



25th August, 2011

Power of Choice- Stage 3 DSP Review

My Home Power Submission

My Home Power welcomes the opportunity to contribute to the Australian Energy Market Commission's (AEMC) stage three review of Demand Side Participation (DSP) options for the National Electricity Market (NEM).

My Home Power is looking to provide cleaner, greener electricity to Australian consumers through distributed generation and energy efficiency solutions. We believe that changes to the electricity market conditions and regulations could provide greater choice for all consumers and greatly facilitate the uptake of DSP options and also reduce prices, when compared to current projected increases.

We believe that price will always be the greatest driver in consumer behavior. However, Distributed Generation will also be attractive for consumers because of:

- the additional benefits in energy efficiency,
- minimization of line losses, and
- Carbon abatement

In effect, in line with the discussion in the Issues Paper of the different types of "DSP options", Distributed Generation through cogeneration could provide all of the following:

- energy efficiency
- fuel substitution
- peak shifting
- generation of own energy
- the ability to sell energy or load back into the market

We note that Distributed Generation is positioned on the supply side of the AEMC model in Figure 3.1 of the Issues Paper. However, we believe there is an alternative view with regard to Distributed Generation. From the perspective of the consumer, Distributed Generation has an equal or greater potential to provide benefits as a demand side response. Although Distributed Generation is undoubtedly a supply of electricity to the consumer (produced at the site of use generally), it provides strong thermal efficiency gains and should be recognized as a demand side initiative due to the reduction in load that will be evident to the grid.

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Primarily, therefore, Distributed Generation should be recognized for its load abatement potential rather than its potential for grid supply. We acknowledge that excess capacity could be sold into the grid. However, it is our belief that due to the relative cost of production generally, unless a subsidy was provided, this would only be beneficial at times of peak pricing and therefore would be used to match load rather than be exported to the grid.

In summary, for the purpose of this submission, we consider that Distributed Generation is able to achieve most or all of the DSP options in the Issues Paper in the following ways:

- Energy Efficiency through the utilization of heat for hot water or Heating Ventilation and Air Conditioning (HVAC) systems,
- Peak Shifting through the removal of peak load at times of peak pricing,
- Fuel Substitution through the movement away from generally coal fired centralized electricity to embedded gas or renewable generation, and finally
- the ability to sell excess load into the grid when appropriate pricing allows.

In support of this view Energy Australia (now Ausgrid)¹ released a study for the city of Sydney outlining their specifications for successful a demand management solution in 2012/13 (provisions increase over time):

- the solution must be on call on any given day to respond to peaking
- must effectively reduce load for 3.5 continuous hours
- -must effectively occur for a total of 21 hours across the peak period (summer for the city of Sydney)

Effective quantification and response of DSP is very difficult for a range of technologies but this is not the case for embedded generation driven off gas, this includes fuel cells and other forms of co-generation. These technologies, whilst modular, could provide a guaranteed level of load abatement or could be used to follow the load of an individual consumer and thus we submit that well managed Distributed Generation solutions could easily achieve the provisions outlined as necessary by the Distributions Network Service Provider (DNSP).

¹ TransGrid, *Request for Proposal Number: 105 /09, Non-Network Alternatives in the Sydney Inner Metropolitan Area, Technical and Commercial Requirements*, December 2009, p.16.

Market Conditions

Distributed Generation faces many market barriers to wide scale uptake by consumers. These barriers include:

- a lack of financial incentives,
- an inability to respond due to information constraints and
- a reduced willingness to respond due to transaction costs and connectivity and licensing constraints.

The involvement of a third party intermediary with an aggregated network of generation could effectively overcome these barriers and in turn create improved outcomes to the market.

Aggregation

A third party aggregator should be able to facilitate the greatest financial incentive for a number of reasons.

Firstly, capturing the value of flexible demand to networks is definitely facilitated best by a third party aggregator. The ability to negotiate the placement of generation capacity to best meet increasing demand, the ability to manage modular load in times of network peaking and the ability to negotiate with network providers to get a fair representation of revenues from network augmentation are all very difficult for an individual but could be facilitated by a third party aggregator. Additionally any grid augmentation delay that occurs as a result of Distributed Generation should theoretically also diminish electricity price rises in the pass on DNSP costs which affect all consumers.

In addition to revenues generated through DSP initiatives some Distributed Generators may want to sell excess load into the grid when cost effective. To access potential funding for excess load individuals would need to either become a registered market generator or have a power purchase agreement with a retailer. Yet, under current market conditions, neither of these options would be economically feasible.

Secondly, predicting load and selling excess capacity into the market is an unwanted and unmanageable level of risk for a single small scale generator. In regards to acting in the wholesale market significant transaction costs and licensing requirements make the process uneconomic for consumers and in regards to power purchase contracts small scale generators don't have the resources or leverage to negotiate a value reflective of market price.

It is our belief that an aggregated third party generator would best be able to facilitate and manage this process on behalf of the consumer whether in a direct sense through the wholesale market or through a secondary relationship with a retailer. Benefits from the sale of excess load by a third party could be passed on to consumers directly or reflected in discounted pricing.



Whilst it is possible that individuals could access the market directly through feed-in tariffs, for all technologies bar Photovoltaics, these would need to be mandated by government and are currently politically unpopular and potentially uneconomic to other market participants.

Furthermore, a third party aggregator would be in a much better position to manage the upfront and ongoing costs related to investment in Distributed Generation on behalf of the consumer. Lower capital costs could be attained through economies of scale in purchasing and servicing the various technologies and additional revenue streams including carbon abatement, Energy Efficiency certificates and other potential subsidies could also be facilitated.

There are also non-financial impediments faced by consumers which could be minimized by a third party aggregator, these are related to connecting Distributed Generation and the management of technology risk. There are significant issues with connection and registration of small scale generators on the distribution network. DNSPs currently control the cost and specifications for the connection of small scale distributed generation on a one off basis and this restricts the ability of consumers to utilizing Distributed Generation technology. A third party could streamline this process and in addition work with the DNSP to place Distributed Generation technology where it was needed by the grid.

As Distributed Generation technology is relatively new to the Australian market there is also significant technology risk and a lack of understanding amongst consumers. A third party would be in the best place to manage the relationships with technology suppliers and implement solutions which best matched the needs of consumers. Aggregation of Distributed Generation to third parties would provide opportunity for new entrants in the electricity market which in turn should increase competition and lead to more efficient retail pricing structures for all consumers.

Information-

The Issues Paper appropriately outlines that growth in energy usage, particularly at times of peak demand, by residential consumers is a key driver of current network investment. Whilst this is commonly understood by NEM market participants and those around the industry, consumers and particularly residential consumers are yet to grasp the relationship between their growth in use, the time of that use and rising electricity prices.

In order to obtain effective uptake of DSP initiatives the consumer has to be well informed about the potential benefits and consequences of reductions or time shift in consumption. Unfortunately most consumers are passive receivers of information and therefore their knowledge on price change comes from their bills or from general news services. In order to gain a greater acceptance of DSP programs and technologies consumers will have to understand that their patterns of consumption and technology selection, particularly HVAC systems and household appliances, are the greatest driver of increased prices in the grid.

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The ability to access key information on network constraints and material changes in peak demand is limited to consumers and third parties, yet this is exactly the information needed to work with DNSPs to effectively place DSP solutions without disrupting the integrity of the network. For this reason a greater openness in the network investment planning process and in general access to information on network congestion and future peak load predictions are needed facilitate DSP.

Regulation changes

We recognize that the dialogue around the regulation of Distributed Generation is changing rapidly with the rule changes from the stage two DSP recommendations being carried out by the AEMC and the AEMO conducting reviews of Small Scale generator participation in the NEM. However, we still consider that there are significant opportunities to assist the market conditions for Distributed Generation through DSP initiatives.

Retaining the value of financial incentives created by either exporting electricity to the grid or effective augmentation of network investment is a major concern for the viability of Distributed Generation solutions.

Distributed Generation creates the greatest level of efficiency through onsite usage but in order to act in the wholesale market a generator must dedicate their capacity to the market. This leads small scale generators towards Power Purchase Contracts with retailers. However, these contracts are generally difficult to establish and do not provide adequate compensation to the generator. A third party aggregator would be in a better position to effectively manage these negotiations and provide a DSP solution that suits the requirements of the retailer.

In terms of retaining the financial incentive from the potential abatement of load and the related augmentation of projected network spend, the means by which this value could be transferred to the appropriate DSP have been discussed in numerous reports including the Prime Ministers Energy Efficiency Taskforce, the iGrid series of reports and the UTS's Institute of Sustainable Futures report for the city of Sydney². These methods range from open negotiations between significant DSP providers and DNSP provides and a fixed per kW reduction value. As long as the method was regulated, thus providing certainty, and was even in its distribution of financial incentive, then a range of methods are acceptable and DSP providers would adapt their solutions to the established framework.

In addition, connectivity and registration issues for small scale distributed generation need to be clarified to create a more streamlined cost effective process. Currently the DNSP has a high level of control over the cost and technical specifications of connection. This inhibits an extended roll out of

² Dunstan, C. & Langham, E. 2010, *Close to Home: Potential Benefits of Decentralised Energy for NSW Electricity Consumers*, prepared by the Institute for Sustainable Futures, for the City of Sydney, November 2010

Distributed Generation capacity. If Distributed Generation capacity could be aggregated it would also be favorable to review connection provisions in order to streamline the integration of small scale generators.

As discussed previously, information has a powerful part to play in the uptake of DSP for all consumers. Whilst it is understood that, under the majority of state's regulations, reductions in electricity consumption will negatively affect the revenues of retailers, DNSPs and TNSPs and hence that these parties have a disincentive to facilitating DSP, they are also in control of the majority of network information and so external parties have little ability to assess the effectiveness of network investment or alternative options. Any changes to regulation that facilitates market participant's acceptance of DSP should also provision for greater public access to and promotion of network information.

A level of openness to information on network constraints and predicted peak demand allows third parties to independently assess potential DSP solutions and would also better inform consumers to the regional issues that affect their pricing. We believe that these provisions would be in line with the Ministerial Council of Energy's aim to create greater transparency and simplicity in the market and regulatory systems.

Conclusion

DSP options should provide significant flexibility to the National Electricity Market moving forward and, considering the negative sentiment of consumers towards the continued rise in electricity prices, we believe the uptake of DSP will be strong if the consumer can be properly informed about their impact and be provided with appropriate financial incentive. Specifically we believe that Distributed Generation will be a strong option within DSP due to the multiple benefits it provides and its broad potential for use geographically and across sectors. For these reasons the aggregation of geographically dispersed generation and a greater openness in the processes of network planning and communication of network constraints should have positive effects to future pricing for consumers and the functioning of the grid as a whole.

My Home Power looks forward to continued engagement with the commission on these issues, including those related to greater uptake of small scale generation, and would welcome any response to our submission.

Yours sincerely

A handwritten signature in black ink, appearing to read 'David Kutena', with a horizontal line extending to the right.

David Kutena

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