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UE Response to AEMC's Directions Paper:

Power of choice - giving consumers options in the way they use electricity

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1. Introduction and purpose

This document sets out United Energy's (UE) response to the AEMC's Directions Paper on demand side participation (DSP), titled *Power of Choice – Giving consumers options in the way they use electricity*.

UE strongly supports DSP, and welcomes this opportunity to respond to the AEMC's Directions Paper. Our response sets out answers to each of the questions contained in the Directions Paper. In addition, UE wishes to draw the Commission's attention to the submission lodged by the Energy Networks Association (ENA). UE is an active member of the ENA, and we endorse the ENA's submission.

Before turning to UE's responses to the questions raised in the Directions Paper, it is worth recapping that DSP provides consumers with the potential to make more efficient decisions in electricity usage by changing their consumption patterns. DSP is also an important tool in the delivery of efficient and reliable network services. The three primary drivers of network investment are: replacement of aged assets; reliability standards set by governments; and the need to invest in future capacity in order to meet growth in peak demand. DSP has an important role to play in containing the third driver and thereby improving the utilisation of existing network assets, thus minimising network investment and prices in the longer term.

In time, an effective DSP market may emerge to facilitate these efficiency improvements. However, even once a market is in place, DSP providers may not have the ability or a commercial interest in providing DSP solutions that match the timing, location or volume of demand response required by a network business in order to defer traditional network investments.

Given these limitations, and the unique position of network businesses in the electricity supply chain, there is an important role that networks can play in undertaking DSP activities, where these activities improve the efficiency of regulated network operations and investments, and support the longer-term interests of consumers. Costs are likely to be minimised where DSP can be delivered cooperatively with other parties, and UE welcomes such cooperation.

UE has already achieved success with some DSP activities, and it has implemented time-of-use network tariffs. As noted in the following submission, the company is also developing or trialling a number of innovations aimed at enhancing DSP; reducing network costs; and increasing the benefits to customers.

Government and regulators have already recognised the important role that network businesses can play in undertaking DSP. For instance, the AEMC is currently assessing rule changes that strengthen obligations on network businesses to consider non-network alternatives and prepare demand side engagement strategies. However, obligations alone are insufficient for networks to proceed with DSP projects as an alternative to traditional network investment. Network businesses need to be able to fund and earn a return from DSP activities that is at least equivalent to investing in traditional network infrastructure. As the regulatory framework recognises in other respects, commercial incentives to undertake DSP will drive better outcomes than can be achieved by imposing regulatory obligations.

2. Consumer Engagement and Participation

Questions: Access to energy consumption - load profile data

1. What should be the arrangements for consumers (or third parties acting on their behalf) to access their energy data?
2. Do you consider that there could be a role for an information service provider in the market as a mechanism to provide consumption data to consumers?
3. Should amendments be made to the current NER clause 7.7(a) to facilitate consumer access to consumption information? If so, how?

There are a number of avenues already in place for consumers to access their metering data whether by file format, email, graphical or these more innovative electronic means.

UE is currently operating a portal service which is available to consumers to access their metering data. UE is also aware that other distributors provide similar portal services to customers, and some large retailers are planning to offer portal services shortly.

In Victoria, the Energy Saver Incentive scheme will also be used to encourage the uptake of In Home Displays (IHD) and energy portals.

Clause 7.7(a)(7) of the NER provides that consumers are entitled to access their energy or metering data on request to their current retailer, the financially responsible market participant (FRMP). This clause allows the consumer to request access to their data from their current retailer; but does not prevent a party other than the FRMP from providing the data to the consumer. For example a customer could make a request to their current retailer for access to the UE energy portal. Retailers could be obliged to verify that the customer is entitled to access the data at the consumer's metering installation and pass the request on to a distributor who provides such services.

UE notes that under the NECF, clause 86 of the NERR requires the distributor to provide energy consumption data on request by a customer. This clause could be interpreted as allowing the customer to access data directly from the distributor or it could be read in conjunction with NER clause 7.7(a), to conclude that, under NERR clause 86, the distributor can only give access to the customer if the customer can show that it has made a request to the retailer. UE considers that the NER should be changed to clarify that customers are able to obtain access to their energy or metering data directly from their distributor.

NER clause 7.7(b) states that a consumer may only have access to energy data in their meter if there is password control, otherwise access to data is limited to metering data from the metering data services database or metering database. It is the Responsible Person's role to provide access to metering data to those persons entitled to access that data under clause 7.7(a).

Whilst NER clause 7.7(b) contemplates read-only style passwords being allocated to the FRMP - who may provide to the consumer - it may be useful to consider the NER arrangements in terms of security keys and other security measures which allow binding access or portal access.

It would be beneficial if the customer were able to make a request for data access to either their retailer or the distributor under the NER. This would provide a workable arrangement for the responsible account holder to request access to data, and may reduce the delays experienced under the present arrangements. Further, amendments to the NER should be consistent with the proposed draft Victorian Energy Rules which allow the customer or their representative to request on behalf of the customer access to energy data or metering data.

The Directions Paper suggests that further rule changes are required so that consumers may have access to their data and engage with third parties. In response to the Commission's observation, UE notes that the portal and IHD services offered today provide a consumer with the ability to download their data at any time. The consumer is free to provide this data to third parties who may assist the consumer in making energy consumption decisions. For instance, the downloaded data could be provided to prospective retailers, energy service companies, or information service providers.

Where data is streamed to a third party with the consumer's consent on a daily basis, then the consumer needs to be fully aware of their obligations to request these services to commence and cease when the consumer's relationship with the third party changes.

Question: Costs of consumption decisions

4. What information provisions could be put in place to improve awareness of the costs of consumption and the use of particular appliances/equipment, so that the benefits of taking up different DSP options can be realised?

Energy portals generally provide access to validated metering data (ie the previous day's data). However, some portals may be able to provide raw or unvalidated data from the meter. This raw data would be similar to the data available on an IHD. These displays allow the consumer to observe the immediate impact on energy consumption when particular appliances are switched on and off.

At a recent DRET session on energy information hubs, an example was provided of a situation in which changes in prices had driven a distinct change in consumer behaviour. The example cited the impact on consumer behaviour of petrol prices in the US increasing to $4/gallon. It was observed that the price increase has driven consumers to purchase smaller, more energy efficient cars. This outcome is not surprising, given that the retail prices seen by consumers have generally reflected the full extent of rising prices in global crude oil markets. This provides an interesting contrast to a market in which retail prices are capped, or the application of more cost reflective, efficient pricing is constrained. Clearly, where retail prices mute the effects of changes in the underlying cost of service, the scope of the response of a well-informed consumer will be similarly lessened.

The Directions Paper notes a number of improvements such as appliance labelling schemes, and more frequent billing cycles, as means of providing greater information to consumers on the costs of consumption and the use of particular appliances. UE is supportive of these approaches.

We suggest that the development of the AER Price Comparator Website provides a good opportunity for information to be provided to consumers to improve their awareness regarding the costs of consumption. An organisation such as the ABS could be used to collect half-hourly data through household surveys, and create a database of consumption patterns for different customer segments. That data could then be used by the AER Price Comparator Website to calculate estimates of energy costs for typical customer segments, based on current retail price offerings.

3. Efficient Operation of Price Signals

Questions: Network pricing and incentives

5. Should network charges vary by time of use?
6. Should NSPs charge on a volume or capacity basis?
7. What changes are needed to market conditions to facilitate more cost-reflective network pricing?

UE considers that network charges should vary by time of use. Section 5.8 of the Directions Paper notes (correctly) that UE has implemented seasonal time of use tariffs, and these are intended to provide a strong signal to minimise use of the network in peak times, and encourage use of the network during off-peak times.

The vertical separation of responsibilities and functions across the supply chain means that cost reflective network price signals are not necessarily reflected in the retail prices paid by end consumers. Moreover, as noted in the Issues Paper, rules around network and retail pricing may be restricting the extent to which distributors and retailers can reflect costs in their tariffs. That said, UE generally concurs with the Commission's view that efficient DSP does not require all consumers to face time-sensitive or location-sensitive tariffs:

- It is important that consumers have the choice to select a retail tariff that best suit their individual circumstances and preferences.
- Many consumers (particularly residential and other small consumers) will prefer to face a flat tariff. Such tariffs are likely to include some form of risk premium to compensate the retailer for its increased exposure to price fluctuations (compared to a tariff which passes some of those fluctuations onto consumers). As long as the risk premium included in flatter tariffs is transparent to consumers – and is an accurate reflection of the retailer's risks – any choice the consumer makes will be equally efficient. The retailer would still have incentives to minimise the electricity it purchases (and its use of networks) at peak times in order to minimise its costs.

Energy data shows that average consumption is decreasing, while maximum peak demand is increasing. Infrastructure costs associated with meeting this growing peak demand are a significant source of upward pressure on network costs and prices. These considerations point to a network charging structure that is capacity (demand) based, rather than volume (energy) based.

The Energy Supply Association of Australia (ESAA) has noted[1] that distributors and retailers in Australia and internationally are conducting trials in relation to dynamic pricing. These trials indicate that there is scope for peak load reductions of between approximately 1% and 13%. However, the ESAA also found that the size of peak load reductions that could be achieved through the use of "critical peak pricing" arrangements were likely to be significantly greater than those achieved through time-of-use pricing alone, with possible reductions ranging between approximately 11% and 36% in Australia.

"Critical peak pricing" and/or critical peak incentive arrangements involve at least one-day ahead notifications being sent to customers to advise them of a critical peak pricing event. During a critical peak pricing event, electricity prices would be significantly higher than normal time-of-use peak prices. Alternatively, during a critical peak pricing event, customers could earn an incentive payment by reducing their demand from a determined baseline by an agreed amount.

UE considers that the regulatory arrangements should not preclude distributors and retailers from developing new pricing initiatives such as dynamic pricing, critical peak pricing and the re-balancing of network charges. The regulatory framework must be sufficiently flexible to enable these pricing initiatives to evolve in response to customer needs and technological change. Opportunities for new pricing initiatives will arise in relation to electric vehicles; direct load control for air conditioning; energy efficiency; and small scale solar generation.

[1] ESAA, *Analysis of initiatives to lower peak demand*, draft report, 5 March 2012

Questions: Retail pricing and incentives

8. Do retailers have the right incentives to pass through appropriate wholesale costs and network charges to consumers?
9. Do retailers have an incentive to minimise the costs of their customers' consumption?

UE concurs with the Commission's observation that retailers' principal role in the market is to act as an agent for consumers in contracting for energy services and packaging them to meet consumers' requirements. While many customers may not want to be exposed to the variability in wholesale and, to a much lesser extent, network tariffs, this does not imply an inefficiency or market failure. It is appropriate for a competitive retail market to offer customers tariff and service options.

The Victorian market exhibits a significant level of retail churn. This tends to suggest that there is a willingness on the part of consumers to seek out alternative product offers in the market. In a competitive market, retailer should be focused on delivering the tariffs and services that customers value most. In a properly functioning retail market it would be expected that retailers will offer services that minimise the costs to their customers.

It is important to note, however, that the provision of DSP services should not be the sole domain of the retailers. For example, where long term savings in network costs can be achieved through DSP initiatives, the distributor may be much better placed to provide DSP services to the customer. This is because the network company has a long term relationship with the customers which may not be readily mirrored through a retailer-customer relationship.

Questions: Cost-reflective tariffs

10. Would a tariff with a fixed, variable and network LRMC element as described in section 5.8 closely reflect the costs of supplying electricity?
11. What are the restrictions on retailers offering such a tariff?

The Directions Paper suggests that the LRMC (network) component of the cost reflective retail tariff could vary significantly across the network. This would give rise to the possibility of different tariff shapes applying across the day in a large number of different areas within a distributor's territory.

Conceptually, this may be attractive depending on the extent of the differences in LRMC across the network. However, careful consideration would need to be given to the question of how such arrangements would work in practice. For example, the approach would have the potential to increase the number of network tariffs (and potentially retail tariffs), which creates some additional complexity for network companies, retailers and customers. There are provisions contained in the Victorian Energy Retail Code that govern retailers' offerings to customers, and any changes to terms or conditions in retail contracts. These provisions require retailers to give prior notice to customers of any variation in tariff amounts or tariff structures, and in certain circumstances these changes require customer agreement.

UE would be concerned if policy makers or the Rules were to mandate a particular tariff structure. The approach should be to allow network companies and retailers to assess the appropriate level of cost reflectivity and complexity in network and retail tariffs that consumers prefer. This may involve a gradual move away from current tariff structures towards network and retail tariffs that reflect network capacity and time-of-use cost drivers. It may also involve the payment of incentives or rebates to customers in return for agreeing to have their consumption reduced at peak times. Such payments can provide

consumers with a strong price signal, and hence may be considered as a proxy for a cost reflective network price.

Question: Potential for price signals to promote DSP

12. Can efficient levels of DSP be achieved without cost-reflective prices? What considerations are needed to achieve this?

Evidently, DSP is only attractive to customers if it produces a cost saving. The efficiency of the DSP depends on customers facing the correct price signal. It is possible for efficient price signals to be achieved through tariffs or through contractual arrangements to reduce demand at peak times, for example. However, a contractual arrangement for load shedding would not obviate the need for the service provider to ensure that both parties obtain value from the transaction. In effect, the contractual arrangement would still need to be cost reflective.

Questions: Market conditions required for DSP

13. What other market conditions need to change to enable cost-reflective prices? Will the benefits from improving the cost reflectivity of price signals outweigh the costs of the actions to improve them?
14. Are changes to the current regulatory arrangements required to provide stronger incentives on NSPs and/or retailers to align price with cost?

UE supports market-based mechanisms that provide consumers with incentives and the necessary information to make efficient energy-use decisions, especially in relation to electricity use at peak times.

UE considers that a key ingredient missing from the Victorian market is effective consumer participation. Specifically, there is a need for broadly-based customer engagement campaigns to raise awareness about the impact of current consumption patterns on network costs and what consumers can do to reduce the upward pressure on network investment. Consumers also need to be provided with ready access to information in relation to their own energy use. Without addressing this issue first and foremost, other potential initiatives, such as cost-reflective pricing will not achieve the desired traction in relation to addressing the growth in peak demand.

For its part, UE has sought to address this issue by developing an Energy Use Portal capability. It is hoped that this initiative will help to bridge the education gap with consumers. UE is partnering with consumer-channels-to-market to assist in providing useful information to consumers. In this context, it is noted that the AER has already endorsed a joint UE – City of Manningham Consumer Education Pilot under the DMIS scheme. UE is also in discussions with several retailers to explore further joint opportunities to provide consumers with energy-use information in a timely way.

One barrier that UE notes is that a distributor is not able to provide a customer with that customer's own energy or metering data without the prior authorisation of the customer's retailer. In our trial activities to date, this has already proven to be an issue in that some retailers have not provided authorisation for the release of customer data. As noted in our answers to questions 1 to 3, under the NER and NERR, customers should be able to request and receive their energy or meter data in a timely manner from their retailer or host distributor.

As already noted, average consumption across UE's network is decreasing but maximum peak demand is increasing. Network investment associated with meeting this growing peak demand is a significant source of upward pressure on network costs and prices. UE considers that the AMI infrastructure which

is currently being rolled out provides a platform for implementing initiatives that would increase the opportunities for DSP, and thereby reduce the need for new network investment. The company has work underway at present to examine the costs and benefits of these initiatives.

However, UE considers that focus during the current regulatory period needs to be on building consumer awareness of peak demand energy use issues. The focus during the next regulatory period can then turn to targeted evaluation of specific initiatives, such as direct load control in specific areas. These views are further articulated elsewhere in this submission.

UE supports the ENA position with respect to regulatory enhancements that can support-network initiated DSP, which include:

- balance the incentives between capital and operating expenditure;
- balance the incentives to undertake DSP within rather than at the beginning of a regulatory period; and
- ensure consistency in the arrangements for transmission and distribution businesses.

While these regulatory enhancements are necessary to promote efficient DSP, UE is continuing to pursue a number of DSP initiatives, which are at various stages of development and approval, within the context of DMIS. These include:

- City of Manningham (CoM) District Energy Services project: This initiative was approved by the AER under the DMIS, and it represents a 'classic' greenfields model focussed on recognising a specific network area where the growth of residential and commercial development is extraordinary, with commensurate energy use and network loading impacts. Working with CoM, UE is encouraging DSP as an alternative to traditional network investment solutions. Whilst UE's distribution area has relatively few 'greenfield estate' developments, it seeks to leverage these new models where they provide a viable alternative.
- City of Manningham Energy Portal Trial: This trial is focussed on providing educational and consumer advice tools, in conjunction with commercial partners with ownership of the consumer channel-to-market.
- Joint Retailer-Distributor Trials: UE is presently in discussions with retailers to progress innovative DSP opportunities, supported via DMIS funding.

During its most recent electricity distribution price review, UE requested an expenditure allowance of $10 million to develop targeted DSP initiatives during the 2011-15 regulatory period. Unfortunately, this request was rejected by the AER. UE considers that there is insufficient provision in recent regulatory decisions for the costs of investigating, developing and implementing DSP initiatives to promote widespread investment in non-network alternatives to meet peak demand growth.

4. Technology and System Capability

Questions Supporting efficient investment decisions in DSP technology

15. Are there any practical additional mechanisms that could help alleviate the barriers to consumer investing in DSP technology?
16. What should be the role of intermediaries such as ESCOs in addressing the barriers to efficient consumer investment and what factors could be impeding the development of these parties?

Consumers' attitudes towards, and preparedness to engage in DSP is a key question for the Commission's review. Consumers' engagement in DSP may take many forms, and may vary from relatively simple actions to complex arrangements. The potential market for DSP is therefore highly segmented or stratified.

At one end of the spectrum, UE agrees with the observations set out on page 85 of the Directions Paper, regarding the alternative investments available to assist the consumer to save energy (such as timers and remote control power boards). These solutions provide very powerful capabilities, and for modest investments they can deliver significant consumer benefits and peak demand reduction. For instance, Energex completed trials in 2006/07[2] indicating that simple investments in two or three time-switches, coupled with a time-of-use tariff and education could reduce peak demand by 0.3 kW per household. The key factors limiting the uptake of such devices is a lack of consumer education, limited tariff incentives and poor marketing of the devices.

Almost without exception, education and energy management pilots initiated by retailers and distributors have demonstrated willingness for consumers to participate in energy efficiency programs. Trials involving Direct Load Control (DLC) of consumer appliances demonstrate that significant peak demand benefits can obtained (up to 1.7kW / household in the OG&E trial).

However, a barrier to some cost-effective appliance management programs is the lack of compliance with Demand Response Standard AS/NZS 4755. Indeed, as at August 2011 only 19 models out of 1534 household air-conditioning units (APEC Nov 2011, Dr George Wilkenfeld) had inbuilt capability ready for use in DSP programs. These standards provide an essential foundation for long term, cost-effective DSP programs, but their lack of penetration into consumer household appliances represents a significant barrier to widespread DLC-based initiatives. It is noted that a Peak Demand Management Trial completed by Western Power in 2011 estimated that retrofitting costs would be in the region of $300 per appliance, with significant associated implementation issues.

UE suggests that greater attention must be paid to consumer stratification, and that effective engagement needs to leverage the rapid increase in the use of consumer electronics (eg. iPhones). As a minimum, this approach can expand the breadth of consumer participation to gain a minimum Demand Management benefit from a wide consumer base, whilst supporting specific initiatives involving higher participation (and commensurately greater rewards) to those consumers willing to invest in those alternatives. Thus a simple stratification might take the following form:

- Voluntary / low investment consumers: Ideally with a simple, say, $5 iPhone app, the consumer can participate in informed choices with respect to energy use, and receive timely information in advance of peak energy use days (per Energy Australia's day-ahead notification trials), with the opportunity to receive some basic reward for their participation. At this level the consumer may or may not choose a time-of-use retail tariff.
- Active Energy Aware consumers: These consumers may be prepared to invest up to, say, $100 in appliance switching capabilities to make a contribution to benefit both themselves and society in general, and will actively change energy tariffs to achieve a long term benefit. They may also have invested in or be willing to invest in solar PV options or energy efficient appliances.

[2] J. Beal, Imagine…Residential Energy Management Assisted By Utilities, For Consenting Customers – An Approach To Large-Scale Demand Response for the Residential Segment, MMI Conference March 2006 and J. Beal, Informative Meter and Energy Log Book – Informing and Empowering Residential Customers' Energy Management Efforts, MMI Conference May 2007

- Proactive Consumer: These consumers may be prepared to invest up to, say $500 to actively participate in DSP technology and energy efficiency programs, in addition to previous investments in solar PV options, insulation, double glazing and efficient appliances. Such consumers are likely to review carefully the cost-benefit case for those investments.

UE does not doubt that there are sub-categories of consumers that would accept defined DSP offers and that these categories are broad in nature. UE also believes that each of these broad consumer categories requires education and information suited to their particular profile. Generic marketing is therefore unlikely to be effective, and this represents a challenge to the natural owners of the consumer engagement channel. In this respect UE is actively seeking to work with the customer engagement channels that understand this form of stratification, to target the appropriate offer to each consumer segment.

In addition, UE is investigating potential demand-side solutions to emerging constraints where network elements predominantly serve small business / commercial customers (where DSP incentives may be split between a landlord and commercial tenant). These network elements have a predominant afternoon peak, and co-investment or subsidised investment in solar PV solutions may represent a viable peak demand management alternative to traditional network augmentation.

The role of Government in facilitating and promoting DSP and energy efficiently generally should not be understated. The success of recent Victorian water conservation campaigns ("Target 155"), and daily news declarations of 'Total Fire Ban Days' illustrate the potential effectiveness of well-designed, broadly-targeted campaigns that make effective use of mass media. The use of similar campaigns and communication channels by Government to encourage DSP should be considered. For instance, the Government could implement a campaign to educate customers of the benefits of reducing electricity consumption on "High Peak Energy Use" days, and then use mass media communication channels to advise consumers of forthcoming "High Peak Energy Use" days.

In response to the question of the role of intermediaries such as ESCOs, UE notes that it supports market-based mechanisms for engagement of non-network alternatives to meet peak energy demands. In this respect, UE is supportive of the Commission's initiative with respect to Small Generation Aggregation to reduce barriers, and allow for specific micro-generation site participation.

The role of industrial and commercial Demand Aggregators is largely proven in electricity markets such as Western Australia, but it is to be noted that UE has limited sites in its distribution area that qualify for specific attention. That said, these opportunities are periodically reviewed with third party providers on a case by case basis.

Question: Commercial driven investment in DSP technology

17. What amendments to the metering arrangements in the NEM are required to facilitate commercial investment in metering technology which supports time sensitive tariffs?

The Directions Paper outlines a number of issues relating to smart metering technology and smart grids that need to be addressed. UE concurs with the issues identified. In addition, UE considers that the minimum standard for metering for small customers should also be included. Australia is small in the global metering market and it may be useful to have a minimum standard of metering for the mass market to encourage standardisation and economies in the Australian metering market.

The Directions Paper states that competition concerns have been raised about smart meter data services if the network businesses have a privileged position compared to other parties. The National Stakeholder Steering Committee (NSSC) has raised the roles and responsibilities for the new smart metering functions and the need to undertake a gateway review with the Standing Committee of Officials (SCO) in

2010. As the Commission notes, investment may be adversely affected by the uncertainty regarding the roles and responsibilities of these new functions.

Questions: Consumer choice in metering capability

18. Are the current arrangements sufficient to facilitate a consumer's decision to install their own meter as a revenue meter? If not, what changes to the current arrangements are required?

19. Are any amendments to the arrangements required to encourage either the network businesses or retailers in invest in metering capability in order to support DSP options?

The Directions Paper outlines a number of reasons why retailers may have limited incentives to voluntarily roll out smart meters. These include:

- the cost of identifying and marketing interval meters to consumers;
- the risk that the retailer is exposed to stranded costs if the consumer churns retailer or premises; and
- the increased costs of data management.

The Directions Paper suggests that only consumers with a less peaky load profile who are likely to gain from time-of-use tariffs are likely to be attracted to interval meters, implying that the remaining peaky consumers with accumulation meters are likely to face steeper price increases as a result.

If the roll out of interval meters is not mandated, distributors and retailers will both face these types of risks, including the additional costs associated with meter churn. Under a customer opt-in interval meter approach, presumably there is an opportunity for the next consumer to hand back the interval meter with no exit fees (since they did not agree to the installation of the interval meter). Further, where the consumers remaining on accumulation meters are faced with a deteriorating net system profile - and hence more significant price increases - those consumers do not have the information to decide on time-of-use tariffs or demand side options, which may be of benefit as the quarterly index read does not provide sufficient information.

Consumers are able to elect to have a remotely read interval meter installed today if they wish, and their retailer is able to organise such arrangements. However, these arrangements have generally been seen as cost-prohibitive for small or mass market customers, and such low volume arrangements are costly for the retailers and distributors.

The Directions Paper notes that IT systems and time-of-use tariff development and implementation are expensive for retailers. Similarly, low volumes of consumers' requests - whilst facilitating consumer choice regarding uptake of interval metering - also have additional costs in terms of low volumes of time-of-use tariff penetration, and low volume of take-up of smart metering services or demand side options.

The current metering regulatory arrangements in the NER are sufficient to enable a consumer to request and receive an interval meter. The NER does not facilitate the consumer installing or maintaining their own meter, as the meter needs to be managed by an accredited metering provider selected by the Responsible Person. In Victoria, metering charges have been unbundled from network use of system charges for many years, which facilitates the comparison of charges.

Question: Optimising the value of technology and system capability

20. Are there aspects to the arrangements regarding the integration of DSP technologies into energy networks that requires further consideration under this review?

The standardisation of protocols to allow consumer devices to integrate with the energy networks is already starting to occur in the marketplace. In the case of UE, our smart meters have Zig-Bee capability to allow integration with customers' Zig-Bee enabled devices via the home area network.

Many appliances are now being developed that are Zig-Bee capable. This platform enables demand management applications. As long as distributors are selecting technologies that are compatible with customer DSP technologies and the technologies used are based on open standards for interoperability, no further consideration is required.

It is important to foster innovation in this area and avoid prescription in relation to type of technology. It is natural that customers will prefer some types of technologies over others and it is important for customers to experience various product options to gain customer acceptance of a particular technology. Investing in one particular type of technology without customer involvement is likely to fail.

5. Supply chain interactions

Question: Distribution of DSP impacts across the supply chain

21. Can you provide a practical example of a DSP option which could deliver a net benefit to the market and also to the various parts of a supply chain. What are the reasons for such opportunities not being captured today?

The key issue is distributor risk. The DSP equation at the aggregated consumer level at present carries a number of incremental risks (behavioural uncertainty under opt-out provisions and consecutive-day peak weather conditions) that require further medium term examinations and trials to establish a reasonable degree of surety as a supply alternative. The current distributor tension between efficient capital investment and maintaining supply (via reliability incentives) is well balanced.

The current and proposed UE activities (and those of other distributors) are focussed on assessing this risk model as a basis for pursuit of non-network alternatives to the peak demand problem. As previously noted, the AER's support for UE's initiatives was very limited, with the AER's distribution pricing determination allowing only 20% of the funding for UE's initiatives over the 2011-2015 period.

Notwithstanding this, in addition to the initiatives already approved under DMIS (consuming 2011 and 2012 monies), UE has several further initiatives in the planning and design phase, which will examine non-network options. UE is planning trials focussed on utilisation of DSP to offset peak demand growth on specific feeders within the network. Each of these feeders has specific augmentation and consumer profiles. UE will table these trials for approval with the AER in due course and will provide details of the trials to the AEMC, subject to final sign-off and internal approval.

However, UE has identified various potential issues of concern:

- Multiple trials have demonstrated that voluntary participation in DSP is not nearly as effective as incentivised participation. The trials also show that contracted direct load control delivers the best value in terms of peak demand reduction. Customer contracts need to be of sufficient duration to test performance compared with network alternatives from a network risk and reliability perspective.
- Contract Opt-Out provisions do not deliver sufficient certainty for network planning purposes. While contract opt-out provisions may be reasonable from a customer protection perspective, it is important that these provisions do not inadvertently undermine the potential DSP benefits that are available to customers.

- Retailers and other participants (eg. Small Generation Aggregators) should be allowed a reasonable degree of flexibility in their DSP offers. It is important that innovation is not constrained unnecessarily by regulatory requirements.

Questions: Co-ordination across the supply chain

22. How do the current market arrangements promote co-ordination across the supply chain to promote efficient DSP? What potential improvements should be considered?

23. Do you consider that there is inconsistency between how the wholesale and market sectors value DSP impacts? If so, is this a material problem to be addressed?

The Directions Paper notes that there are two types of regulatory mechanisms to promote efficient DSP: Demand Management Incentive Schemes and energy savings schemes. Neither of these regulated incentive schemes permit the consideration of system wide benefits. The regulatory test for distribution (RIT-D) - which is currently being developed as part of Rule changes to give effect to a national distribution planning framework - provides a mechanism that facilitates consideration of system wide benefits.

While the regulatory framework (including the proposed RIT-D) generally supports efficient DSP that is aimed at relieving particular network constraints, there is a need for minor changes to the NER and to AER practices to better support network-initiated DSP. These include:

- requiring the AER to allow distributors to recover ongoing operating costs for network support in subsequent regulatory periods in a similar manner to that allowed by transmission network service providers;
- allowing distributors to recover the costs of non-network transmission connection solutions from customers;
- requiring the AER, in consultation with the distributors, to adopt an enhanced demand management incentive and embedded generation connection scheme (in the place of the current DMIS) to allow network service providers to capture a portion of the benefits of reducing costs in other parts of the supply chain;

  and

- removing depreciation from the capital incentive arrangements for distributors so that the bias is not created against switching from building network assets to IT-intensive DSP initiatives.

Question: Effectiveness of the supply chain at capturing efficient DSP opportunities

24. Can market mechanisms be improved to facilitate supply chain interactions for efficient DSP? If so, what options should be considered by this review and what considerations should be taken into account?

Cost reflective network tariffs and efficient competition should ideally enable network business to signal the value of energy management services. The provision of cost reflective network tariffs to consumers is unlikely to be palatable to consumers or governments in the immediate term. Improvement in this area of cost reflective pricing and appropriate consumer protections is required. However, consumers will need time to increase their confidence before widespread engagement in more innovative DSP products will be possible.

That said, innovative pricing is not a 'silver bullet'. For DSP to be effective a range of measures are required. These include network-initiated DSP activities such as direct control of residential loads in specific areas, or contracting with commercial and industrial customers and embedded generators for network support. While the need for such measures may decrease over time as consumers adjust to more efficient price signals and their responses become more predictable, it is likely that there will remain a need for network-initiated DSP activities that target specific areas.

Given these considerations, distributors should continue to have a role in pursuing DSP options. This can be readily accommodated by the direct customer relationship provided under the NECF.

Questions: Role of cost reflective pricing

25. Would fully cost-reflective price signals enable the supply chain to act in a co-ordinated manner towards efficient DSP opportunities or would additional amendments be needed?

26. Would applying a network tariff scheme, similar to Orion's approach, be effective in the NEM?

Cost reflective signals within a supply chain, where each component of the chain has different cost drivers (i.e. Distribution, Generation, Transmission and Retail), is difficult and complex to communicate to end use customers.

Orion's approach seems to target its larger customers by dynamic and peak demand charges to achieve a reduction in infrastructure costs. Although more detail is required to understand Orion's approach fully, it appears to be similar to UE's dynamic and peak demand charging for its large customers. Growth in peak demand in Victoria is driven mainly by residential air-conditioning, and therefore retail prices would need to reflect network charging structure if customer behaviour is to change significantly.

Question: Co-ordination across the supply chain

27. What are your views on possible approaches to achieving co-ordination across the market participants in the supply chain?

UE recognises the problem of split incentives and the potential desirability of co-ordinating potential DSP proponents across the supply chain. However, there are significant risks if a regulatory solution is imposed on the market. The benefits of DSP will be maximised by allowing commercial arrangements to evolve and by removing regulatory impediments to efficient DSP. UE favours an approach that allows commercial relationships to develop between parties along the supply chain, either directly or through intermediaries.

Question: Value of DSP benefits to the market

28. What should be the approach to quantify the value of DSP options?

UE accepts that the total societal benefit should be taken into account in quantifying the value of DSP options. It is not sufficient to simply consider the benefits of deferring network investment, nor is it acceptable to have multiple claims against a single benefit in the total value chain. Guidelines should be provided on how the value of DSP options is to be assessed.

In addition it is noted that the distributor role carries an obligation to deliver efficient network investment in order to maintain reliability of services and network security. Penalties are associated with any failure to achieve reliability standards. This risk equation is finely balanced under the current regulatory arrangements. The DSP equation at the aggregated consumer level presently carries a number of risks (behavioural uncertainty under opt-out provisions and consecutive-day peak weather conditions) that require further medium term examinations and trials to establish a reasonable degree of surety as to DSP as a supply alternative. For example on the 3rd day over 40°C in Melbourne, the default rate of consumers opting out of a DSP program has not been established. Medium term behavioural studies can establish a reliable opt-out value that can be factored into network planning and supply considerations.

UE supports the proposition that DSP benefits need to accrue both for availability and dispatch for the full peak demand benefit to be achieved. However UE is also concerned about the long term sustainability of rebate-based models, foreseeing issues equivalent to those associated with the benefit changes in the FIT schemes - causing step changes in consumer behaviour. In the event of step-down changes in the value of the DSP rebate after say 4 years, the security of both the network and supply could be seriously in question if consumers do not perceive the residual rebate to be sufficient to warrant their participation. The equivalent issue could arise in the event that sufficient rebate value indexing is not supported.

Question: Methods to forecast the impacts of DSP option

29. Should standardised, common methods to forecast the impacts of DSP be developed? Is there a need for common approaches between network and operational planning?

UE accepts that common methods to forecast the impacts of DSP need to be developed, noting that the factors influencing peak demand in each state and distribution network have unique characteristics.

UE concurs with the discussion on page 113 (section 7.5.4) of the Directions Paper. For demand response to be valuable as a resource to address peak demand, it must be dependable and predictable. As the Commission notes, when a program operator “pushes the button” they need to know that they will get the amount of demand reduction that they are expecting.

Estimation models need to use specific case examples as the basis for forecasting the impacts of DSP investments. Longer term information of this nature is very limited at present. However, UE has taken note of various studies (in progress) as input to its planning of demand management initiatives. One such study (Ergon Energy and Magnetic Island) has demonstrated three consecutive years of demand reductions in seasonally adjusted peak demand, enabling network capital expenditure to be deferred for at least 6 years.

With respect to operations, one aspect that UE proposes to capture with its trial activities (assuming sufficient funding) is a number of key operational matters to support further opex modelling. This extends from the customer and premise activities during program establishment, into the control room operations during execution and management of these programs. Whilst a number of initiatives (eg Western Power / Synergy Direct Air-conditioner Load Control offer) identify customer side costs, the impacts on the event management and control room operations has largely been ignored.

Question: Single actor option

30. If the required co-ordination across the supply chain cannot be achieved, should a market participant be assigned with the responsibility to procure DSP options? If so, what issues need to be considered in the design of such an approach?

UE considers that the distributor provision of DSP capabilities should not and does not preclude retailers or other participants from offering DSP initiatives. UE encourages market innovation and would seek to co-operate with providers of innovative DSP solutions that deliver value.

UE would be concerned if arrangements inhibited customers from participating in their own right. For instance, if a customer elects to invest in significant DSP capacity beyond their own requirements and then seek to leverage this during times of peak demand to the benefit of the industry, then mechanisms need to exist in the market to support that form of participation.

UE has not established a position with respect to whether the distributor should act as single point of benefit capture. The distributor is performing this role (in effect) for the FIT schemes and with appropriate regulatory compensation this could be extended to DSP initiatives.

6. Wholesale and ancillary services market

Question: Load forecasting incorporating DSP

31. Should there be additional obligations on market participants to provide information to AEMO regarding DSP capability?

To facilitate effective planning and operation of the market by AEMO, UE would support a proposal for distributors to provide AEMO with their contracted DSP capability on an annual basis at the time that maximum demand forecasts are submitted to AEMO. This capability should be provided on a per transmission connection point basis.

Question: Becoming a registered participant for DSP

32. Are there issues relating to the costs and processes for becoming a registered participant in the NEM that require to be considered further in this review? If so, why?

UE agrees broadly with the Commission's discussion of the issues relating to becoming a registered participant, as set out in section 8.4.1 of the Directions Paper. UE also concurs with the views expressed by the EUAA, as set out in the same section of the Directions Paper.

UE views the concept of a direct DSP registered participant in the NEM as akin to the direct trading of energy futures by a consumer, compared with the use of a 'registered broker' as an alternative. The registered broker role typically permits many small players to participate without fully satisfying the same criteria as required by the broker. This market-based approach is supported by UE: individuals should have the opportunity to participate in their own right, or to participate via market agents such as retailers, demand side aggregators, and small generation aggregators.

Question: The role of aggregators in wholesale markets

33. What issues should be considered regarding the role of aggregators in the NEM? Should there be a new category of market participant for aggregators?

UE is supportive of classifying demand aggregators as a market participant because we see demand aggregators as being vital to the success of large scale demand management involving many end customers. Multiple demand aggregators in the market that could be engaged through a market mechanism for their services should drive competition in making demand management options more attractive and viable.

UE has examined, from a commercial perspective, its potential role in industrial and commercial demand side aggregation, and concluded that it is unlikely that UE could source available peak demand on a more cost-effective basis than specialists in the market. This view is supported by the evidence from the Western Australian market, where about two-thirds of all DSM reserve capacity is sourced by demand aggregators. UE is supportive of the Small Generation Aggregator Framework to allow specialists in the market to cost-effectively secure further demand below the industrial and commercial customer band.

Question: Access to short term financial contract markets

34. How effective are current financial contracts markets at providing a hedge against price risk for DSP options?

UE is not in a position to comment on this matter.

Question: Remuneration for providing DSP in the wholesale market

35. Given the discussion regarding the appropriate payment to DSP resources in the NEM, are there any other issues that should be considered by the Commission in regard to this matter? Are there any potential improvements to existing processes and other means to better facilitate DSP into the wholesale market that require consideration?

UE is unaware of any other issues that should be considered by the Commission in regard to this matter.

7. Networks

Questions: Profit incentives on network businesses

36. Do you consider that the current regulatory arrangements could prevent network businesses from pursuing efficient DSP projects which could contribute to achieving a more economically efficient demand/supply balance in the electricity market?

37. What options for reforming the current regulatory arrangements should be explored under the next stage of the review?

38. Do the current arrangements need to clarify distribution network businesses' involvement in distributed generation and if so, how?

UE concurs with the submission of the ENA in relation to these questions.

As pointed out in the ENA submission, networks are actively involved in DSP activities for residential, commercial and industrial customers. However, these programs tend to be trials or small scale, local initiatives. Networks have no commercial incentive to engage in broad-based DSP activities that deliver benefits to other players in the supply chain. This is largely because networks have no profit incentive to pursue such projects.

As a result, DSP activities that deliver a benefit beyond the network boundary, but insufficient current period network benefit (deferring capital expenditure or maintaining reliability), are not proceeding because they do not have a positive business case when examined from the network company's perspective. As a consequence, DSP activity is likely to be lower than the economically efficient level.

To provide a positive profit incentive for network businesses to actively pursue DSP, ENA recommends that the AER apply a new demand management incentive and embedded generation connection scheme (DMIEGCS, previously the DMIS). An effective incentive mechanism would allow network businesses to share a portion of the benefits (reduced costs) that network businesses create at other levels of the supply chain; and the longer term benefits of the DSP initiative to offset the upfront costs. It would also offset any negative revenue impact in price capped jurisdictions. As explained in Attachment 2 of the ENA submission, this requires only minor rule changes, but more fundamental changes to the AER's practice. ENA has proposed principles and preferred elements for a revised incentive scheme, for discussion with the AER and the AEMC.

If an effective incentive scheme was in place, UE would be able to boost significantly its capability through pilots and trials, develop better analytical tools to assess non-network options, undertake additional engagement with end-users and potential DSP providers, including providing better information on DSP opportunities. This capability building is an important factor in shifting from innovation trials to the deployment of larger scale DSP programs.

Together, these changes will, over time, reduce the investment needed in traditional network infrastructure, delivering benefits to end-users.

Questions: Research into estimating potential demand reduction of non-contracted DSP

39. How should network businesses estimate the potential demand impacts associated with DSP? Should there be consistency in approach across the business and should arrangements provide guidance on how to do such estimation?

40. What should be the framework for recognising the impacts of DSP in the forecasting methodologies used during the regulatory revenue determination process?

UE would support the development of guidelines or a methodology to estimate the demand impacts associated with DSP and how this can be fairly assessed against network alternatives when there is a difference in reliability, availability, capacity, duration.

Question: Exemption from Service Standard Incentive Schemes

41. Is it appropriate for network businesses to be exempt from the service standard incentive scheme during the initial development phase of DSP projects? What factors need to be taken into consideration in designing such an exemption?

Service standard incentive schemes encourage network business to compare the likelihood of outages between network and non-network/DSP options. UE is supportive of network owners appropriately considering the relative impacts on reliability and continuity of supply between network and demand side alternatives.

The Directions Paper suggests that counterparties to non-network solutions are unlikely to take on reliability risk due to the early stage of development of the demand management sector. In our experience, generator counterparties are not willing to be exposed to uncapped service standard incentive scheme risk. Under such circumstances, non-network solutions are problematic as they provide lower levels of reliability compared to conventional network options, and they expose the distributor to financial losses (through application of the service standard incentive mechanism) and damage to reputation.

Consultation regarding consumer protection for smart metering arrangements is considering the length of contracts, and the ability for consumers to opt out of these contracts or opt out of direct load control or supply capacity control if they wish on certain days. These factors make the reliability of the demand response difficult to predict with any certainty and could act to discourage the uptake of these types of options as alternatives to network investment.

For these reasons, there would be merit in exempting reliability issues arising from DSP projects from the service standard incentive scheme during the initial development phase.

Question: Engagement with consumers

42. Should network businesses play a greater role in informing consumers about the potential benefits from DSP and various DSP products? If so, how should they do so?

As already noted, customer education and engagement is vital to achieving efficient levels of DSP. However, a complication arises in determining the network company's role in customer engagement.

Network are geographically based, and therefore it may be necessary for a distributor to engage with a significant number of customers in a geographic region in order to get an effective level of demand

response. The effectiveness of demand management may be diluted if a distribution business has to engage or get endorsement from multiple retailers in order to implement a demand management solution. Either a direct relationship between the customer and distributor is needed without retailer involvement, or via a single third party that has a direct relationship (such as a local council or demand aggregator) with the customers.

8. Retailers

Question: Settlement load profile for residential consumers with accumulation meters

43. Do you consider that settlement profiles which more accurately reflect actual consumption patterns improve incentives on retailers and/or consumers to offer/provide DSP?

Moving to settle on actual customer consumption patterns on balance should lead to more cost reflective pricing to customers. DSP is more likely to be effective where all customers have interval meters and settle on interval data and are able to have improved price signals.

Questions: State based retail price regulations

44. What are the specific aspects of state based retail price regulations that restrict retailers from offering innovative tariffs or products? What amendments to the regulations could better enable retailers and other parties to facilitate DSP?

45. Should retail price regulation provide some certainty for retailers in their ability to recover any costs associated with facilitating DSP?

UE is unable to comment on these matters.

Question: Engagement with consumers

46. Should retailers play a greater role in informing consumers about the potential benefits from DSP and various DSP products? If so, how should they do so?

UE agrees with the comments raised by Origin and TRU regarding improving the quality of information provided to customers on potential benefits from DSP. Government and regulators may also offer information on available offers, price comparators and other avenues or incentives for consumers to reduce consumption and total energy costs.

UE considers that both retailers and distributors have a role in informing customers about potential benefits and products.

9. Distributed Generation

Question: DNSP Incentives schemes for DG

47. What incentives should be provided to DNSPs to ensure that they support DG projects? Is there merit in the proposal for DG proponents to pay DNSPs a fee-for-service to connect a DG installation? If so, how should this proposal be applied?

Distributors need to be incentivised by being able to recover part of the value of deferring a network augmentation. At present up to 100% of the deferral value is passed onto the distributed generation when a network support agreement is entered into. UE suggests that this be changed to, say, 70%, with 30% allocated to the Distributor.

Questions: Metering and settlement arrangements for DG

48. What are the appropriate metering and settlement arrangements to facilitate the ability of consumers and DG projects to sell their demand response to any party?

49. Are amendments to the current market arrangements required to facilitate DSP contracts which enable the DSP provider to sell its services to any party? If so, what amendments are appropriate?

The AEMC Small Generator Aggregator paper deals with these issues to enable a registered participant to aggregate generation across a number of small generators and sell the generation to any party. The metering arrangements would need to be consistent with those required in the respective jurisdiction. The Commissions consultation process should be completed to address these issues.

Question Maximising the export value of DG to address peak demand

50. Should there be supplementary provisions to the arrangements governing feed in tariff payments to encourage such consumers who have micro generation units to maximise their export at times that enable deferment of network augmentation? If so, what are possible options to achieve this?

Feed in Tariffs could be defined with reference to the benefits provided by various technologies, as opposed to the current flat rates.

For example:

- A Peak Demand Incentive Feed in Tariff (PDIFIT) would encourage export of power at times of peak network demand, regardless of generation technology or emissions. It would reflect the benefit to distribution and transmission networks by reducing peak demand. These generators could be non-renewable high emission technology such as standby diesel generators, energy storage such as batteries in electric vehicles or low emissions sources such as west-facing photovoltaic arrays, which produce peak output in late afternoon coinciding with typical peak network demand, or photovoltaic arrays combined with energy storage.
- A zero emission Feed in Tariff (ZEFIT) would include photovoltaic arrays, mini hydro and wind generators or other zero emission technology.

- A Low Emission Feed in Tariff (LEFIT) could include efficient natural gas co-generation or tri-generation plant using combustion engines or fuel cells with emissions under a certain threshold. Some form of certification of the generating plant would be necessary to claim eligibility. A threshold of about 400 kg CO_2/MWh would need to be set.

The Victorian Competition and Efficiency Commission is presently considering these matters in its Inquiry into Feed-in Tariffs & Barriers to Distributed Generation. That inquiry is also considering the benefits of a nationally consistent approach.

Any scheme design would need to consider generator size, export capacity, scheme rules where there is more than one form of generation, hybrid generation and scheme costs.

A move from a range of state based schemes and metering configurations would need to be considered carefully to ensure that designs were able to manage metering grandfathering arrangements equitably.

10. Energy efficiency regulatory measures that integrate with or impact on the NEM

Questions: Energy efficiency policies and measures that impact on, or integrate with, the NEM

51. What do you consider is the role for regulatory energy efficiency policies and measures in the context of facilitating uptake of cost effective DSP in the electricity market?

52. In your view, do consumers consider energy efficiency measures separately to DSP, or do they consider all actions as part of managing consumption and hence controlling electricity costs?

53. What are the elements for a best practice model or approach for energy efficiency policy to facilitate efficient investment in, and use of, DSP in the electricity market?

Rising prices and costs have increased consumer focus on electricity consumption. UE agrees with the view expressed in the Directions Paper that energy efficiency and demand side participation are not considered to be separate.

UE supports an approach to energy efficiency policy that is cost-effective, evidence based and complementary to existing market frameworks and economic regulations.

As part of the Clean Energy Package, the Federal Government has decided to lift the exemption which applied to gas and distribution networks a year early. From 1 July 2012, The Energy Efficiency Opportunity program will apply to networks that use over the threshold amount of energy. It is important that the energy efficiency framework links appropriately into the economic framework and that there are community wide benefits. UE note that the Federal Government will consult with industry over the coming months to develop appropriate regulations.