Submission to the AEMC

Re: Issues Paper, Power of Choice – giving consumers options in the way they use electricity

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1 Executive Summary

United Energy (UE) appreciates the opportunity to provide comments on the AEMC Issues Paper, Power of Choice –giving consumers options in the way they use electricity.

UE is keen to promote demand management and is seeking to take advantage of the technology and equipment developed in the context of the AMI project. UE is committed to the development and implementation of economically viable demand management solutions, bearing in mind the load profiles and customer growth patterns in its region.

UE note that demand side participation does not necessarily equate to low carbon emissions. This submission has focussed on tariff arrangements and information/education for consumers with improved data and service offerings. The shifting of load from peak periods to off peak has the potential to encourage use of high carbon intensive generation.

UE have responded to the questions posed in Sections 2-5. In summary;

- UE note that network pricing structures that seek to reflect network impacts and seek to minimise peak load growth can only influence consumer behaviour if they are passed on to consumers in a timely manner and a fairly similar form;
- Where more complex types of pricing structures are adopted, the AEMC should consider whether the norm should be monthly billing to consumers with the opportunity to opt out to quarterly billing;
- Smart meters offer an opportunity to deploy appliance level load control, supply capacity control, timely information to customers using web portals or in home displays etc. These service offerings could be via smart metering infrastructure or via the consumer side using their home gateway. Retailers, distributors or third parties could seek to offer these products to consumers;
- Time of use tariffs may lead to some demand response if the retailer and distributor price signals are aligned and if the customer chooses to respond to the price signal. A more reliable response would be achieved where load was controlled eg load control of appliances or supply capacity control provided such control cannot be bypassed by the customer;
- In relation to smart meters, retailers and distributors will progress load control initiatives over time as they become more confident with the infrastructure and develop consumer valued offerings. The development of distributor offers in this area for firm load shifting is consistent with the need for distributors to consider and possibly implement alternatives to network augmentation. Distributors will need the ability to contract directly with customers or demand aggregators to engage in firm load shifting to manage network constraints;
- As technology uptake enables remote switching of larger volumes of load by multiple parties, it will be more important that these third parties are registered in the market in some manner and are bound by protocols which support network security and reliability;

- Where load control of appliances or supply capacity control products are adopted, it will be important for education campaigns to improve the understanding of customers about these products. Consistent terminology to customers would be beneficial;
- As consumers move premises or change retail contracts, the management of the metering configuration or data access will need to be kept aligned. This could be managed by a more sophisticated consumer portal where the consumer is able to directly request the load or data access services to be turned on or off;
- Ideally the network and retailer billing periods need to align to allow more complex demand type network charges to be reflected in retail bills;
- UE consider that the various Rules should make it clear that consumers can approach the distributor for metering information and that the distributor should be allowed to offer such services/tools to consumers. Currently the NER require that the consumer needs to contact their retailer in order to gain access to such information. The NER does not clarify that consumers can contact their distributor as responsible person directly for such information;
- Where demand aggregators contract for demand in the market, this may provide a more reliable demand response as they may over recruit for the demand capability to ensure it is available when needed. However, if this does not work when required, the political and reputation risks rest with the distributor no matter how well the liability is shared in the contracts. The Service Target Performance Incentive Scheme (STPIS) incentivises the distributor to provide network reliability or penalises the distributor for lack of reliability. These types of incentives are likely to encourage network augmentation, particularly when combined with reputation risk;
- Smart meters or consumer gateways and home automation systems will eventually allow load management at appliance level by consumers or third parties. It will take time (10-15 years) for consumer appliances to be replaced with new appliances with smart devices that allow this type of appliance level load management. Clear leadership from Government on the nationwide smart device standards to be adopted would be beneficial, particularly if the standard Australia adopted was consistent with that adopted in several other continents;
- Interval meters and smart meters offer granularity of energy usage, standard metering that provides for bi-directional measurement capability and load control features which are not available as part of the standard metering today. Without the regulatory intervention from the Government policy initiatives, it is unlikely that there would be the uptake at any significant level for these enhanced meters. Further the NER actively discourages the distributor from making any investment in smart metering given that these meters, because of how they are read, are subject to metering contestability and possibly a limited useful life.

2 Consumer participation and DSP opportunities

5. What are considered the drivers behind why consumers may choose to change their electricity consumption patterns? Please provide examples or evidence where appropriate.
6. Chapter 4 lists some plausible DSP options that are currently used or could be used by consumers. Are there any other plausible DSP options currently used by consumers that have not been identified? Please provide description of measures and examples, where available.
7. Are there any DSP options that are currently available to consumers, but are not commonly used? If so, what are they, and why are they not commonly used (i.e. what are the barriers to their uptake)? Please provide examples and evidence if available.
8. Are there other DSP options that are not currently available to consumers, but could be available if currently available technologies, processes or information were employed (or employed more effectively) in the electricity (or a related) market?

Consumers are most likely to change their electricity consumption pattern based on price signals. Where price structures are relatively flat with some small level of seasonality or inclining block, these are unlikely to elicit much of a customer response.

As consumers become more engaged with rising energy costs this will drive consumer behaviour to reduce consumption and to choose more energy efficient appliances where possible.

Price signals to consumers need to be timely and relevant if reduction in peak demand is the target objective. This could be achieved with seasonal time of use pricing, critical peak pricing, peak time rebates or demand etc. It is important that the customer receives the price signal in a timely manner close to the behaviour that created the impact. Providing customers with a quarterly bill in April for 2 or 3 critical price periods (CPP) which occurred over January/February will have a significant financial impact on consumers and does not provide an opportunity for the consumer to learn from a CPP event and change their behaviour. The AEMC should consider where these types of pricing structures are adopted that the norm should be monthly billing to consumers with the opportunity for consumers to opt out to quarterly billing.

The example in Fig 4.1 of the Issues Paper notes a possible key input for peak load shifting is network and retailer incentives aligned. UE have had various pricing incentives to drive consumer behaviour in the past, for example time of use tariffs with summer demand incentive charges applicable for days above 30C or time of use tariffs with monthly demand components. UE note that pricing structures that seek to reflect network impacts and seek to minimise peak load growth can only influence consumer behaviour if they are passed on to consumers in a timely manner and a fairly similar form. For various reasons, retailers may not wish to offer a similar pricing structure to consumers, thus reducing the level of influence on consumers' behaviour of any network price signals.

UE considers that the categories of demand side participation outlined in Chapter 4 are fairly well covered. Use of supply limiting devices in smart meters or interruptible tariffs could be another variation on peak demand shifting that may be better termed peak demand shaving.

Whilst UE has developed a number of innovative network tariffs over the last decade there has been little uptake or acceptance by retailers/consumers. UE holds information sessions for retailers to explain the strategy behind the tariffs and the rationale for the demand components so that retailers are able to provide this communication to consumers if they wish.

Possible barriers to the uptake of these tariffs over the last decade include:

- Consumer involvement/active participation in energy pricing options has been fairly low until recent times given the low energy prices;
- Consumer awareness/education on how more complex tariffs can be used to their benefit;
- Retailers capability/willingness to develop a retail product offering in a similar vein;
- Retailers capability to sell these more complex offers by call centre staff and provide a succinct explanation that consumers are able to grasp over the phone;
- Operational capability of retailers to be able to bill and manage these types of contracts at high volumes;
- Retailers and/or customers can churn within a read cycle or within a billing period making any rolling or monthly demand billing of network charges more complex for assignment to the correct customer or correct retailer; and
- Where retailers also own generation, there may be incentives to generate at time of peak pool prices which may exacerbate peak demand on infrastructure.

Many of the potential barriers above can be alleviated with improved engagement between distributors and retailers and with education campaigns for consumers regarding rising energy costs and the need for cost reflective pricing. Consumers can be engaged with technology or with vastly altered pricing structures. Uptake of mobile phones and iphones/apps are examples of consumer technology uptake. Pricing plans for fixed or mobile phones are significantly different to those in place a few decades ago.

Smart meters offer an opportunity to deploy appliance level load control, supply capacity control, timely information to customers using web portals or in home displays etc. These service offerings could be via smart metering infrastructure or via the consumer side using their home gateway. Retailers, distributors or third parties could seek to offer these products to consumers.

Whilst smart meters offer some of these opportunities there is a need to test these meter features to assess how best they could be deployed eg time from request to appliance/meter response for small groups of meters or large groupings, ease of individual customer tailoring etc.

Time of use tariffs may lead to some demand response if the retailer and distributor price signals are aligned, however a greater or more reliable demand response would be achieved with centralised or direct load control. For a demand response to be effective, use of a feature such as supply capacity control to enable peak shaving would need to have localised uptake and probably be oversubscribed to ensure that the required minimum response could be maintained over a few years despite customer or retailer churn.

3 Market conditions required for efficient DSP outcomes

3.1 Market conditions and areas for investigation

9.	What are considered the relevant market conditions to facilitate and promote consumer take up of cost effective DSP?
10.	Are there any specific market conditions which may need to be in place to enable third parties to facilitate consumer decision making and capture the value of flexible demand? Please provide examples and evidence as appropriate.
11	What market conditions (technologies, processes, tariff structures, information etc) are needed, that are not currently employed in the electricity market, to make other DSP options available to consumers?

3.1.1 Embedded Generation

Green buildings and carbon taxes encourage the market to consider low emission energy alternatives such as cogeneration and trigeneration. Whilst these initiatives benefit the community generally by generating load close to the demand, developers often consider that the process for connection to networks to be cumbersome and inefficient.

Where generation beyond micro generation wishes to connect to the network there needs to be consideration of the generator size, local network conditions and any work which is required to facilitate two way flow of energy on that portion of the network. The connection of distributed generation to the existing distribution network introduces an additional source of fault current and potential for exceeding plant ratings leading to a breach of safety obligations. The situation will be exacerbated with increasing number of embedded generators connected. The distribution network has not been built to accommodate high levels of new distributed generation. In order to safely and securely facilitate the connection of existing as well as new generators, fault level mitigation strategies need to be implemented thus leading to high connection costs.

UE recognise that there is collaborative project work being undertaken in this area and also development of the AER's exempt network and exempt onselling framework which includes generation. UE consider that these initiatives should be allowed to progress in conjunction with the new NECF connection framework.

3.1.2 Load Control

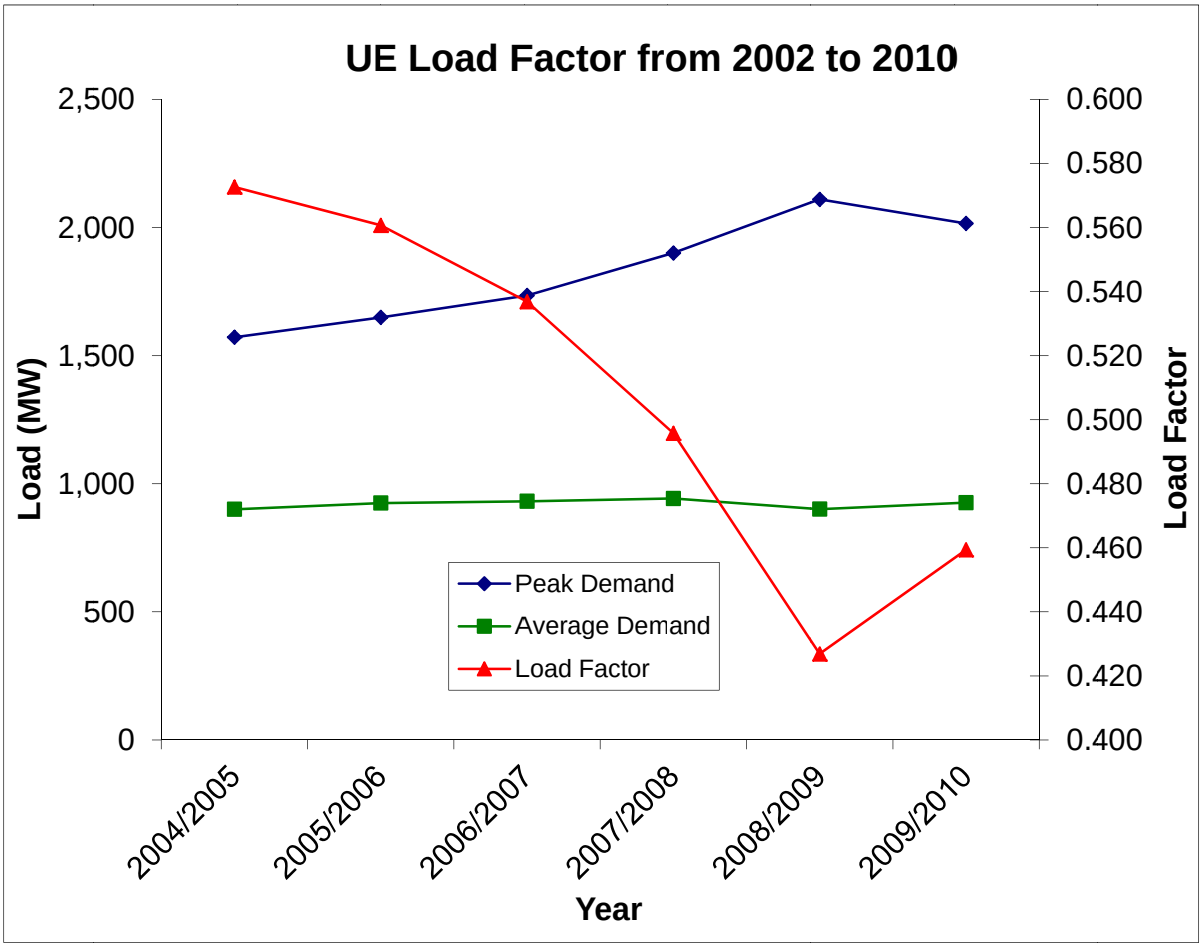
In relation to smart meters, retailers and distributors will progress load control initiatives over time as they become more confident with the infrastructure and develop consumer valued offerings. The development of distributor offers in this area for firm load shifting is consistent with the need for distributors to consider and possibly implement alternatives to network augmentation. Distributors will need the ability to contract directly with customers or with demand aggregators to engage in firm load shifting to manage network constraints.

As imported control equipment and home automation systems come down in price, there will be opportunities for energy savvy and technology smart customers to adopt customer managed or third party controlled load solutions on the consumer side of the meter. Switching of small loads evenly distributed across the network is not necessarily a concern,

however switching of more significant loads in a localised area of the network may be a concern to networks. As technology uptake enables remote switching of larger volumes of load by multiple parties, it will be more important that these third parties are registered in the market in some manner and are bound by protocols which support network security and reliability. Ultimately, the local distributor, acting as a clearing house, needs to assess the switching of any material loads on its network based on the localised conditions at the time.

3.1.3 Tariff Implications

Increasing energy costs and cost reflective pricing (ie unwinding the consumer cross subsidies) will provide an imperative for consumers to more actively engage in energy decisions. Without cost reflective pricing, there will be no price signal to discourage the use of energy at peak demand thus exacerbating the increase of energy prices. The graph below shows that the average demand in UE is reasonably flat, however the peak demand has continued to increase.



The increase in peak demand is attributed to the residential consumers air conditioning load. Where consumers intend to continue use of air conditioning in peak periods, they are unlikely to voluntarily move to a tariff that would increase their energy costs. In this

scenario, flat rate tariffs are likely to have the peakier load consumers and those consumers that are not engaged about their energy behaviour. This has the potential to result in larger price increases for flat rate consumers in future unless all consumers are moved to a time of use tariff regime with staged differentiation of pricing combined with an appropriately targeted education campaign. Market conditions ranging from consumer choice from a selection of tariffs (retail and network) through to mandating a move to a time of use tariff in conjunction with appropriate consumer tools could be considered.

3.1.4 Improved Consumer Awareness

Interval meters or smart meters offer customers more information about their usage across the day/days of the week. It is important that customers have access to this type of information and a means of understanding the energy use from individual appliances. This could be achieved where customers have access to real time energy information via a web portal. Where a consumer wishes to conserve energy or lower energy costs they can turn appliance on/off and see the effect on energy consumption in real time on the web portal.

This approach needs to be combined with consumer education campaigns that provide consumers with an understanding of why energy prices are increasing across the supply chain, including costs of government schemes to connect renewable energy or PV cells, the impact of carbon taxes etc. In a similar manner to the '155' water campaign in Victoria, consumers need to understand the constraints and be aligned with energy conservation measures with the implication that users will pay for high levels of energy use, particularly at peak demand times.

Where load control of appliances or supply capacity control products are adopted, it will be important for education campaigns to improve the understanding of customers about these products. Consistent terminology to customers would be beneficial, ie to describe the load limit (L kWh) which if exceeded during time (M minutes), consumers will be off supply for a penalty period (P minutes). Consumers need to understand the implications of these terms and have them clearly conveyed in any contract summary sheet. Even with the best education campaign, consumers will need to understand the implications of their appliance level use/mix that can be used within the load limit (L) to ensure that they are satisfied with the value proposition of any load restriction.

As consumers move premises or change retail contracts, the management of the metering configuration or data access will need to be kept aligned. Where the metering configuration is used to provide access to the load management services or data, there will be a need to manage the metering configuration in line with the consumer contract. This could be managed by a more sophisticated consumer portal where the consumer is able to directly request the load or data access services to be turned on or off.

Alternatively the services/access could be turned on/off by requests via the retailer or distributor. Efficient industry processes to manage these arrangements need to be developed and then communicated to consumers. It may be that consumer's privacy is managed by reverting to a set configuration when a consumer leaves a premise, from there

a new consumer is able to request the configuration that suits them. This will need to balance the security/privacy considerations of consumer metering data with a possible need to reconfigure the meter and erase metering data pertaining to the previous consumer. The integrity of the metering data for settlement and billing purposes will need to be ensured and managed in conjunction with the consumer privacy concerns.

3.1.5 Improved Market Conditions

There are a number of market conditions which could be considered in order to facilitate more effective DSP options, these include:

- An approach where network tariff price signals are passed on to consumers effectively to support peak reduction policies; and
- Distributor provision of energy portals and tools to enable consumers to better understand appliance level energy consumption and impacts of tariff choices; and

Time of use tariffs are of limited value where the price signal for energy consumed at times of peak network use are not passed on in a timely or effective manner. It would be useful if consumers were billed monthly as opposed to quarterly billing otherwise all the price signals/impact may end up on a single bill providing little opportunity for a consumer response.

Further network charges for rolling demand on a calendar month often don't translate easily to consumers retailer billing periods which may be based on quarterly billing commencing during the month. This means that a consumers retail bill spans 4 months, with the retailer only having the network demand charges for the first three months of the billing period, ie the network demand charges always lag the retailer billing period. These arrangements become quite difficult for retailers to effectively pass on to consumers. Ideally the network and retailer billing periods need to align to allow more complex demand type network charges to be reflected in retail bills. This is a significant change to the normal existing arrangements where retailers bill consumers before the networks bill the retailers.

There are over 20 electricity retailers operating in Victoria. Whilst the three incumbents may have the funds/inclination to develop consumer tools such as web portals to access energy and lock in consumers, smaller retailers may not have the available funds. Further the distributor as an independent party could provide consumers with a web portal without a lock in to any retailer. The distributor may also be able to provide access to real time information from the meter (raw, invalidated meter data) to allow a consumer to turn appliances on/off in order to assess their energy usage.

Tools that provide the consumer with a download of their metering data or provide the consumer approximate energy profiles for their usage on weekdays and weekends (% peak vs off peak energy and usage per weekday and per weekend day), could provide the consumer with useful information to compare retailer offers which may be available on the AER Price Comparator website or the ESC Your Choice website.

UE consider that the various Rules should make it clear that consumers can approach the distributor for such information and that the distributor should be allowed to offer such services/tools to consumers. Currently the NER require that the consumer needs to contact their retailer in order to gain access to such information. The NER does not clarify that consumers can contact their distributor as responsible person directly for such information.

3.2 Pricing

12.	Do you consider retail tariffs currently reflect the costs to a retailer of supplying consumers with electricity?
13.	Are any changes needed to retail price regulation to facilitate and promote take up of DSP?
14.	Do the charges to retailers for use of transmission networks reflect the value of that use?
15.	Do the charges to retailers for use of distribution networks reflect the value of that use?
16.	Do all consumer groups, including vulnerable consumers benefit from having cost reflective prices in place? If not, are any special provisions required to protect certain classes of consumers?

UE time of use tariffs are structured to reflect that the network peaks are most likely to occur on Victorian workdays in summer periods due to the combination of increased business and residential load due to air conditioning. The network tariffs encourage consumers to shift load into shoulder or off peak periods in order to save on energy costs which reflects the network driver to shift load from peak periods.

UE is not in a position to say whether these retail mark-ups reflect the costs to a retailer of supplying consumers.

As mentioned above distributors have an opportunity to work more closely with retailers to align the price signals. In addition, providing the customers with a price signal closer to the energy use at a critical peak period or energy peak will assist the consumer to manage their energy costs. Monthly billing would also be useful in this respect with the option for consumers to opt out back to quarterly billing.

If a time of use or form of critical peak pricing were adopted this will be unwinding the cross subsidies across consumers which have been entrenched for decades. Where consumers are elderly/vulnerable and need cooling or heating throughout the day, there will be a need to provide additional support through consumer protections and government concession programs.

Transmission and distribution networks are augmented to meet the peak demand which is growing each year primarily due to increased air conditioning load and underlying load growth from population and economic growth. The transmission charges to retailers are generally allocated to peak periods in the tariff structure to reflect the need to deliver extra transmission capacity. For more complex tariffs structures, there may be a transmission component within the demand charges also. These allocations reflect the underlying cost drivers.

3.3 Information

17.	To what extent do consumers understand the how they can reduce their electricity bill? What information do consumers need in order to increase their understanding of how they can reduce and manage their electricity consumption and hence bills?
18.	What issues are associated with provision of existing information in the market? Are there arrangements that could improve delivery of such information? If so, how and by whom?
19.	Could better information be provided to consumers regarding the actual consumption of individual appliances and pieces of equipment? If so, what information could be provided and in what form?

Consumers potentially have fairly limited knowledge of how they consume energy across the day, appliance loads and retail tariff options. The graphs above indicated that retail tariff charges vary across the day and by day type. Consumers may have limited recognition that it is a third the cost to run appliances on the weekend or during off peak time periods compared to peak periods.

Consumers may also have limited knowledge of retail tariff offers. For example retailer offering for peak retail tariffs could span from 25c/kWh to 45c/kWh which may have a significant impact on consumers energy costs where they are unable to shift load to shoulder or off peak periods. With any move to time of use tariffs or critical peak pricing, it will be important for regulators and governments to communicate to consumers on the benefits of websites such as Your Choice (ESC) or the Price Comparator (AER). Many consumers may have limited need or appetite to shop around for better retail tariffs.

Interval meters provide half hourly energy usage for accurate costing of wholesale and network charges. Where consumers had access to their interval metering data via a web portal, additional tools can be built in to allow consumers to turn on/off appliances and understand their impact on their household energy consumption by seeing graphs of real time energy use with the appliance on/off.

It is important that the information/tools outlined above are well communicated to consumers and perceived by consumers to be independent of any one retailer offering. The tools will only be valuable if the consumers are aware that they exist and how they can be utilised to link consumer behaviour with energy price impacts. It is the cost of energy to the consumer that will create the impetus for the consumer to become more engaged in their energy patterns and available retail offers.

Energy prices will also increase as gas becomes a more important resource for generation of electricity and also takes on a more global price in view of the liquefaction plants in Australia which allow gas to be shipped overseas. Combined with a carbon price, the days of cheap fuel resources are slipping away. The continual annual increase in peak demand means that generation, and transmission and distribution networks are expanded to meet the increased demand for several hours per year. Consumer awareness of carbon tax, global warming and environmental concerns may lead some consumers to choose more energy efficient appliances and generally conserve energy. This results in networks being expanded to meet the few hours of peak demand each year and being under utilised at other times, these factors exacerbate the increase in prices. Governments need to explain these factors which lead to increase in prices in a similar manner to Governments raising the awareness of the drought, the lack of water in reservoirs and the need to be more

conscious with our use of water including raising the awareness with consumers that water use of 155L/day per person is reasonable, water usage above this is less efficient and will be based on user pays.

Interval meters with consumer gateways or smart meters with a utility gateway have the potential to allow access for third parties on a consumers request. This has the potential to allow third parties to have access to consumer data and possibly to appliance level load management on the consumer side.

Third parties have generally not been part of the regulatory framework at the residential level, it is less clear how involved these third parties may be in managing/controlling the consumers load or having access to the consumers metering data. Where these types of arrangement are enabled, it will be important that the contractual arrangements are aligned to the current consumer at the premises.

3.4 Pricing options, products and consumer incentives

20.	Are retailer and distributor business models supportive of DSP?
21.	What incentives are likely to encourage research and development of other parties to promote efficient DSP?
22.	Are there any regulatory, cultural or organisational barriers that affect take up of DSP opportunities?
23.	What form of commercial contracts/clauses are required for facilitating and promoting efficient DSP?

Distributors face a high bar to achieve a reliable demand response when the retailer repackages the network price signals, at best distributors can seek to influence the retailers pricing. Whilst interval metering enables pricing of energy by either retailers or distributors in kWh, kW or kVa, generally kWh has been the normal charging units. It is more difficult for retailers to explain to consumers over the phone the concepts of demand billing and have them accepted.

Many retailers also own peaking generators and may not necessarily be accommodating to reduce peak demand when this provides an opportunity for peaking generators to earn significant profit. As mentioned in section 4.1 of this response retailers may find it difficult to sell more complex retail products to residential customers over the phone, these products are also more complicated to translate to retail bills and are more complex for retail billing systems to calculate.

Where demand aggregators contract for demand in the market, this may provide a more reliable demand response as they may over recruit for the demand capability to ensure it is available when needed. However, if this does not work when required, the political and reputation risks rest with the distributor no matter how well the liability is shared in the contracts. The Service Target Performance Incentive Scheme (STPIS) incentivises the distributor to provide network reliability or penalises the distributor for lack of reliability. These types of incentives are likely to encourage network augmentation, particularly when combined with reputation risk.

Demand side initiatives often need a localised demand response in order to defer augmentation and need a longer timeframe for certainty. A 5 year pricing period with the

potential for changed rules and AER positions on these matters does not provide the certainty required for deferred augmentation initiatives.

Smart meters or consumer gateways and home automation systems will eventually allow load management at appliance level by consumers or third parties. It will take time (10-15 years) for consumer appliances to be replaced with new appliances with smart devices that allow this type of appliance level load management. Clear leadership from Government on the nationwide smart device standards to be adopted would be beneficial, particularly if the standard Australia adopted was consistent with that adopted in several other continents.

Research and development needs to be undertaken to improved industry understanding of how smart meter features and smart appliances can be used for demand management purposes. This includes the rights of access to use these features, regulatory arrangements, how the feature may work operationally, speed to turn on/off, processes to deal with consumers issues/awareness levels etc.

Smart meters and smart appliances in the medium-long term have the potential to allow third parties to aggregate and switch significant portions of load on a network. This creates a requirement that the parties providing this switching have accurate, current contracts with the consumer at the premises and also agree to protocols with the distributor to ensure that network reliability and security of supply can be managed across multiple switching parties. The National Smart Meter Program (NSMP) has highlighted the need for retailers, distributors and third parties to adhere to Load Management and Network Security Protocols and also Data and Security Protocols to ensure that all consumers are protected and benefit from these technologies.

UE note that the ESC has recently released a Draft Decision in relation to the regulation and use of Supply Capacity Control and Load Control in Victoria:

> 'The Commission's view is that it is too early at this stage of the smart meter roll-out to make a decision on allowing or regulating retailers offering supply capacity control for non-credit management purposes. It is also too early to make a decision about allowing or regulating retailers' use of load control. Distributors' use of supply capacity control or load control in emergencies is acknowledged by the Commission as a valid means of rationing power and avoiding outages. Their use by distributors outside of emergencies is not sanctioned without further consideration.
>
> The Commission acknowledges the value of innovation in the marketplace and does not wish to inhibit it. Equally, there is a need to understand and mitigate any risks these developments may present to consumers. The Commission is conscious that industry is yet to determine what products may be offered through smart meters and that national consultation processes are continuing.'[1]

UE responded to the ESC Draft Decision seeking that the way remain open to trials of these types of smart metering features in an effort to develop knowledge and awareness in this area:

[1] ESC, Smart Meters Regulatory Review – Capacity Control and Verifying Bills, Draft Decision, June 2011, p 9

> 'UE strongly support the ESC view that innovation is valued and should be encouraged rather than inhibiting such product or technology developments. The ESC supports innovation and recognises that processes may be developed by industry working groups to enable these smart meter features/products in the market. Any industry procedures or processes will undergo extensive public consultation and take time to deliver.
>
> Whilst the ESC acknowledges supply capacity control and load control may be used by distributors in emergencies to ration power and avoid outages the use of these features by distributors outside of emergencies is not sanctioned without further consideration.
>
> UE recognise that customers should have a choice of product offerings and customers are in a position to give fair consideration to rebates/benefits in exchange for a possible demand response.
>
> UE consider that customer trials and product development should be allowed to occur in this area, with customers who are approached having the ability to opt in/opt out of such trials. These trials are valuable for both industry and customers to gauge the level of demand response, level of customer engagement, adequacy of customer information etc. Both industry and consumers/consumer groups can gain valuable learning's and insight by such arrangements. These are important precursors to any significant product innovations and offerings and ensuring that appropriate customer protections are ultimately put in place.'[2]

UE wish to provide consumers with choice of these types of products and are awaiting the ESC Final Decision on this matter. It is hoped that regulatory decisions would not prevent such development which is consistent with the Victorian Governments benefits from the smart meter roll out.

3.5 Incentives to invest and access to capital

24.	Are there specific issues associated with investment in infrastructure needed for consumers to take up DSP opportunities?
25.	Do you consider that the issue of split or misaligned incentives has prevented efficient investment in DSP from taking place?
26.	What are potential measures for addressing any issues associated with split or misaligned incentives?
27.	Are there specific issues concerning ease of access to capital for consumers and other parties?

The ESC in 2004 made a Final Determination to roll out manually read interval meters to large multi-phase customers, off peak heating customers and on new connection or meter replacement. The ESC decided to proceed with this market intervention due to the split incentives across retailers and distributors.

[2] UE response to ESC, Smart Meters Regulatory Review – Capacity Control and Verifying Bills, 8 July 2011, p 2

'The benefits of introducing interval meters would, in the first instance, be shared or dispersed among a number of entities. In particular, the introduction of interval metering would increase the scope for cost-reflective pricing that could be expected to provide benefits to customers, retailers, distributors and transmission businesses. However, if the interval metering decisions are left to the market participants it is not clear that any one of these entities could capture all the associated benefits and therefore would have an appropriate incentive to install interval meters. The reasons for this assessment are examined below.

Interval metering would provide benefits to the extent that:

- customers would be charged prices that better reflect the cost of consuming electricity in different periods
- customers would respond by changing their behaviour.
- The benefits of such changed behaviour would accrue in a number of different ways,
- including:
- the avoided cost of any future capital expenditure on generation assets
- the avoided cost of any future operating and capital expenditure on transmission assets
- the avoided cost of any future operating and capital expenditure on distribution assets
- the fuel cost savings associated with reduced generation (including reduced losses)
- any other avoided costs associated with a reduction in electricity consumption (such as avoided environmental costs related to additional greenhouse gases).'3

'Market based decision-making produces optimal outcomes when the decision maker 'internalises' all the costs and benefits (including social costs and benefits) associated with a particular decision. That is, the decision maker must incur all the costs and receive all the benefits of the relevant decision. It is also necessary that the decision maker is well informed about these costs and benefits. In the current context, the Commission considers that (1) the rollout of interval meters would have significant benefits that no individual decision maker would capture, and (2) prohibitive informational and transaction costs exist that could be expected to prevent the market from delivering efficient outcomes.'[4]

The split incentive to invest was also faced by the Victorian Government when they decided to enhance the manually read interval meters to remotely read interval meters or advanced interval meters. Both the Ministerial Council of Energy and the Victorian Government have faced this split incentive issue regarding smart meter roll outs and investment and decided to utilise the distributor as the roll out vehicle for smart meters and delivery of smart meter services. The MCE after extensive consultation and cost benefit analysis made changes in

[3] ESC, Mandatory Roll Out of Interval Meters for Electricity Customers, Final Decision, July 2004, p16

[4] Ibid, p15

the National Electricity Law to allow Ministers of a jurisdiction to mandate smart meter pilots/trials or the roll out of smart meter services to certain classes of consumers.

Interval meters and smart meters offer granularity of energy usage, standard metering that provides for bi-directional measurement capability and load control features which are not available as part of the standard metering today. Without the regulatory intervention from the Government policy initiatives, it is unlikely that there would be the uptake at any significant level for these enhanced meters. Further the NER actively discourages the distributor from making any investment in smart metering given that these meters, because of how they are read, are subject to metering contestability and possibly a limited useful life. This is despite the Joint Jurisdictional Regulators review of metering arrangements that suggested that small customer metering should reside with the distributor as the cost of metering churn was not seen as efficient and would be a material cost to small consumers.

UE recognise that there are many learning's from Victoria on how to roll out interval meters and time of use tariffs with significantly different communication and consumer engagement etc. Certainty of metering standards and meter provision in Victoria in the short to long term for small consumers will benefit investment in other interval meter roll outs.

3.6 Technology and system capability

28.	What are the significant energy market challenges in optimising the value of technology and system capability to facilitate an efficient level of DSP?
29.	Do current technology, metering and control devices support DSP? If not, why not, and what are considered some of the issues?
30.	How can issues relating to weak and/or split incentives be addressed to ensure that the benefits of smart grid technologies are aligned and felt across the electricity supply chain, including by consumers?
31.	How can pricing signals/tariff arrangements be made complementary with smart grid technologies to facilitate efficient DSP in the NEM?
32.	In maximising the value of technologies, such as smart grids for DSP, what are the issues relating to consumer protection and privacy?

The Issues Paper recognises that technologies such as smart grids and two way communication systems between consumers and suppliers may increase the prospects for demand side participation, particularly as smart meters and communication technologies will enable information exchange.

The Issues Paper notes a number of key challenges:

- Substantial investment required for smart grids and other technologies but the benefits accrue to a number of parties;
- The need to ensure the efficient operation of price signals:
- The need to promote efficient investment in new technologies and services where technologies may not be mature or may become obsolete
- The appropriate regulation of access to data, infrastructure and customers where multiple parties may be seeking this access; and
- Consumer protections, including security and privacy of data.

Many of these challenges have been raised in the regulatory arrangements reviewed within the NSMP. These issues and low level policy detail required have been raised with the Federal Government/SCO over the last year.

A key challenge is efficient investment in smart meters and smart grids where the metering and infrastructure may be subject to imminent contestability. On one hand the Issues Paper is noting that these technologies may facilitate more effective operation of electricity utilities in meeting standards relating to reliability and systems security. Yet, there is a lack of standards and direction in this area which has the potential to adversely impact reliability and security should this infrastructure churn and provide multi-party access and load switching.

Efficient investment in new technology and new services is best promoted through clear policy direction and medium to long term certainty to ensure that the investment does have an opportunity to realise the perceived benefits. Whilst technology maturity and obsolescence are risks in a market where technology options are evolving, there is a need for someone to go first and establish the founding set of technology capability. The most important aspect of the founding technology is that lessons can be learnt and improve the outcomes for the next generation of technology. The technology adopted in Victoria is some years away from open access that may allow multi-party activation of meter or HAN features. Industry is still attempting to develop efficient smart meter processes that allow this technology to be utilised as early as practical in a facilitated manner which protects consumer privacy and ensures the integrity of metering data.

The efficiency of tariff arrangements faced by consumers is an interesting challenge which impacts consumer participation and the extent of a demand side response. There is a need to balance a number of competing factors:

- When is the appropriate time to communicate the rationale behind a roll out policy when it may take some years for consumers to receive a smart meter;
- When is the appropriate time to communicate the need to move to more cost reflective pricing to consumers when this may only be available to those consumers with a smart meter;
- If the pricing policy adopted allows for consumer choice then the peaky consumers remaining on a flat rate tariff will need to experience greater price increases than those consumers who are able to benefit through time of use pricing and/or a behavioural response.

Similar challenges to these are faced where there is a need to educate and raise consumer awareness regrading smart meter features and load control technologies in an environment where the regulatory framework is unclear, transactional capability across the market is not yet agreed and possibly these features will only be available to some customers.

UE has developed various network tariffs which seek to provide time of use pricing and demand incentives. A more efficient demand side response will be achieved with a higher uptake of these network tariffs combined with undiluted network price signals to consumers.

3.7 Market and regulatory arrangements

33.	To what extent do parties have appropriate incentives to put in place the systems, technologies, information flows etc that facilitate efficient DSP?
34.	Are there aspects of the NEL or the Rules which prevent parties taking actions that would otherwise allow for more efficient levels of DSP?
35.	Are there market failures which mean regulation is needed in some areas to ensure appropriate market conditions are in place?

This section is seeking stakeholder input on whether there are changes required to the way in which participants in the electricity market are regulated or incentivised in order to help bring forward those market conditions.

UE has raised its concerns on the limitations of the Demand Management Incentive Scheme and barriers to participation of small scale generators in the NEM in a submission to the AEMC on Strategic Priorities for Energy Market Development.[5] UE has not sought to repeat these concerns in this submission.

3.7.1 Smart meter regulatory framework in the NER

As noted earlier in the paper the NSMP has documented a number of regulatory/policy decisions which may facilitate clarity in the regulatory arrangements, these include;

- defining the minimum specification for a smart meter at a high level;
- placing the smart meter as a unique meter type in the NER, including its relationship/differentiation compared to a type 4 or type 5 meter;
- establishing a regulatory framework for access/facilitated services to the smart meter features or creating a separate role to facilitate these services in the NER which is required where the meter is a smart meter;
- aligning the NER and NMP with the Ministerial Determination to ensure the smart meter is the minimum metering standard for the class of consumers defined and that there is non-reversion of a smart meter to a remotely read interval meter or manually read interval meter;
- establish a head of power for Smart Metering Procedures for B2B transactions and for Load Management and Network Security and Data Management and Security protocols; and
- arrangements for third party access and compliance of third parties with the Smart Metering Procedures and Protocols under the NER.

AEMO reference groups will develop procedures or Rule change proposals which facilitate these requirements. It is important that the regulatory framework is well considered,

[5] UE and Multinet submission to the AEMC, Discussion Paper, Strategic Priorities for Energy Market Development, 20 May 2011, pages 10-13

allowing roles and responsibilities, transactions/right to access and consumer protections to be regulated against this unique meter type across multiple frameworks eg NER and NERR.

3.7.2 Easily accessible consumer information

UE has noted earlier in this submission that an interpretation of the NER clause 7.7 is that consumers are not able to directly request the distributor to provide access to their metering data or to an energy portal which may be able to provide an interested consumer with opportunities to understand their power intensive appliances. UE consider it would be useful to clarify that consumers are able to make these requests directly to distributors as a neutral party.

4 Energy efficiency measures and policies

36.	What energy efficiency policies and schemes should be considered as part of this Review, i.e. as impacting on, or seeking to integrate with the NEM?
37.	To what extent can energy efficiency policies and schemes be adopted as options for enhancing the efficiency of DSP in the NEM? What are the strengths and limitations of energy efficiency policies as a DSP option compared to other options?
38.	To what extent do existing retailer obligation schemes facilitate efficient choices by consumers in their electricity use? Are there aspects of those schemes that facilitate efficient consumption choices more than others? If so, please explain.

UE note that work has commenced with the AER to develop energy efficiency benchmarks under the NECF. There will be an obligation on retailers to compare the consumer's electricity consumption against these benchmarks and to refer the consumer to energy efficiency websites.