A4.1 Demand Management Initiatives and Options

NSW Demand Management Code of Practice and the D-Factor

The NSW Electricity Supply Act 1995 requires distribution network service providers (DNSPs) to investigate and report on demand management strategies when it “would be reasonable to expect that it would be cost-effective to avoid or postpone the expansion [of a distribution system] by implementing such strategies”. The NSW Demand Management Code of Practice (‘the Code’) provides guidance to DNSPs in meeting this requirement.

The Code is part of the framework for the economic regulation of NSW electricity distribution networks administered by IPART.

In June 2004, IPART issued its NSW Electricity Distribution Pricing 2004-05 to 2008-09 Final Determination and Final Report. A key component of the Determination was the introduction of a number of incentives to promote network demand management. As part of its Determination, IPART introduced a ‘D-Factor’ into the weighted average price cap control formula. This allows DNSPs to recover:

- Approved non-tariff-based demand management implementation costs, up to a maximum value equivalent to the expected avoided distribution costs (as defined in the determination)
- Approved tariff-based demand management implementation costs
- Approved revenue foregone as a result of non-tariff based demand management activities.

IPART’s demand management incentives aim to reduce the ‘peakiness’ of electricity demand in order to improve the utilisation of DNSPs’ assets and lower their capital expenditure.

According to IPART, the Determination provides relatively generous incentives to DNSPs to undertake demand management. IPART considers that this level of incentive is required, at least in the short-term, to help overcome the barriers to greater use of demand management and to support the emergent market for these solutions.

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1 Electricity Supply Act 1995 (NSW), Schedule 2, s6(5)
IPART requires DNSPs to submit information demonstrating how the demand management projects they have implemented reduce network expenditure. These projects should reduce electricity demand at peak times to defer the need for network augmentation. The DNSPs must demonstrate that their demand management implementation costs are less than or equal to the avoided distribution costs before it can pass through any costs to customers.

The framework for the D-factor demand management program is expected to change with the transfer of economic regulation of the NSW distribution network service providers to the new national governance arrangements.

The Australian Energy Regulator, the new national energy market regulator, will be required to develop and publish a demand management incentive scheme to provide incentives for distribution companies to maintain and improve efficient performance. The details of this incentive scheme are still to be determined.

**Savings to date and future projections**

The DNSPs provide information to IPART in relation to the D-Factor on a commercial-in-confidence basis. As a result, it is difficult to measure the impact of the D-Factor to date. Anecdotal evidence suggests that although there was a positive response to the D-Factor in its first year of operation (2004-05), investment in demand management by the DNSPs decreased in the second year (2005-06).

IPART is due to release a report in late 2007 on the D-Factor and an assessment of the first two years of its operation. The report is expected to provide more detail on its impact on demand management and, in turn, on the overall demand for electricity.

Despite the lack of formal data, there is evidence that DNSPs have invested in demand management programs. For example, in August 2006, Integral Energy had approximately 15 demand management projects under consideration. Further information can be found at [www.ipart.nsw.gov.au](http://www.ipart.nsw.gov.au).

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Greenhouse impacts of demand management

Demand management projects aim to shift demand from peak periods to off-peak periods. As such, they provide financial benefits from reduced infrastructure needs but they do not necessarily reduce overall energy consumption.

Baseload electricity in NSW is generally provided by coal-fired generation. Peaking power is increasingly by lower emission forms of generation such as natural gas. Demand management programs, which shift demand from peak periods to non-peak periods therefore, may have the effect of increasing emissions of greenhouse gases.3

Facilitating demand-side measures through the National Electricity Rules

An option raised in the submissions to the Inquiry is for Governments to take action towards encouraging voluntary and autonomous demand management in the National Energy Market.

An example of such activity is provided by Energy Response Pty Ltd, a demand-side response (DSR) aggregator, in its submission to the Inquiry. Energy Response reports that it can offer at least 300MW of firm DSR capacity in New South Wales almost immediately, with about half of this available within four hours notice and at a fraction of the cost of new peaking generation capacity. It is reported that an active DSR program in the NEM can achieve efficiency benefits of 20 per cent and end-users who participate in the programs directly benefit through payments that offset the cost of their electricity.

The Inquiry notes that the Ministerial Council on Energy (MCE), in conjunction with the Australian Energy market Commission (AEMC), is currently undertaking a large body of work related to demand-side response.

The reform work is focusing on a number of provisions of the National Electricity Rules where existing arrangements may explicitly or inadvertently deter or prevent DSR and options for simulating greater levels of DSR in the NEM. This work is examining opportunities for more demand-side response for both distribution and retail activities.

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3 That said, there is some evidence that measures aimed at enhancing demand management can also result in lower electricity consumption. For example, in its submission to the Inquiry, EnergyAustralia reports that its introduction of smart meters and time of use (ToU) tariffs to small business customers has had the following results (page 22). ToU customers used, on average, 1 per cent less electricity in peak/shoulder periods than the non-ToU customers, and 1 per cent less electricity overall that non-ToU customers.
The outcomes of this work will inform the need for changes to the regulatory arrangements for the NEM, including possible amendments to the National Electricity Rules (NER). The NSW Government is an active participant in the reform process. This also relies heavily on consultation with industry and end-users groups.