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26 August 2011

Mr John Pierce  
Chairman  
Australian Energy Market Commission  
Level 5, 201 Elizabeth Street  
SYDNEY NSW 2000

Dear Mr Pierce

**ISSUES PAPER: POWER OF CHOICE – GIVING CONSUMERS OPTIONS IN  
THE WAY THEY USE ELECTRICITY**

Thank you for the opportunity to provide comments on the Issues Paper: Power of choice – giving consumers options in the way they use electricity, released by the Australian Energy Market Commission (AEMC) on 15 July 2011.

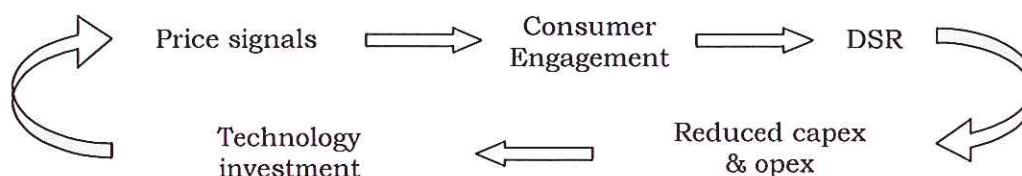
Aurora Energy Pty Ltd, ABN 85 082 464 622 (Aurora) is an incorporated, State Government owned fully integrated energy and network business, with complementary activities in telecommunications and energy related technologies. Aurora provides electricity generation, retail and distribution services to more than 270,000 customers in the Tasmanian jurisdiction.

Aurora is keenly aware of the effect of rising electricity prices on its customers. To this end, Aurora has implemented a business-wide strategy to ensure that it provides its services to its customers at the lowest sustainable price. There are a number of key points within this strategy that Aurora considers are important to the AEMC's considerations regarding demand side participation (DSP). These include:

- Aurora's overarching business driver, expressed within the distribution and energy business strategies as meeting customer needs at lowest sustainable cost;
- Aurora's distribution business strategy to use flexible demand to reduce network capital investment and consequential consumer costs; and
- As a retailer and distribution business serving non-contestable residential consumers, Aurora is able to maximise the benefits accrued through the implementation of smart technology and DSP for the benefit of customers.

Adoption of load control through use of new technology represents the most significant opportunity to limit/reduce capital expenditure within a distribution network that is driven by increasing demand. Without some form of limitation in demand growth the cost of additional network development will always be passed to customers through increases in network tariffs.

Investment in new technologies fundamentally needs to be supported by certainty of access to an effective demand side response (DSR).



This technology investment comes in the form of smart metering, communications systems, demand side response backend systems and back office systems to support newly developed tariffs.

If the value to customers is to be maximised, the technology investment has to drive a reduction in (or reduce the growth of) overall distribution capital and operating expenditures. These expenditures can be reduced via a reduction in the peak demand (or growth in peak demand) on the network that is driving the network investment cycle. The enabler to reduce peak demand is DSP, which in many instances is dependent on consumer engagement in managing the timing of their demand on the network.

However, even with cost reflective price signals, if the timing of the response is not aligned with demand driven localised network limitations, there will be limited effective benefit to pass back to the consumer through reduced expenditure and future pricing structures.

Regarding the specific questions proposed by the Paper, Aurora has reviewed these in the context of its own business strategy and practice as well as the broader Tasmanian energy sector. Aurora has identified the following key issues for itself and the Tasmanian jurisdiction arising from the questions and the Paper:

- Tasmanian market characteristics & relationship to DSP;
- Consumer incentive, ability and willingness to respond to DSP;
- Opportunities present in the current Tasmanian framework; and
- Appropriate technology and system capability.

Hence, Aurora's comments focus on these four issues. In addition, Aurora notes it's support for the submission provided by the Energy Network Australia which provides further comment on the questions and issues raised by the Paper.

The following expands on these four key issues identified by Aurora.



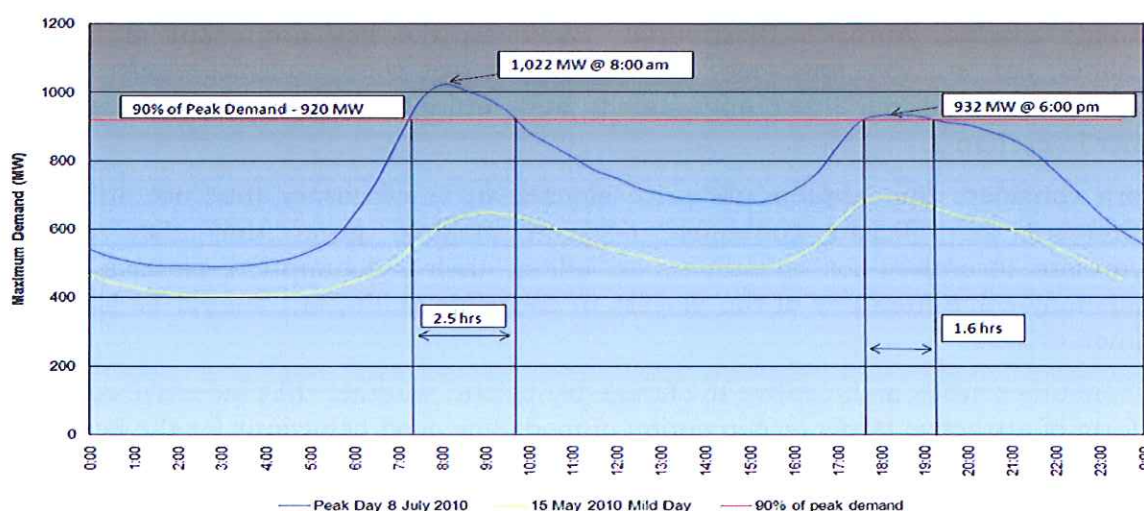
## 1. Tasmanian market characteristics & relationship to DSP

While the AEMC's proposed approach to evaluating DSP options is sensible there may be a requirement to ensure that this data is jurisdictionally based to allow recognition of the differences that occur within jurisdictions. Aurora considers that jurisdictional differences should be part of the AEMC's assessment process and criteria. This is especially true of the Tasmanian jurisdiction which has a winter peak that occurs in the morning whereas most other jurisdictions have a summer peak that occurs in the afternoon.

Variations in average weather conditions over the course of a year drive movements in electricity consumption. While a single extreme day (hot or cold) is sufficient to result in a season peak maximum demand, that day will make only a small contribution to total annual electricity consumption. A measure of the overall "hotness" or "mildness" of a season is likely to be a better indicator of how temperature is affecting electricity consumption.

In the case of Tasmania, electricity consumption is predominantly driven by colder weather which leads to higher electricity consumption related to space and hot water heating. Unlike other Australian states, summer peak demand is also predominantly driven by colder rather than hot days. For this reason, the more likely driver of electricity consumption is the number of days requiring heating load rather than the number of days requiring cooling. That is, in Tasmania demand increases as temperature decreases. Further, the demand forecasts for the forthcoming Regulatory Period are below the long-term trend, representing a continued slowing in the Tasmanian economy.

The diagram below shows Tasmania's system load profile is characterised by the aforementioned winter peak with approximately 10% of the demand occurring for only 6 hours of the winter quarter, representing 0.8% of the year:



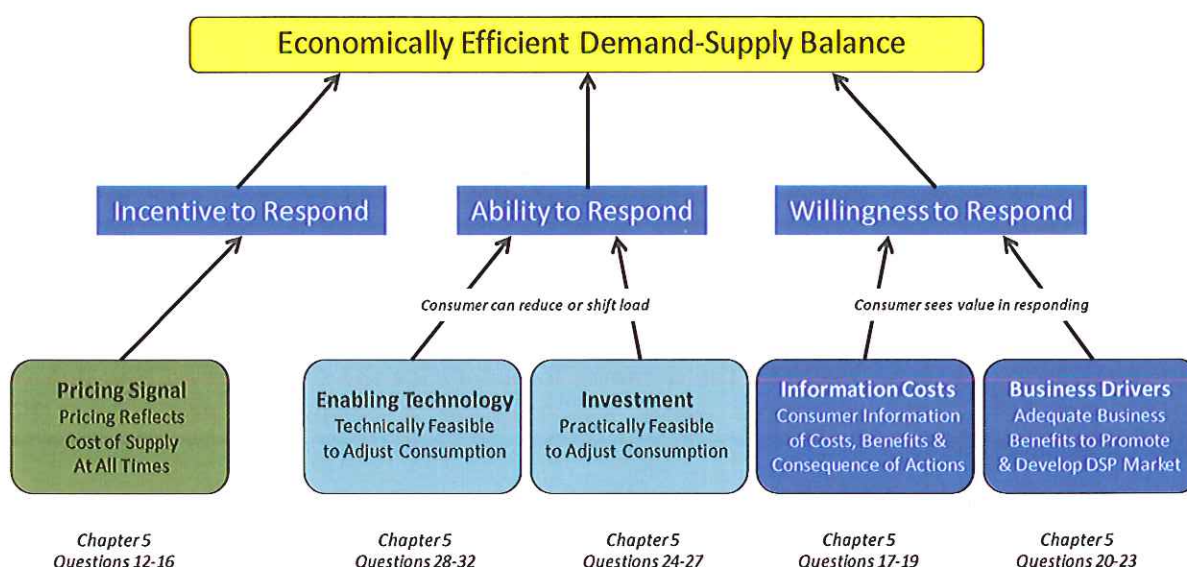
The network infrastructure required to meet these peaks, and the associated cost of this clearly indicates that the continued sole use of traditional network augmentation to deal with short duration peaks is sub-optimal. Demand side management and distributed generation options potentially offer a far more cost effective strategy.

## 2. Consumer incentive, ability and willingness to respond to DSP

As outlined in the AEMC's Issues Paper, in order to have consumer demand side participation, consumers must have an incentive, ability and willingness to adjust their consumption pattern. In short, consumers will be able to interact efficiently in the market when they:

- face the price that reflects the underlying value of resources;
- are able to adjust their consumption in response to that price; and
- see value in responding (taking into account transaction costs).

This market paradigm for efficient DSP outcomes is replicated as follows:



To achieve the required market conditions to enable consumer participation in the electricity market, Aurora's Distribution Business, the key proponent of DSP in Tasmania, can engage consumers directly or contract with multiple retailers. The consumer outcomes of direct engagement and multiple engagements are explored further in section 3.

Aurora considers that appropriate price signals are a necessary (but not sufficient) requirement for efficient consumer decision making, given that they provide appropriate incentives for consumers to adjust their consumption patterns. The signals may come from any of the players in the value chain, but should be linked to common drivers.

The consumer needs an incentive to change behaviour, whether that incentive comes in the form of attractive tariffs or perception of modelling good behaviour for the benefit of all (e.g. playing their part in protecting the environment).

While a network service provider may develop tariffs that provide an incentive to consumers to change their consumption patterns, the objective of relieving network limitations (and reduced capital investment requirements) will not be achieved if those price signals are not passed through by retailers.



There must be appropriate technology underpinned with a common platform for all participants. Without this platform there is a real risk of asset stranding occurring for both providers and consumers. Hence, consumers must be equipped with appropriate information regarding the options that are available to them and the consequences of those options. Without this information the consumer will not be in a position to make an informed decision.

Some consumer groups that have less capability or willingness to adjust their consumption behaviour still need to be provided for through availability of products and support mechanisms that consider their particular circumstances.

### **3. Opportunities in current Tasmanian Framework**

Aurora has a business structure that is unique in the NEM, with its retail and network businesses having aligned business drivers under an overarching governance framework to 'meet customer needs at the lowest sustainable cost'. This structure and alignment provides a unique window of opportunity for Tasmania to avoid some of the challenges currently manifest elsewhere in the NEM, where retailers and distributors are separated with different business drivers. Hence, the current Tasmanian framework can assist the state in realising the maximum benefits from the implementation of smart technology and DSP while minimising network costs to consumers.

Aurora is currently realising aspects this unique window of opportunity through its 2012-17 Regulatory Pricing Proposal currently under consideration by the Australian Energy Regulator. Aurora's Distribution Business will implement a strategy to maintain capital and operating expenditure at existing or reduced levels relative to the latter years of the current regulatory period. The first phase of this strategy will be a focus on driving cost reductions from current service delivery methods, together with the selective deployment of a number of proven technologies. The second phase will focus on driving efficiency by changing the way services are delivered. This involves the deployment of innovative and modern technology to deliver efficient and sustainable customer outcome in the future, further improving the efficiency of our capital and operating expenditure.

Under the current structure, Aurora can engage directly with customers to pursue DSP. An alternate market arrangement to direct engagement for Aurora's Distribution Business is to contract through multiple retailers or through an aggregator, to ensure that the consumers have the requisite incentive and willingness to respond. Under these arrangements, Aurora's Distribution Business would seek to continue to assume the responsibility for customer load as a distribution business seeking to defer capital with peak load curtailment and would structure tariffs that provide the necessary incentives to customers to adjust their consumption.

However, to achieve load curtailment and associated savings in infrastructure investment, it is imperative that retailers pass through these network congestion pricing signals to end customers. This imperative underlies the fact a distribution business requires a considerable level of 'firmness' in demand side response to underpin network capital expenditure deferral.



A key challenge for achieving DSP is that retailers' commercial tariff strategies may result in opposite outcomes to a distribution business' strategy of harnessing flexible demand to defer network investment in peak capacities. In the National Electricity Market (NEM), the energy wholesale market typically exhibits correlation between spot price (which is a key driver for retailers) and aggregate demand (which drives network businesses). In Tasmania, the wholesale market is dominated by a single hydro-based generator and is a market with unique characteristics. One structural issue is that the power system is energy constrained, not capacity constrained, unlike the rest of the NEM. This means there is a lower correlation between spot prices (and in theory contract prices) and aggregate demand. The energy spot price in Tasmania is more reflective of the opportunity cost of hydro generation and the commercial incentives around Basslink operation.

Retailers wanting to sell demand response need to provide cost-reflective energy price signals to customers. However, in Tasmania there is a lack of a credible energy market price signal for retailers to pass through to customers so they can adjust their consumption, particularly as there is a weak correlation between peak energy demand and wholesale energy prices. Consequently, retailers operating in a possible future competitive market in Tasmania under current market frameworks may have minimal incentives to align their retail pricing with demand driven network constraints.

The direct engagement approach, where Aurora's Energy Business has an incentive to respond to network constraints because Aurora's Distribution Business is part of the same company, with a joint strategic focus to meet customer needs at the lowest sustainable cost, can engage with customers to achieve DSP and enable lower distribution costs to flow through to lower prices for all customers.

In the Tasmanian context, Aurora as the distributor and retailer for non-contestable customers, has a strong commercial interest to overcome consumer information barriers to DSP, since customer and community response is key to successful business outcomes. In this regard, either Aurora is able to assume leading roles in the production and acquisition of information for consumers, by:

- engaging the wider community and providing the required information, including educating all relevant stakeholders, customer groups and consumer advocates about the realistic benefits for DSP and the need for smart technologies to lessen future network price rises as compared to the 'business as usual' scenario; and
- identifying opportunities for consumers to make informed choices about the way they use electricity, and structuring of products and incentives to facilitate consumer participation and desired consumer response.

Regarding the success of DSP options in Tasmania, such as time-of-use (TOU) tariffs, Aurora highlights that a large proportion of its residential customer base has shown a strong acceptance of TOU pricing signals. Aurora Retail currently has over 38,000 Pay-As-You-Go (PAYG) customers in the Tasmanian jurisdiction. Aurora PAYG customers have dedicated prepayment meters which are provided on the basis of a TOU pricing structure. The PAYG product is only offered to residential consumers.



Market research in 2006/07 showed that over 98% of the PAYG customers were satisfied with their PAYG system and found the system easy to use. Importantly, 95% of the PAYG customers showed an awareness of TOU pricing. A large number of PAYG customers, namely 67%, reported that they had changed their usage patterns, running appliances after 8pm and turned off appliances not in use while 61% think more about the running costs of different appliances.

This experience shows that retailers can successfully engage customers in utilising pricing signals to achieve a degree of demand side response. The key issue going forward is harnessing this engagement to achieve demand response that enables the distribution business to defer infrastructure investment.

### **Appropriate technology and system capability**

The installation and operation of the technical infrastructure to enable DSP requires a long-term vision and commitment. Therefore, it is a logical conclusion that a distribution business which deals in long term assets should be the principal entity responsible for the infrastructure investment to enable wide-area DSP. Accordingly, the market must be structured such that those who invest in the technologies required to enable DSP will retain sufficient access to such technologies (and the associated customers) in order to leverage the anticipated benefits and return such benefits to the participating customers.

Current metering and control technology has mixed levels of support for DSP. Metering currently being installed in the Tasmanian jurisdiction has the capability to support load switching via advanced programmable schedules (compared with basic off peak tariff scheduling that has pre-existed) but is not remotely accessible. Interval data metering (ToU) is also available, but facilities to remotely read are currently limited to larger commercial installations.

The short-term Tasmanian focus for DSP is primarily focused upon the control of residential electric hot water systems (which are largely uncontrolled within the state). The technologies for the control of such devices are readily available. New standards such as AS4755 are expected to facilitate DSP with a wider range of devices including air conditioners, electric vehicles, etc. Such standards should be actively promoted in order to facilitate demand management with a wide range of appliances in the future.

Undoubtedly there are various technologies which may be used to facilitate DSP. Many of these may be configured to operate outside of the supervision of an energy distributor, retailer or demand aggregator. The aim of an energy distributor in using DSP is to manage the security and stability of the distribution network whilst ensuring that network reinforcement investments are deferred or avoided insofar as possible. These considerations are paramount and it is therefore considered that DSP under the principal control of the energy distributor would be the preferable option.

Distribution networks are not homogenous. Although wide-area DSP may become available, such capabilities may only be exercised in specific areas at specific peak times of the year. This would include areas which are experiencing strong growth or have specific network constraints

The technologies used to facilitate efficient DSP generally provide the capability to view fine-grained consumption information for any given customer. Such information is of great utility in providing the capability to manage the network more effectively and implement efficient DSP. However, there are privacy issues associated with the availability of such information. Therefore, access to such information should be restricted and the appropriate privacy and confidentiality laws must be respected in the management of such data.

Aurora considers that should retailers or third parties have control of loads; potentially they may also have ultimate control of embedded generation, i.e. bringing it off or on to the grid. An inherent problem already being faced in the network is ramping up and down of embedded generation due to factors outside the direct control of any entity (e.g. a cloud passing over a cluster of photo-voltaic installations) and potential mitigation requirement of having to invest in fast acting voltage regulation, controlling discretionary loads or managing the embedded generation cluster as a negative load to meet service standards.

If you have any questions, please contact Giles Whitehouse on the above number or via email at [giles.whitehouse@auroraenergy.com.au](mailto:giles.whitehouse@auroraenergy.com.au).

Yours sincerely



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