

Inquiry into the Role of Demand Management and Other Options in the Provision of Energy Services – Interim Report

EnergyAustralia's Comments to IPART

12 June 2002

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1. EXECUTIVE SUMMARY

EnergyAustralia is pleased to provide these comments in response to the release of IPART's *Inquiry into the Role of Demand Management and Other Options in the Provision of Energy Services – Interim Report.*

EnergyAustralia commends IPART on the progress in has made in clarifying and improving the level of debate on Demand Management (DM) since receiving its reference from the Premier (under s12A of the IPART Act) in March 2001. In particular, the categorisation of network, environmental and wholesale market driven issues provides a clearer framework than has previously been the case.

EnergyAustralia supports demand management, distributed generation and other nontraditional energy service options where they are an economic means of achieving cost or environmental outcomes. We believe that, subject to detailed understanding of implementation proposals, the majority of recommendations complement rather than compete with both existing Government initiatives (such as retail licence compliance) and the internal direction of EnergyAustralia initiatives. EnergyAustralia sees the Report as an important step in the ongoing process of developing DM options.

The most positive encouragement to developing durable demand management initiatives will be through price-based initiatives and commercial incentives. Hence, EnergyAustralia supports the recent State Government changes to Greenhouse compliance licence requirements, which were also covered in the Report. This is a significant change to the commercial viability of environmental drivers for DM and will have far reaching impacts in the near term.

EnergyAustralia is optimistic about extended use of viable network DM options and supports the Report's proposals for both the removal of barriers to DM and the investment in DM trials, skill development and knowledge creation in the immediate future. Intermediate "learn by doing" steps are still required to provide the basis for the transformation of the market for network DM into one in which price based commercial drivers within the market can identify and support appropriate options.

In responding to the Report however, we would wish to raise our concerns over the robustness of data underpinning key sections of the analysis. Much of the quantitative content of the Report relies on data provided by the Sustainable Energy Development Authority (SEDA). EnergyAustralia believes that the Report would benefit substantially from a peer review of the robustness of this data. This would increase the credibility of data on the magnitude of available opportunities and provide a sounder basis for practical policy making. EnergyAustralia supports greater use of DM options, however the general underestimation of the costs associated with many of the proposed technologies has led to an overestimation of the extent to which their wider adoption would be economically efficient. This in turn may lead to an unrealistic perception that, once systemic inefficiencies and barriers are overcome, a larger range and number of DM options will rapidly become viable than may realistically be expected.

The framework provided by the Report reflects the key themes in demand management: Environmental issues through energy conservation and substitutions; capital efficiency issues through deferral or avoidance of network augmentation investment; and, and capital efficiency issues in generation investment via wholesale market signal. In addressing these themes EnergyAustralia believes that price incentives are the most effective tools to motivating customer choice in support of DM options.

Notwithstanding the effectiveness of price incentives, EnergyAustralia recognises that nonprice incentives aimed at behavioural changes including educational, promotional and demonstration initiatives have a supporting role to play in developing DM. Non-price initiatives and "triple bottom line" performance can only play a very limited role to in driving change. EnergyAustralia would like to work with IPART to see a strengthened role for commercial price initiatives in the immediate future and a balanced role for other programs incorporated into the framework for DM development.

The summary of recommendations which follows, address each of the issues put forward by IPART and these are discussed in greater detail in the body of the Report. Further information has been provided in the appendixes which summarise EnergyAustralia's DM activities, outline EnergyAustralia's network DM approach and include an extract from our recently published AESDR report.

The Report recognises certain key barriers to DM, in areas such as regulatory uncertainty for networks, and EnergyAustralia is keen to work with IPART and other stakeholders to remove barriers to viable DM options. In particular, we would like to work with IPART in developing a framework for recognition and recovery of prudent investment in network DM projects and for the development of price incentives. We believe this is an important step required to build knowledge, processes and expertise towards commercially viable DM programs during the interim "learn by doing" phase.

EnergyAustralia will seeks to maintain continued communication with the Tribunal on DM developments to ensure the progress made in the Report is built upon and expanded.

2. SUMMARY OF RECOMMENDATIONS

Environmentally Driven DM

- EnergyAustralia supports the recent State Government changes to greenhouse compliance licence requirements. This is a significant change to the environmental drivers for DM and will have far reaching impacts in the near term. EnergyAustralia is working with the government on the methodology underpinning these changes to simplify the regulatory regime and ensure consistency with other greenhouse legislative requirements.
- EnergyAustralia does not agree with the concept of a DM fund, we believe that it may be appropriate to delay consideration of any major additions to the current Sustainable Energy Fund (SEF) funding arrangements until the impact of the licence changes and SEDA restructuring has been assessed.
- The decision on funding the SEF or other Fund is one for government. However, EnergyAustralia believes any programs conducted by the fund should remain complementary to (as opposed to competing with) the Retail Licence Compliance projects.
- EnergyAustralia supports the proposal for a review of the operations of SEDA and the separation of potentially conflicting objectives. Administration of the SEF should be clearly separated form other roles undertaken by SEDA.
- EnergyAustralia supports the proposal to review, strengthen and increase the profile of energy efficiency programs and coordination across Government Departments. EnergyAustralia supports the proposal to increase focus on GEMP outcomes. The current flat target approach should be revised to one based on efficiency benchmarks and energy intensity based targets. This has the potential to allow the Government to contribute more to the achievement of reduced energy consumption..
- EnergyAustralia supports proposals to build DM into customer choice through the use of labelling, MEPS and codes to address barriers to improved efficiency in the new building and appliance sectors, although recognises that the benefits from these initiatives are longer term and largely outside the control of energy businesses.

Network Driven DM

- EnergyAustralia supports greater clarity and certainty in the regulatory treatment of DM costs. Together with development of better cost and performance information on DM options, this is a key requirement that will drive greater use of DM options for network investment deferral.
- EnergyAustralia recommends that network capital expenditure prudency assessment guidelines and test be modified to allow regulatory certainty of funding for DM market development through trials, skill creation and education.
- In considering congestion pricing, EnergyAustralia supports the use of subsidies rather than the complexity of explicit congestion pricing
- EnergyAustralia supports clarifying rules for treatment of avoided TUOS/DUOS and transaction costs to DG's and would seek to work with the secretariat and Tribunal in this area.
- EnergyAustralia supports establishing of standard connection agreements to help identify costs where appropriate. EA has standard connection agreements in place eg for small Rooftop PV but recognises that many larger projects continue to require specific contractual arrangements.
- EnergyAustralia support the DM code of Practice requirements (including information disclosure) and has recently published our first AESDR document.
- EnergyAustralia is open to considering Standard Offers from proponents as part of the

request for proposals (RFP) process but recognises the site specific nature of many proposals.

Wholesale Driven DM

- EnergyAustralia is open to review the policy for rolling-out meters but recognises that the linkages between real time pricing and customer responses are most likely to be managed through retail and network tariff structures rather than directly.
- EnergyAustralia believes that retailers and Energy Service companies are the best placed to facilitate aggregation of viable DM options.
- EnergyAustralia believes that an active market or trading platform for DM is a development which is likely to follow and supplement rather than facilitate and lead an active DM aggregation market.
- EnergyAustralia believes that, for the foreseeable future, retailers and Energy Service companies are currently the best placed to facilitate small-scale distributed generators options.
- EnergyAustralia believes, that while using standard tariffs for residential DG is appropriate, simple net metering is inappropriate and correct metering is a necessary market facilitation mechanism.
- EnergyAustralia supports proposals to enhance programs providing information on energy efficiency and strengthen Government's role as a model energy consumer and would seek to work with Government to develop programs.
- EnergyAustralia supports development of an appropriate incentive framework for energy sales foregone, and is currently seeking to participate in the development a more robust methodology for assessing reductions of greenhouse gas emissions resulting from sales foregone.

3. POTENTIAL FOR GREATER USE OF DM IN NSW

What is demand management ?

EnergyAustralia supports the approach taken in the Report of separating the analysis and recommendations into three parts based on the drivers of DM - Environmentally Driven, Network Driven and Retail Market Driven. The first two are well defined and internally consistent, however we believe the third area remains a little confusing but mainly relates to management of risk in the wholesale rather than the retail market.

Greater clarity would be obtained by having the classifications as:

- Environmentally Driven DM issues focused on conservation and substitution, which are
 predominantly the concern of retail businesses and fit well with the focus on the proposed
 retail greenhouse licence compliance conditions;
- Network Driven DM issues which are focussed on capital efficiency in transmission and distribution and align well with the DM actions being developed and undertaken within network planning areas; and
- Wholesale Market Driven DM issues which are mainly concerned with pool price and volume risk in the wholesale market, and are ultimately focussed towards capital efficiency in generation.

EnergyAustralia notes that, in moving away from the traditional narrow focus of DM on proscriptive network planning measures, Tribunal has provided a clearer platform for the balanced assessment of options and the sometimes complex interrelationships amongst DM drivers.

Costs and benefits of DM

EnergyAustralia believes that the best indicator of viable DM options will come through a track record of successful DM program implementations. To achieve this end EnergyAustralia supports the current changes to the Retail Greenhouse licensing requirements and increased certainty for allowances within network regulated revenues of funds for the investigation of DM options.

EnergyAustralia believes that the SEDA data¹, which is used extensively in the report, would benefit significantly from a process of peer review to improve its accuracy and appropriateness for screening DM options. The report notes that:

"The study found that the majority of DM options studied (21 out of 35) can deliver energy to consumers at commercial costs equal to or less than the cost of traditional supply-side options, and often with lower environmental costs".

This is a significant statement, which differs from EnergyAustralia's current understanding and experience of the commercial costs of DM options. We believe it is crucial to ensure that these cost figures are reliable and accurate or it may lead to unrealistic expectations of DM potential and the possibility of premature or sub-optimal investments. SEDA has indicated that they

¹ Contained in "Distributed Energy Solutions - Costs & Capability Estimates for Decentralised options for meeting electricity demand in NSW" SEDA's February 2002 report.

would seek to issue an updated version of their paper and we would encourage IPART to seek a peer review of the robustness of the SEDA data as part of this process. While the SEDA data may provide a reasonable ranking of the costs of DM options, use of the data as a "course screen", as proposed by Charles Rivers Associates (CRA), requires greater confidence in the level of the net financial costs of DM options.

The report provides a positive indication of the potential capacity for DM at the broadest level while noting that not all the technologies can be considered commercially feasible. While the 5,900MW demand capacity identified by SEDA is an interesting upper limit benchmark, the relevant focus should be on commercially feasible options which should be assess in the light of reliable costings.

There is an established assessment ranking which distinguishes three classifications of DM options based upon:

- Technical potential;
- Commercial potential; and
- Practical potential.

Efforts should be concentrated upon identifying and developing practical options, whereas the SEDA data is more focused towards the technical rather than commercial or practical potential of options.

While the report notes that:

Where there are network constraints that require capital expenditure, the relevant hurdle cost for the network component alone may increase to \$200/kVA pa — at which cost many of the DM technologies would appear to be commercially viable.

EnergyAustralia would caution that this number is at the upper end of possibilities and that costs are, as noted in the Report, "very site-specific". The range and average level of costs are better assessed through an examination of the analysis in EnergyAustralia's AESDR, an extract of which is attached and a copy of which can be obtained from our website, www.energy.com.au.

Barriers to DM

EnergyAustralia agrees with the Tribunal that the benefits of DM options can be diverse, both direct and indirect and flow to more than one sector of the economy. We also agree that the current market for DM services is small and immature and that regulatory barriers, institutional factors and transaction costs are amongst the impediments to DM options. Nevertheless, while we believe there "may be significant DM options that are already commercially viable but not taken up", the scope of these opportunities in the short term may be less than the paper implies.

Excessive expectations and a too broad cast of DM options may ultimately, of itself, prove an impediment to identifying and promoting those viable DM options which merit most attention.

Tribunal's proposed approach

EnergyAustralia supports the Tribunal's approach of:

"...focussing on reducing the barriers to DM into a limited list of practical recommendations that lead to action in the short to medium term... and that... such a focused approach will lead to early experience with efficient and effective DM programs, which may help to reduce many of the barriers which are related to lack of experience with and confidence in DM on the part of energy services businesses".

We believe many of the proposals presented by the Tribunal provide important intermediary steps to the creation of an active market in DM services.

In examining potential demand initatives, EnergyAustralia believes that price incentives are the most effective tools to motivating customer choice in support of DM options. The recent State Government changes to Greenhouse compliance licence requirements for example will provide important price signals for environmentally driven DM measures. Notwithstanding the effectiveness of price incentives, EnergyAustralia recognises that non-price incentives aimed at behavioural changes including educational, promotional and demonstration initiatives have a key role to play in addressing the *"lack of experience with and confidence in DM."* These non-price signals are already implemented in a range of regulations that EnergyAustralia encourages, however it needs to be recognised that the benefits from these initiatives are longer term and largely outside the control of energy businesses. Price incentives that improve the commercial viability of DM options are therefor the most likely to yield *"practical recommendations that lead to action in the short to medium term."*

EnergyAustralia would like to work with IPART to see how price initiatives can be incorporated into an approach that will lead to action on DM in the short to medium term.

4. ENCOURAGING ENVIRONMENTALLY DRIVEN DM

This section of the Report concentrates on the options for reducing greenhouse emissions from electricity production. It proceeds from an assumption (based on SEDA analysis) that here is a large quantity of economically efficient (ie no net cost to society) options available to reduce emissions in NSW. The SEDA analysis implies that this could amount to over 22,000 kt $CO_2/$ yr. The conclusion that follows this assumption is that there are substantial barriers preventing these otherwise viable options from being taken up which if removed would see these measures adopted. We would caution that measuring the practical potential of opportunities requires reliable data to assess commercial viability and this will require an investment in "learning by doing".

EnergyAustralia supports the recognition in prices of environmental impacts through a broadbased emission trading approach or carbon tax applied at point of emission as a preferred option, but acknowledges that other options may be necessary given the desire for NSW to act unilaterally.

EnergyAustralia addresses each of the key recommendations contained in Chapter 3 of the Report below.

Recommendation 1: Strengthen Retail Licence Conditions

EnergyAustralia supports the early introduction of an emissions trading or carbon tax, but in the interim supports the NSW Government's initiative to strengthen benchmark compliance, through establishing benchmarks with penalties for non-compliance, which was released during the currency of the inquiry undertaken by IPART.

This proposal creates a more effective enforcement and incentive regime, which will ensure increased competitive neutrality amongst retailers in their licence compliance. The Report reflects elements of the benchmark proposal and supports detail changes like trading and simplification of the accounting for electricity sales foregone.

While supportive of the proposed changes to the benchmark regime, a thorough review of the emissions workbook and the electricity sales foregone framework is also required as part of this reform. These instruments underpin the benchmark regime. Its is EnergyAustralia's view, however, that these instruments in their current form are not sufficiently clear, certain and robust to be used as a basis for determining whether or not a retailer has met its benchmark and consequently whether or not that retailer must also pay penalties. The instruments should also permit a broad range of compliance options and permit trading of compliance credits between retail suppliers.

The Report states that the full environmental cost of energy is not reflected in energy prices. Energy prices should be fully cost reflective in this regard but this is a difficult task from a policy perspective as there are a number of unknown and uncertain factors. If simplified and appropriately implemented, the proposed benchmark regime with its system of penalties for non-compliance provides a level of certainty regarding the environmental cost of energy and may go some way towards removing this barrier to DM. EnergyAustralia believes the current benchmark proposals to be an adequate response in the short term, and hence attention in the area of environmental driven DM should focus on the refinement and implementation of the licence conditions and revising the instruments underlying the benchmark regime. Nevertheless, EnergyAustralia supports any expansion to a national scheme should be in the basis of a tradeable emission scheme applied at generators.

Recommendation 2: Establishment of a DM fund (or enhanced Sustainable Energy Fund)

The report recommends establishment of a DM Fund to pursue energy efficiently and reducing demand. This could be additional to SEDA's Sustainable Energy Fund or absorb SEDA's current role.

EnergyAustralia does not agree with the concept of a DM fund, we believe that it may be appropriate to delay consideration of any major changes to the current Sustainable Energy Fund (SEF) funding arrangements until the impact of the licence changes and SEDA restructuring has been assessed.

The decision on funding the SEF or another Fund is one for government. However, EnergyAustralia believes programs conducted by any fund should remain complementary to (as opposed to competing with) the Retail Licence Compliance projects.

EnergyAustralia supports the review of SEDA's operations to establish a cleared governance structure and separation of the role of fund administrator from the other functions that SEDA now pursues. Our preference is for a clear role for any fund between one focussed on measures that would complement the retail licence obligations and one that would focus on longer-term issues. In this way, any Fund could be used in a manner consistent with the proposed benchmark obligations and overall regulatory regime.

Recommendation 3: Fund (through DM Fund) energy efficiency programs targeted at specific groups

EnergyAustralia supports energy efficiency programs targeted at specific groups and currently has targeted DM programs for reducing energy costs in the residential sector (with particular reference to low income / high energy cost households). Energy Australia does not support the creation of a specific DM fund for this purpose. There is already demonstrated potential to pursue legitimate social and equity agendas across target sectors in line with government policy objectives through the implementation of energy efficiency programs for low-income households (such as the Community Home Energy Efficiency Partnership REFIT program referred to in Attachment 1).

Under the REFIT program EnergyAustralia has committed \$300,000 to provide energy efficiency kits to low income households in the Hunter region to help improve efficiency, to save money and to reduce greenhouse gas emissions. The efficiency kit includes showerheads, fluorescent lamps, tap aerators, toilet cistern weights and a door draught stopper, which will offer significant energy savings. Up to 2,500 low income households in the Hunter region will benefit from the 12 month program, which is expected to save the participating families approximately \$90 to \$100 in bills per year. The project is a result of collaboration between the Public Interest Advocacy Centre, Newcastle Council, SEDA and Hunter Water.

Recommendation 4: Reviewing, strengthening and increasing the profiles of energy efficiency programs and coordinating efforts across Government

EnergyAustralia supports the proposal to review, strengthen and increase the profile of energy efficiency programs and coordination across Government Departments. EnergyAustralia supports the proposal to increase focus on GEMP outcomes. The current flat target approach should be revised to one based on efficiency benchmarks and energy intensity based targets. This has the potential to allow the Government to contribute more to the achievement of reduced energy consumption.

It is EnergyAustralia's view that the performance of the Government sector in DM could improve. This would provide an example to the community of Government as a model consumer and notes that there is currently a Lower House (Public Works Committee) inquiry into this subject and awaits with interest their recommendations.

Recommendation 5: Build DM into customer choice

EnergyAustralia supports proposals to build DM into customer choice through the use of labelling, MEPS and codes to address barriers to improved efficiency in the new building and appliance sectors although recognises that the benefits from these initiatives are longer term and largely outside the control of energy businesses.

On a practical level the recommendation is concerned with the expansion of educational / informational programs like the energy star rating scheme, planning controls on buildings, minimum energy performance standards. EnergyAustralia supports the expansion of educational / informational programs relevant to DM. However, EnergyAustralia believes that build DM into true consumer choice requires the opportunity for consumers to respond appropriate price signals as proposed under other options.

While this recommendation may not have a clearly demonstrable short-term impact it forms part of an overall DM strategy, particularly where coordinated with other initiatives.

EnergyAustralia regularly undertakes exercises to inform customers of energy efficiency issues. Some examples are:

- information provided with bills and on bills;
- television campaigns;
- customer call centre number for information; and
- developing a retrofit kit for sale.

Further details of initiatives are contained in Appendix 1.

Recommendation 6: Green Retailers

While not covered in its summary of recommendations, the Report explores the option of establishing "green retailers". It suggests that there might be value in the Government establishing one of its retailing businesses as a specialist "green retailer".

EnergyAustralia does not support the establishment of a specialist "green retailer". Establishment of a specialist green retailer would disadvantage remaining retailers and possibly impede their ability to meet their benchmarks, without necessarily producing an improved environmental outcome over current arrangements. This could erode existing

retailer's skills, limit their scope for a 'green' presence in the retail market and discourage other retailers from pursuing 'green' strategies.

EnergyAustralia supports the view that commercial incentives are the most appropriate promoter of green options and "*if retailers can effectively market 'green' energy they will, so there is no need to mandate that they do so.*"

5. ENCOURAGING NETWORK DRIVEN DM

This section concentrates on capital efficiency - the options for reducing energy service costs through the cost-effective deferral of capital investment in network capacity expansion. This is a key function of DM, which EnergyAustralia is continuing to develop and enhance as part of its network planning processes.

While the analytical approach used in the report is sound, assumptions regarding the relative cost of DM and network capacity expansions are open to question. As with environmental options, this lack of robust data may lead to an unrealistic perception that there may be a larger number of cost effective network DM options available in the short term than is warranted. EnergyAustralia believes that the scope for network driven DM can be enhanced and expanded substantially but questions the extent of proven commercial viable options currently available. The results of our DM investigations to date, and analysis in our AESDR, provide evidence for concern over the accuracy of the cost information regarding potential DM options and suggest lower comparison data for "typical" network expansion costs than that used in the report.

EnergyAustralia believes the potential for increased network driven DM is real but not of the magnitude implied in the report.

There is also an implication that there may be potential to enhance network reliability with DM. EnergyAustralia does not believe this is necessarily the case and, in some cases, DM options can negatively impact on reliability compared to normal system augmentation practices. We believe that this issue would benefit from the experience gained through practical analysis of reliability performance in trial projects. EnergyAustralia would like to work with IPART and other stakeholders to reach a common understanding on the relationship between network reliability and DM options.

EnergyAustralia agrees with IPART that regulatory uncertainty is a key barrier along with lack of knowledge and experience in DNSPs. Section 3.4.1 of the current network determination² states that one of the items included in the AARR that the DNSPs can collect in addition to the glide-pathed base revenue is:

"payments for demand management and other network support services, up to an amount determined by the Tribunal through an examination of avoided network costs"

Unfortunately, due to the lack of information and experience surrounding DM initiatives, it is currently often unclear whether "demand management and other network support services" will realise sufficient avoided network costs to cover DM program costs. Some certainty of the prudency of network investment in "learning by doing" and trial DM projects is necessary in the intermediary phases of establishing DM options. This requires an effective incentive system which will assure the recognition of DM expenditures and possibly positive incentives through the provision of additional returns to DM projects in the initial phases.

EnergyAustralia notes that "The Tribunal supports enhancing planning processes to allow consideration of DM by the networks." and has attached a summary of the Network DM

² "Regulation of New South Wales Electricity Distribution Networks – Determination and Rules under the National Electricity Code" (IPART December 1999)

assessment processes, which meets current legislative requirements and is similar to the approaches suggested in the Report, as Appendix 2.

EnergyAustralia addresses each of the key recommendations contained in Chapter 4 of the Report below.

Recommendation 1: Reviewing the regulatory treatment of network capital expenditure and encouraging trials of DM

While the Report identifies regulatory uncertainty as a key barrier, the Report does not make practical recommendations which address this issue. While comments are made on the prudence test and the Tribunal's current views on incentives and balance there are no clear recommendations for action.

EnergyAustralia believes that improved regulatory certainty regarding the treatment of DM costs and the assessment of investment prudency would be <u>the most useful reform</u> to the network DM agenda.

EnergyAustralia supports the view that a balance is required between increasing regulatory certainty and avoiding excessive regulatory intervention but, while an unbiased approach is appropriate over time, it may be worth considering a bias in incentives toward DM in the short term. This approach was used extensively in the US during the development of DM where utilities could earn premium returns on DM expenditures compared to conventional investments. This also recognises the unequal risk profile of these investments.

EnergyAustralia would be eager to work with IPART and other stakeholders to develop and demonstrate network planning processes which provide regulatory certainty of the prudence of DM projects, including the necessary investments in "learn by doing" programs.

With respect to the Regulatory Reset in 2004, the report notes that the Tribunal will consider alternative mechanisms to encourage DM. No indication of direction or options is included but EnergyAustralia believes that the proposed Price Cap form of regulation for the next review allows scope for the encouragement of DM options. EnergyAustralia looks forward to working with the Tribunal in developing the framework for DM as part of the consultation on the next network determination.

EnergyAustralia is concerned that the problems with the current form of regulation mean that prior to the next determination (turing 2002/03 and 2003/4) there is insufficient regulatory certainty or incentive to promote network DM initiatives. EnergyAustralia would like to see the process of developing skills, processes and experience with DM initiatives commenced prior to the next determination so they can be more appropriately incorporated in the determinations findings. EnergyAustralia would seek to work with IPART and other stakeholders in this area.

Recommendation 2: Encourage trails of congestion pricing

The paper recommends trials of congestion pricing which are advocated from a fairly theoretical economic basis and includes consideration of Time of Use, geographic and TUOS price impacts. In considering congestion pricing, EnergyAustralia supports the use of subsidies rather than the complexity of explicit congestion pricing.

EnergyAustralia supports targeted trials of congestion pricing and would seek to work with IPART on developing proposals for both price signal trials through energy prices and also by the use of DM capacity payments. EnergyAustralia would also be happy to outline if required our current process, which incorporates a view of congestion pricing through DM capacity payments. This approach favours location based DM payments as opportunity pricing tools. EnergyAustralia would also wish to confirm with IPART the regulatory treatment of DM payments to customers and their treatment as negative revenue for the purposes of the AARR calculations.

Recommendation 3: Clarify rules for treatment of avoided TUOS/DUOS and transaction costs to distributed generators

EnergyAustralia agrees that the treatment of savings in distributed generators and avoided TOUS/DUOS is insufficiently well defined.

EnergyAustralia supports clarifying rules for treatment of avoided TUOS/DUOS and transaction costs to distributed generators and would seek to work with the secretariat and Tribunal in this area. EnergyAustralia supports development of more defined guidelines for TUOS pass through (and recovery) for embedded generators and agree that further consideration is required to understand the impact on avoided distribution costs and its linkage to other DM processes.

The report proposes fixing the treatment of avoided TUOS in the Pricing Principles and Methodologies in line with the approach used for Smithfield and Tower/Appin for Integral. This would allow DNSPs to add the cost of passing the full value of avoided TUOS payments to generators to their AARR, and will give rise to an expectation from embedded generators that this will be the normal case. In the case of "avoided DUOS", the report suggests that, where there are cost savings to the DNSP, the full amount should be passed to the generator. The report proposes that requirements be formulated into a "rules based" approach and documented in similar fashion to the TUOS rules.

We do not support the notion of total savings pass through to embedded generators as this is in conflict with the stated aims of DM to reduce overall costs. We advocate instead that embedded generator contributions to investment deferral be treated within the framework for DM planning and assessment alongside other DM options.

Improved clarity on TUOS requirements would make negotiations simpler, particularly if recovery of costs were made certain. Passing all distribution cost savings to the generator would mean that no benefit would accrue from the DM to either the network provider or its customers. This would not meet the objective of reducing energy service costs, and would risk over-investment in embedded generation.

EnergyAustralia has a number of embedded generators connected to its distribution network, some for several years, including:

- Redbank (since April 2001);
- Lucas Heights 1;
- Lucas Heights 2;
- Glenbawn;
- Belrose;
- Macquarie University;

- Sutherland Leisure Centre;
- Cronulla Sewerage Treatment Plant;
- Malabar Sewerage Treatment Plant; and'
- Parliament House Co-generation Facility.

EnergyAustralia also owns distributed generation in the form of a solar farm near Singleton and a wind turbine at Kooragang Island near Newcastle. In addition, there are a number of solar plants and a micro turbine used by the CSIRO for energy solutions development. EnergyAustralia is also currently negotiating the connection of several other generators ranging from 500kW to 30 MW or larger.

EnergyAustralia has considerable experience in connecting loads of all types and sizes to its network. However, despite this considerable experience, the negotiation of the connection of loads, especially large loads, is often still complex and depends upon both load characteristics and network configuration at the proposed point of supply. The connection of generators is at least one level more complex than the connection of an equivalent size of load and introduces several significant additional issues that need at least to be considered. Consequently, EnergyAustralia is would wish to explore fully the extent to which the connection of generators other than the simplest installations can be streamlined.

EnergyAustralia supports the concept of connection guidelines. However, these would have to be at a very high level and therefore only encompass the principles that would apply to distributed generation. For the actual negotiation of the connection, we believe there is often no alternative, except in the most simple of cases, to working through the technical issues as they arise in each particular case. Simple installations that might achieve "automatic" connection could be suitably approved inverter type generators such as PV arrays or micro-turbines, and limited to a maximum size in accordance with the NSW service and Installation Rules.

EnergyAustralia believes there needs to be boundaries around the standard offer approach. In the same way that EnergyAustralia calculates Cost Reflective Network Pricing (CRNP) network charges for customers over 10 MW, EnergyAustralia believes that it should calculate individual offers for larger generators. This is to ensure that the payment to the generators are not inappropriate as a consequence of the averaging carried out in the standard offer approach. EnergyAustralia also believes that in some locations, probably in rural areas where augmentation costs for small load increases can be significant, the calculate a specific offer in these circumstances may result in generation not being connected where it clearly provides a greater than average benefit. This approach would have the benefit of consistency with the Tribunal's recent Determination on Capital Contributions for customer load connections.

EnergyAustralia would also seek to see that, where relevant, net costings are used with gas options which considers both gas and electricity network augmentation costs to avoid cost shifting between network systems which fails to produce net benefits.

Recommendation 4: Support DM code of practice and propose use of standard offers

EnergyAustralia supports standard offer approaches as one means of implementing DM options where this is the most efficient and appropriate means of securing demand reductions. However, we would stress the need to maintain a high level of flexibility in DM processes, at

this stage of their development, as currently exists under the DM Code in its role as a nonmandatory guideline.

EnergyAustralia supports trials of the targeted use of market based offers to purchase DM measures at a fixed price per kVA reduced. EnergyAustralia wishes however to avoid a highly prescriptive approaches which, in our experience, provide ineffective means for assessing DM options if sufficient demand reduction is not achieved to defer investment. If that is the case, the network operator may be left paying for DM and not deferring any investment. DNSPs would need some regulatory comfort regarding recovery of such costs before embarking on such an approach. While standard offer approaches may be a useful means of implementing DM options in certain circumstances, it is likely to only be effective within clearly defined boundaries. Details of EnergyAustralia's standard offer for small rooftop PV are contained on the EnergyAustralia website.

5. ENCOURAGING WHOLESALE MARKET DRIVEN DM

The key thrust of this section of the Report should be wholesale market driven options, as the third area of importance in DM is volume risk during high price periods through physical load reduction techniques. At the gross level, there is a consequent impact on overall pool price levels, but the key saving is through less expensive means of managing the risk of being under contracted during high price or VOLL events.

EnergyAustralia recognises the objective of minimising costs to retailers through reduced exposure to high pool prices and price spikes and believes the analysis is a useful treatment of the causes and potential role of demand side options in controlling risk. However, the discussion could be enhanced with a clearer distinction being made between the management of peak events through demand response and the price impacts of a reduction in overall demand.

Wholesale market driven initiatives are in many respects more closely linked to network driven initiatives than environmental driven initiatives being effectively concerned with signals for capital efficiency in generation. In focusing on capital efficiency issues network and wholesale market DM initiatives are more concerned with peak rather than underlying energy usage.

EnergyAustralia addresses each of the key recommendations contained in Chapter 5 of the Report bebw.

Recommendation 1: Review policy for rolling out interval meters to residential customers

EnergyAustralia is open to review the policy for rolling-out meters but recognises that the linkages between real time pricing and customer responses are most likely to be managed through retail and network tariff structures rather than directly. EnergyAustralia would welcome the opportunity to discuss with IPART the implications of the provision of interval meters to residential customers.

Providing interval meters for residential customers is suggested as a means to remove the averaging effect of profiling and thereby increase exposure to pool price volatility (and the desirability of managing it through demand side responses). It may be possible that this would increase the size of the exposure, but in EnergyAustralia's view it is unlikely to affect the relative cost difference between demand side responses and conventional risk instruments.

The argument in the Report is that the introduction of time of use metering would provide customers with additional information about their consumption that would somehow encourage them to adopt DM initiatives (of some kind). This is by no means a certainty. Roll out of interval meters, in itself a costly exercise, is not all that is required for small retail customers. Billing methods, contracts, and settlements would need to be amended to enable this development to be implemented. The magnitude of this task should not be underestimated and the benefits of such a recommendation should be quantified before its implementation.

EnergyAustralia supports the long term objective of interval metering of customers but recognises the substantial cost barriers to implementing this strategy at present. There may well be more cost-effective initiatives than interval metering that could provide the similar or increased DM benefits (principally greenhouse gas abatement) in the short term such as those

made in EnergyAustralia's submission to the Retail mid term pricing review. EnergyAustralia's submission on cost reflective pricing of Off peak hot water and innovation in tariff development is summarised below.

Solar conversion or replacement of existing Off peak hot water systems potentially provide the greatest opportunity to implement DM greenhouse gas abatement activities in NSW. In recognition of this opportunity, EnergyAustralia has embarked on an ambitions project to drive the conversion of up to 5,000 units per year and generate the associated greenhouse benefits. Replacing electric hot water systems with gas or solar systems now mean that greenhouse gas benefits can be realised today.

The potential impact of encouraging the conversion of customers from electric hot water systems is significant but sales have been lower than expected. One of the main reasons for this has been the artificially low price of electricity supplied to electric hot water systems. As solar hot water systems are more expensive than electric systems to install, the savings in terms of ongoing energy supply need to be sufficient to warrant the customer's extra initial cost. Increasing the target level of Off peak electricity will be a crucial factor to the success of the proposed greenhouse gas abatement regime in NSW.

EnergyAustralia's submission to the Retail mid term pricing review recommends an approach to promote the conversion of Off peak 2 customers in the coming years which involves gradually increasing the price and making the tariff obsolete. This will provide some assistance to greenhouse gas reduction by encouraging Off peak customers to switch to gas or solar.

EnergyAustralia's submission to the Retail mid term pricing review also recommends the introduction of separate business and domestic targets for customers to reflect the different cost make up associated with business and domestic customers.

Retail regulation should explicitly provide a mechanism for the introduction of new regulated retail tariffs. EnergyAustralia also believes that customers supplied by obsolete tariffs should be actively encouraged to move to more cost reflective tariffs. Whilst it is important that customers are protected from significant price increases, it is equally critical that uneconomic tariffs are not maintained indefinitely.

A comment is made in the paper that the flat structure of regulated tariffs means that residential customers receive no information or incentive to manage their demand during peak price periods. The report also notes that customers tend to prefer simple flat pricing structures. We recognise that direct half hourly price signals are not passed on to customers, however, we believe that scope for innovation in new tariffs provides the potential for DM signals to be packaged into prices in a manner similar to the way mobile phone plans manage usage through pricing.

Recommendation 2: Facilitate development of an active market or trading for the aggregation of DM

The Report's proposal to facilitate trading of DM options suggests a range of options, including developing real time priced energy contracts, an electronic trading platform and independent market makers.

EnergyAustralia believes that retailers are currently able to contract for load curtailment options with users and does not see any mandated market arrangements as desirable at this stage. This reflects the reality that the market will develop when the demand and price differential is sufficient. The proposed changes to NSW licence compliance on retailers will facilitate the trading of electricity sales forgone (ESF) as a market mechanism to occur at the lowest cost over the market as a whole.

EnergyAustralia supports the recognition of demand side responses like load curtailment and dispatchable generation as legitimate tools for risk management in the wholesale market. However, we would contend that the main barrier to more widespread use is the relative cost of such options compared to conventional (and more reliable and flexible) risk management tools in the current market. Should the volatility in the wholesale market change and the risk profile consequently become more onerous, these options will become more attractive.

EnergyAustralia already has several agreements with large commercial and industrial customers whereby it can reduce load according to spot market conditions. EnergyAustralia is also actively seeking additional opportunities to implement load management options as customer contracts are renegotiated. It is EnergyAustralia's view that Government intervention is not required at this stage.

Recommendation 3: Develop a small generator market framework & "smart metering" The Report states that barriers to network contracting and lack of energy buy-back arrangements hamper small generators. This is surprising as the examples provided of photovoltaic and microturbines are both technologies where economic viability is still an order of magnitude away and commercial viability is a key barrier preventing widespread adoption.

As discussed above "smart metering" (ie interval meters) is a desirable long term objective but currently simple metering using standard tariffs would be most appropriate (this proposal needs to consider problems with net metering, both technical and GST related legal issues).

In discussing options for distributed generation as a basis for demand response, contractual difficulties of connecting to the network exist but have tended to be over-stated in EnergyAustralia's experience. Further confusion arises due to the assumption that such difficulties must be preventing the wider use of demand side options in the market.

It should be noted that EnergyAustralia already has over 700 small distributed generators connected and under buy back arrangements. Some improvements to the transparency and consistency of metering, connection and energy purchase arrangements across the NEM would be useful, however its impact on take-up of distributed generation (for any purpose) would be limited.

While we have considerable success in dealing with the very small end of the market, EnergyAustralia supports further development of the connection and contractual arrangements for small embedded generators.

Recommendation 4: Enhance programs providing information on energy efficiency and strengthen Government's role as model energy consumer

EnergyAustralia supports proposals to enhance programs providing information on energy efficiency and strengthen Government's role as model energy consumer and would seek to work with Government to develop programs.

Recommendation 5: Develop an appropriate incentive framework for retailers to forego sales of electricity

EnergyAustralia strongly supports this recommendation. The Report correctly identifies that the current arrangements are cumbersome and constitute a barrier.

The electricity sales forgone framework, as well as the emissions workbook, require substantial review to underpin effectively the new benchmark obligations. EnergyAustralia has provided to the Ministry of Energy some suggestions for amending the electricity sales foregone framework to make it easier for retailers to obtain credits which will then make it more viable for retailers to promote installation of solar hot water systems. EnergyAustralia would welcome the opportunity to provide more feedback on these instruments.

7. CONCLUSIONS

EnergyAustralia believes that Tribunal's interim report is a valuable contribution to informed debate on DM and the directions in which DM should be developed in the future.

EnergyAustralia supports the development of an increased range and volume of viable DM options and is eager to work with IPART, Government and other stakeholders in this endeavour.

EnergyAustralia believes that sound grounding in the costs and benefits of possibilities and options is an essential underpinning to any progress on DM options. EnergyAustralia would caution that the SEDA data used in the Report risks creating unrealistic expectations of the commercial viability of DM in the short term, and should only be considered of use after being subjected to a peer review.

EnergyAustralia supports the overall thrust and aims of the Report and would seek to see that these are maintained through the implementation of options.

EnergyAustralia believes that the changes currently being made to the NSW Licence Compliance Regime provide an opportunity for facilitating DM and the provision of cost effective energy services. EnergyAustralia supports the proposals to strengthen the competitive neutrality of retail licence conditions for non-compliance with benchmarks. EnergyAustralia is seeking to work with Government to ensure that the proposed regime is revie wed and revised to provide a clear, certain and unambiguous framework within which retailers can operate to met their benchmarks.

EnergyAustralia believes that the major barrier to development of network DM is the lack of regulatory certainty of investments in the current period when trial programs, which lack certainty of "prudent" outcomes, are required to develop knowledge, skills and processes.

EnergyAustralia recognises that in the development of an effective market for DM, stakeholders need to first progress through intermediary steps, and that these will require support before commercial viability of DM options can be identified and maintained.

EnergyAustralia has indicated where options identified in the Report are already in place or underdevelopment and believes that these combined with new initiatives will see an increased role for DM as an integral part of the energy industry. EnergyAustralia looks forward to working closely with IPART and other stakeholders in developing the role of demand management, distributed generation and other non-traditional energy service options.

APPENDIX 1 - SUMMARY OF ENERGYAUSTRALIA'S DM INITIATIVES

ENVIRONMENTALLY DRIVEN DM INITIATIVES

Initiative	Description
Govt Agency Energy Reviews	EnergyAustralia offered free energy reviews to NSW Government agencies to help them identify viable energy saving initiatives that would assist them in meeting GEMP targets. Focussed on the smaller agencies that had been overlooked by other approaches, we have completed about
	36 sites to date, identifying savings typically between 15% and 40%. The program is about half-complete.
Rooftop Solar PV buy back	Over 700 rooftop PV generators are currently connected to the EnergyAustralia network. All of these are paid for energy exported on our standard buy back tariff arrangement (which itself embodies a considerable cross subsidy in their favour). Metering, connection and commercial arrangements are standard, straightforward, and are understood by all experienced installers.
REFIT	A pilot program being run in the Lower Hunter, REFIT is a social program focussed on assisting low-income private rental tenants to reduce their electricity bills through installation of energy saving devices. EnergyAustralia funds the entire cost of the retrofit for qualifying customers. The program was initiated by PIAC and is also supported by SEDA and Hunter Water.
Greenhouse information on bills	EnergyAustralia prints information on all customer bills that identifies individually the greenhouse gas emissions associated with the energy used by its customers. We believe this is an important part of the education process.
Changed retail pricing of OP2 and OP2	Proposals for the realignment of Off Peak tariffs to encourage greater viability of gas and solar hot water options are included in EnergyAustralia's retail mid term pricing review proposal.
ESF framework development	EnergyAustralia is working with government and relevant stakeholders to develop the framework for the calculation and capture of sales of energy forgone.
Solar booster hot water tariff	EnergyAustralia has embarked on a major program to create greenhouse benefits through converting electric hot water systems to solar and gas.

NETWORK DRIVEN DM INITIATIVES

Initiative	Description
AESDR	EnergyAustralia has published our first Annual Electricity System
	Development Review as suggested by the DM Code. This outlines the
	foundation of our DM analysis process a extract from which is attached
	and copies of which can be obtained from our website.
Network planning	Network planning processes have been reviewed and changed to
Processes	incorporate explicit consideration and staged investigation of DM options
incorporating DM	in response to zone level constraints. To date nine DM investigations have
-	been conducted and the process has been refined.
Demand tariffs	EnergyAustralia includes demand components in key tariffs to manage
	peak loads and requirements for network augmentations.
TOU tariffs	EnergyAustralia Tariffs include Time of Use rates to manage peak loads
	and shoulder loads and requirements for network augmentations
Controlled Load	EnergyAustralia has over 500,000 customers connected as controlled
	loads primarily as OII Peak not water systems, this allows load shifting to
	national for unschooluled interruption of controlled loads to manage
	demand in times of system stress
CBD Showcaso	A program socking domonstration DM projects in the CBD identified three
	notential examples. Two of the three failed to proceed due to unexpected
	barriers and despite offers of financial support. The project has identified a
	number of issues for consideration in future DM investigations.
CBD/ Transgrid/	EnergyAustralia is working with Transgrid and the Department of Planning
Dept of Planning	to examine demand management potential using funds earmarked as part
Fund	of the development of the CBD augmentation.
Distributed	EnergyAustralia has undertaken a series of medium-large scale distributed
generation	generation projects thorough which the principals and problems of
connection	developing connection agreements have been identified and explored. A
agreement	list of existing projects is contained in Section 5 of our report.
development	
projects	
Power Factor	EnergyAustralia is regularly involved in exploring options for the use of
Correction	Power Factor Correction to improve loads and defer network
	augmentations.

WHOLESALE MARKET DRIVEN DM INITIATIVES

Initiative	Description
Interruptable	Several confidential contracts are currently in place with commercial and
/Dispatchable	industrial customers with a sharing of the benefit from curtailment or
contracts	additional generation.
Separate profile's	Revised pricing of Off peak tariffs through the introduction of a separate
for OP1 and OP2	Off Peak 2 profile has been proposed as a change to the NSW
	Metrology Procedures to provide more incentive for DM options.
CBD air	Cycling of building air conditioning is a project currently being assessed
conditioning	by EnergyAustralia's retail business.

APPENDIX 2 - ENERGYAUSTRALIA'S NETWORK DM APPROACH

EnergyAustralia has developed a multi-stage approach to identifying, investigating and analysing DM options within our network planning processes, which is designed to meet the legislative requirements. We have employed several engineers with long experience in energy management technologies and techniques to assist in the identification and analysis of DM options.

EnergyAustralia has published the first edition our annual statement (AESDR) of system constraint data that conforms to the format suggested by the DM Code. The AESDR documents all system constraints identified for the next five years and forms the foundation of our DM investigation process.

Following publication, all constraints and proposed system expansion investments identified in the AESDR will be subjected to a test to determine whether it is reasonable to expect that DM options might be found that could defer the need for investment. In this initial test, constraint and investment data is analysed to determine the thresholds for size (MVA reduction), cost (\$/kVA) and effectiveness (timing, seasonality etc) and these parameters are compared with known costs for DM options in a desktop analysis. The test is also a means of documenting planning decisions and determining priorities for investigation.

For each of the areas where it is determined that DM options might be possible, a DM scoping investigation is undertaken. The scoping investigation is tailored to the area under study, but typically comprises a public call for options (a much streamlined version of the DM Code's RFP approach), and a field investigation in which all major customers in the area are contacted and walk through audits of their sites conducted. All possible options identified in these activities are than analysed to determine technical potential for DM in terms of the three key parameters (size, cost and effectiveness). Options are then ranked and compared to the DM characteristics required to effect at least a one year deferral of investment to determine whether there is a potential for cost effective DM and if so, which options appear most worthwhile. It is expected that this process will take about two months. Cost effectiveness is determined using a simple financial cost approach that compares the cost to EnergyAustralia to the deferral value achieved.

Where it is determined that there is realistic potential that DM options will be viable, a detailed investigation of the most attractive options is undertaken. The form of this is determined by the source and nature of the options under investigation, but the end point is a clear understanding of the feasibility of specific options.

An integrated supply and demand side strategy is developed and the DM options are implemented through appropriate market based approaches. These can include tenders, RFPs, marketplace standard offers or direct negotiation as appropriate.

It is important to note that this investigation process enables us to approach the market with a clear specification and a confirmed budget that will enable respondents to provide specific proposals with confidence that they will be implemented.

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	Year	MVA	MVA	MVA	MVA	MVA	MVA	
	1995		60.1	45.5		55.7		46.7
nal	1996		60.1	44.5		55.7		46.0
Act	1997		60.1	44.5		55.7		48.6
	1998		60.1	45.6		55.7		50.2
	1999		60.1	46.9		55.7		52.0
	2000		60.1	49.4		55.7		52.6
	2001		60.1	48.1	50.6	55.7		53.4
	2002		60.1	48.6	50.6	55.7		55.0
	2003		60.1	49.1	50.6	55.7		56.6
	2004		60.1	42.9	50.6	55.7		51.7
g	2005		60.1	43.3	50.6	55.7		53.2
ecte	2006		60.1	43.7	50.6	55.7		54.8
roje	2007		60.1	44.2	50.6	55.7		56.4
ā	2008		60.1	44.6		55.7		58.1

Is a constraint forecast within 5 years?

YES

Constraint Driver:

Commercial load growth

Zone Substations that are Forecasted to be Constrained within 5 years.

Load = Peak Loa	Above ad - Firm Capacity	Firm	Rating	Load a (MVA)	above	Fir	m Rating
				year	Winter		Summer
				2002	2		
				2003	3		0.9
				2004	1		
				200	5		
				200	5		

2007	0.7
2008	2.4

Frequend Time wh Firm Rat	cy and I here Load ing	Length of Exceeded
year	Day's FR >	Hr's FR >
2001	0.0	0.0
2002	0.0	0.0
2003	7.0	13.5
2004	0.0	0.0
2005	0.0	0.0
2006	0.0	0.0
2007	5.0	9.5

Risk Data

Day's FR >

Number of Days per Annum. on which the peak load is greater than the Firm Capacity

Hr's FR >

Hours per Annum for which the peak load is greater than the Firm Capacity

Power Factor at time of Peak Load.

Winter	Summer
0.93	0.83

Reliability Indicators

(System Average Interuption Duration Index)(Customer Average Interuption Duration Index)(System Average Interuption Frequency Index)

Year	SAIDI	CAIDI	SAIFI
1997	28.75	74.85	0.38
1998	44.88	75.97	0.59
1999	35.12	71.45	0.49
2000	17.75	55.42	0.32
2001	10.06	116.6	0.09





Nature of Load at Time of peak:

Commercial

Possible System Support Options

Option No. 1	Power Factor Correction Capacitors
Estimated Cost of this option (\$mil):	0.7
Forecast Date that Investment Decision must be n	nade: 2002