



**Inquiry into the Role of Demand Management and other Options  
in the Provision of Energy Services (Matter No 01/257)**

**Independent Pricing and Regulatory Tribunal**

**TransGrid Submission on IPART's Interim Report**

**12 June 2002**



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## **1. Introduction**

TransGrid compliments IPART on a comprehensive and wide ranging discussion of many of the issues relating to demand management (DM) and Distributed Generation (DG).

TransGrid's focus on DM and DG issues is that of a TNSP with planning responsibilities under the National Electricity Code and accountabilities for adequate planning of transmission networks in NSW. Thus these comments relate to certain aspects of Section 4 of the interim report, with a particular focus on planning issues.

### **Equal Treatment of Network, DG and DM Options**

TransGrid supports the principle that network, DM and DG augmentation options should all be given equal consideration. Indeed, the National Electricity Code makes it clear that this is obligatory for all Network Service Providers with planning responsibilities. In support of this the ACCC, in its determination on the recent "Network and Distributed Resources" Code changes, included a requirement to improve the symmetry of the treatment of all types of augmentation in the Code.

### **Inclusion of Economic, Environmental and Social Benefits**

TransGrid agrees with IPART regarding the potential economic, environmental and social benefits of DM. One problem that NSPs face when attempting to objectively compare network, DM and LG options is whether any or all of these benefits should, or should not, be counted in assessing an option's relative merits vis-à-vis the ACCC's regulatory test.

For example, the regulatory test provides guidelines on how environmental costs/benefits are to be counted but does not make a determination on any specific environmental issue. What NSPs presumably have to do then, when considering whether or not to include the costs/benefits of a particular environmental effect, say CO<sub>2</sub> emissions, is to consult with various stakeholders and use the feedback in deciding whether such costs and benefits are to be counted and, if so, how they are calculated. If the range of views of stakeholders varies widely and the value of the benefits are crucial in determining the relative cost effectiveness of options then the NSP will always be open to the criticism of bias in coming to a particular decision. In any event any specific decision is ultimately a social one and not necessarily one that closely relates to an NSP's primary role of planning networks.

A different problem arises when comparing the relative merits of options that have a large component of social benefit, for example energy efficiency DM options. The Code requires that NSPs establish a "need" for an augmentation of their networks and compare the cost effectiveness of options in meeting this "need". The problem arises that a large portion of the benefits of an energy efficiency DM option may not contribute in any way to meeting the "need" although they have to be counted in calculating its cost effectiveness. The benefits that do not meet the "need" are, although a real social benefit, miss-aligned from their intended objective ie meeting the "need". The problem is compounded by the fact that the suitability of options depends on exactly how "need" is defined, that is, the exact way that planning standards are defined.

## Planning standards

Careful consideration of planning standards may be crucial to enable NSPs to compare the economics of differing options in an appropriate manner. TransGrid notes the MEU's recommendation that IPART consider whether DNSP planning standards are appropriate. This topic is a complex one and TransGrid believes that a separate or ongoing review may be undertaken. As the Jurisdictional Planning Body for NSW TransGrid would be willing to participate in such a review.

TransGrid notes numerous references in IPART's report to deterministic N-1 reliability criteria. TransGrid uses such criteria as just one aspect of a more holistic planning approach and encourages their use in appropriate circumstances. However, it should not be inferred that N-1 criteria is the only planning approach that is used.

By way of example, TransGrid publishes a summary of its planning approach in its Annual Planning Statement. The current Statement is available on TransGrid's web site.

## Lead Times, Project Risks and Accountability

On p 41 of the report IPART notes, in support of an assertion regarding "soft constraints" to network driven DM that:

"At the Experts Forum in November, the point was made that DNSPs perceive DM options as having higher levels of risk and lower reliability than network solutions."

TransGrid believes that this would not constitute a "soft constraint" to the extent that a DNSP's assessment of different options is based on legitimate risk assessment principles. It would seem reasonable that such legitimate risk assessments would lead to the conclusion that projects have lower risks if they have, inter alia:

- Short or reliable lead times;
- Proven technology; and
- Simplicity.

In fact network service providers who, are responsible for considering all options on an equal footing and are accountable for planning "failures", have an obligation to undertake these risk assessments.

The following excerpts from the report appear contrary to these principles and may need to be reviewed:

For example, on p 39 the report asserts:

"Given the current lack of experience with DM and uncertainty about its impact on reliability, network planners may need to extend their planning horizons to ensure they allow sufficient time to effectively identify and assess alternatives to network augmentation."

And on p41

"For example, using DM to solve a large-scale system problem would usually require an aggregation of small-scale projects. Assessing and planning multiple projects can take much longer than planning one large project, and DNSP planning horizons may not allow sufficient time to choose these options."

The report also quotes (on p 47) the DM Working Group has having recommended that DM demand reduction parameters to include the ability to:

"Demonstrate that the DM option will be delivered on time (and according to a timeline that allows the distribution company sufficient time to switch to a supply-side option should the DM option timelines slip)."

TransGrid would conclude, on the basis of IPART's presentation, that this so-called "soft constraint" is not demonstrable. However, TransGrid accepts that immature markets or technologies need to be encouraged and fully supports, for example, pilot projects that may be undertaken "in parallel" with recommended "non-DM" options.

### **Possible Regulatory Conflicts**

TransGrid notes that there may be a potential for IPART's proposals to create regulatory conflicts for DNSPs.

For example, DNSPs, must under the National Electricity Code, apply the regulatory test to options. The test currently requires a whole of NEM market benefit to be maximised. This form of the regulatory test implies that prices to end-use customers are not a measure that is to be optimised. The East Cape suggestion (in Section 4.4 p 43) that “pricing should form an integral part of DNSP network planning and development” has the potential to conflict with this requirement.

It should be noted that the regulatory test is currently being reviewed by the ACCC.

### **Network Pricing**

#### **Encourage trials of congestion pricing**

TransGrid notes the Tribunal's proposals that DNSPs undertake trials of locational and congestion pricing. Recent changes in transmission pricing will support locational pricing.

From 1 July 2002, TransGrid's network prices will be set on the basis of the rules in Chapter 6 of the National Electricity Code. The prices for 2002/03 are available on TransGrid's website ([http://www.transgrid.com.au/publications/pricelist\\_2002-3.pdf](http://www.transgrid.com.au/publications/pricelist_2002-3.pdf)). This means that separate prices are set for each connection point rather than average prices across each distributor. Locational prices, based on identified connection costs and reflecting the customer's usage of the integrated transmission network are applied at each connection point.

DNSPs therefore will see locational price signals through their TUOS charges. The Code requires that DNSPs recover TUOS usage charges, from those distribution customers that have appropriate metering, in a way that preserves the location and time signals (Clause 6.10.2(b)(4)).

The transmission prices are locational – based on CRNP methodology as the Code requires. They will not signal transmission congestion.

It is noted that, in practical terms, it is impossible to have network pricing that gives all the “right” signals.

The Tribunal may also note that TransGrid has elected to modify the demand price charged to its customers. Part of the usage charge is to be recovered through a demand price based on the maximum half hourly demand each month. This is intended to be a simpler charge for distributors to pass through to customers than the former semi-fixed demand charge. It will also provide distributors and customers with a more responsive demand management signal. Any reduction in peak demand each month will immediately translate into a reduced charge.

#### **Clarify Treatment of Distributed Generation and Avoided TUOS**

TransGrid notes that the Tribunal intends to set out a methodology for pass through of avoided TUOS in a schedule to the Pricing Principles and Methodologies. The 1999 calculation for Integral is given as an example.

As TransGrid has pointed out, the calculation will need to be modified in future to reflect the changes in transmission pricing to apply from 1 July 2002, although the same principles could apply. It should also be noted that transmission prices must be fully re-calculated each year, rather than simply adjusted with scaling factors as has been the case in recent years.

The Tribunal might use the following comments as background in developing the methodology:

Transmission charge	Comment on pass through of saving
Exit/entry charges	<p>An annual fixed charge related to the cost of TransGrid connection assets involved. In some cases there could be an argument that a DM or embedded generation project would avoid the need for new transmission connection assets, but this may be unusual.</p>
Common service charge	<p>A standard, postage-stamp rate is set which applies to all connection points.</p> <p>This is normally charged to distributors based on their total energy usage in the equivalent period two years previously. Thus, no saving would be seen by the distributor for two years.</p> <p>After two years, the distributor would see a saving proportional to the reduction in total energy taken at the particular connection point.</p> <p>Note that the reduced energy usage would also be incorporated into TransGrid's annual setting of the common service rate. That is, if nothing else changed, the standard rate would rise slightly. Therefore, multiplying the standard rate by the reduction in total energy arising from the DM project would slightly exaggerate the actual saving to the distributor.</p>
General charge	As for the common service charge
Usage charge Energy price	<p>For 2002-03, TransGrid has set energy prices based on peak and shoulder energy use in the most recent financial year for which we have full data (2000-01). TransGrid intends to review the structure of its usage prices and may well change them in future years.</p> <p>For the first year that a DM project is in place, there will be a direct saving to the distributor calculated by multiplying the energy rate by the reduction in peak and shoulder period energy use at the connection point. This is similar to the 1999 Integral example.</p> <p>For the following year, TransGrid would normally use energy data from the last complete financial year in setting rates. Accordingly, the energy price at the connection point would not reflect the reduction in energy use and the direct saving could be calculated in the same way as in the first year.</p> <p>In the year following that, TransGrid's price calculations would take account of the reduced energy use at the connection point. The change would be recognised both in the modelling of load flows and then in the setting of prices to collect the calculated usage revenue at that connection point. The overall effect is not easily predicted but could normally be expected to result in an increase in the cents/kWh rate at that</p>

Transmission charge	Comment on pass through of saving
	<p>connection point. The amount of that increase would, however, be limited by the 2% relative change rule in clause 6.5.5 of the Code (while that rule remains).</p> <p>The actual saving to the distributor therefore becomes rather complicated to calculate and the Tribunal may wish to consider a simplified approach.</p>
Usage charge Demand price	<p>For 2002-03, TransGrid has set demand prices based on the average monthly maximum half hourly demands in 2000-01. The price set is applied to the maximum half hourly demand in each month.</p> <p>For the first year that a DM project is in place, there may be a direct saving to the distributor calculated by multiplying the demand rate by the reduction in maximum demand at the connection point. This is similar to the 1999 Integral example. This will also apply for the following financial year.</p> <p>However, it is important to note that the demand price is based on a single peak demand each month. If it happens that the DM action or embedded generator is not contributing at the time of peak demand, there will be no saving to the distributor.</p> <p>For the second financial year after the DM project starts, TransGrid's price calculations would take account of the reduced demand at the connection point, as for the energy price. The overall effect is not easily predicted but could well mean an increase in the \$/kW rate at that connection point. The amount of that increase would, again, be limited by the 2% relative change rule.</p> <p>Once again, the actual saving to the distributor therefore becomes rather complicated to calculate and the Tribunal may need to consider a simplified approach.</p>

It is pointed out that TransGrid's structure of usage prices for 2002-03 (50/50 energy and demand) is an interim measure. The Code gives TransGrid some discretion in the structure of usage prices within the requirements of Clause 6.5.4 of the Code. TransGrid intends to undertake analysis of various investment drivers and expects that it will make changes to the structure of prices over the next two years to better reflect these drivers. The methodology developed by the Tribunal for pass through of avoided TUOS savings by distributors will need to be sufficiently flexible to cope with such changes.

TransGrid hopes that the above comments are helpful and looks forward to contributing further to this Inquiry.