's proposed framework, Integral Energy would apply annually to the Tribunal for the recovery of this foregone revenue. The actual amounts to be recovered will depend on the annual estimates provided by Integral Energy and verified by the Tribunal.

Based on the SKM estimates, the value of foregone revenue passed through would be between $71,000 and $142,000 a year for the Castle Hill project.

Table 6.4 Estimates of foregone revenue

Notional revenue requirements	Financial year ending				
	2005	2006	2007	2008	2009
	$'000	$'000	$'000	$'000	$'000
Estimate of foregone revenue	71	142	121	101	84

Source: SKM estimates.