4 May 2012

Australian Energy Market Commission
PO Box A2449
SYDNEY SOUTH NSW 1235

Project Number EPR 0022

www.aemc.gov.au

To whom this may concern

AEMC Issues paper – Power of choice – giving consumers options in the way they use electricity

Essential Energy appreciates the opportunity to respond to the Australian Energy Market Commission's (AEMC's) directions paper on *Power of choice – giving consumers options in the way they use electricity*.

Attached to this cover letter is Essential Energy's response to the AEMC's questions.

Essential Energy would be pleased to discuss this matter further. Should you require further information or clarification please feel free to contact Natalie Lindsay on 02 6589 8419

Yours sincerely

Col Ussher
Executive General Manager Infrastructure Strategy

Att. 1.

Essential Energy's specific response to the AEMC directions paper:

Power of Choice – giving consumers options in the way they use electricity

Reference: EPR0022

Response to the AEMC directions paper: Power of Choice
4 May 2012
Prepared by: Essential Energy

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Overview

Essential Energy is pleased to provide a response to the Australian Energy Market Commission (AEMC) *Directions paper, Power of choice – giving customers options in the way they use electricity* (The Directions paper).

Essential Energy is a New South Wales (NSW) Government-owned Distribution Network Service Provider (DNSP), with responsibility for building, operating and maintaining Australia's largest electricity network - delivering network services to more than 800,000 homes and businesses across 95 per cent of NSW, parts of southern Queensland and northern Victoria.

Essential Energy agrees with the opportunities identified by the AEMC for the uptake of cost-effective demand side participation (DSP) across the supply chain. Essential Energy is currently scoping a Regional Demand Management Proposal, which is an innovative approach aiming to:

- Provide a combination of demand management solutions, energy efficiency products and educational services in targeted constrained areas.
- Engage customers in demand management initiatives to reduce the amount of capital investment in the network and pass these savings onto the customer by way of price stabilisation or reduction.

This is an ambitious program which aims to become a model for the successful implementation of demand management initiatives in Australia.

Essential Energy does not entirely agree with the AEMC's findings in its supplementary paper to the directions paper. As a regionally based DNSP Essential Energy is conscious of the impacts that network tariffs have on our customers and therefore when making our regulatory proposal to the Australian Energy Regulator (AER) consideration of distribution network works programs are made with great care.

DSP is a key focus of planning decisions, however is not always the chosen alternative due to its somewhat unreliable nature. Although Essential Energy does consider DSP as part of the planning process, there is a need to encourage and incentivise DNSPs to investigate a broader approach to DSP solutions that are not related to a specific network constraint.

Essential Energy would be pleased to discuss the NSW licence conditions and their impact of the implementation of DSP projects with the AEMC.

Consumer engagement and participation

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?

Energy consumers ideally should have access to their consumption data. Access to data that is organised, analysed, interpreted (value-add data) should be by way of the consumer taking up a product/service offer from their DNSP, retailer or another party. Data should only be provided with customer authorisation and limited to the customer occupancy of the premise for which the data is sought.

Essential Energy believes that one of the current market participants would be best placed to fill the role of information service provider. Currently the only market participant who holds all the data for a premise is the DNSP or the Australian Energy Market Operator (AEMO); retailers only have access to the data for the period of time for which they are financially responsible for a premise.

The introduction of an information service provider needs to be carefully considered in the context of privacy issues, data mismatches and reconciliation issues for customers. The issues are likely to increase as metering technology improves, data storage requirements increase and customer churn evolves.

NER clause 7.7(a) may prevent DNSPs from providing data/information to customers, which could diminish the DNSP's ability to offer DSP products and services to customers and effectively manage demand within the constraints of the distribution network. It is important that the DNSP has the capability to manage constraints and associated infrastructure costs, therefore the ability for DNSPs to provide data to consumers and offer DSP products and services is appropriate. This is unique to the DNSP and potentially in conflict with the drivers for other DSP proponents.

Without provision of information and data to customers, customers will not have the means to understand their consumption behaviours and the impact this behaviour has on meeting DSP thresholds to earn a network rebate.

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?

To improve awareness of the costs of consumption, information needs to be provided to the consumer in a market consistent format. The costs of consumption at the local level can then be clearly recognised, markets then may emerge to interpret the data and suggest optimal retailers, tariffs and consumption patterns.

New technology (smart plugs/portals) that measure and communicate actual consumption and associated costs at the appliance level are in the early stages of implementation and within trial settings. It may not be cost effective for providers to offer this more broadly for purely educational purposes, without some 'guarantee' of the financial benefits that might flow from a DSP option being subsequently taken up by the consumer.

DNSPs providing a network rebate that reward customers who migrate consumption behaviour to a target consumption pattern requires a process where information is provided to customers in a way which encourages a response. Such a process could provide information to customers, say on a daily basis, to ensure any particular customer has the information they need to achieve the targets and be rewarded.

Efficient operations of price signals

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?

Consumer consumption decisions may be driven by network charges that vary by time of use. Although it is important to consider a robust education process in conjunction with time of use charges. Network charges that vary by time of use may increase the efficiency of network resources when compared to flat rate pricing. This has been demonstrated during trials using critical peak pricing signals.

Capacity charging better reflects the cost of providing network services, however, a fixed service charge component should be retained, particularly where the penetration of distributed generation and storage increases and volume and capacity become less relevant. To achieve the greatest benefit to the network, the tariff should represent the true cost to serve electricity to the consumer. An ideal tariff should be representative of the impact of a consumer's use of all the upstream network elements of the distribution network.

In order to facilitate more cost-reflective network pricing, interval meters would need to be installed. This would allow for the measurement and determination of load profiles and give DNSPs the ability to offer direct financial incentives to consumers via pricing.

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 consumers' consumption?

In order to better incentivise retailers to pass through wholesale costs and network charges to customers the rules could be amended to require consumer accounts to be unbundled. Unbundling of consumer accounts would provide transparency of the individual costs associated with consumer's energy consumption (network use and energy costs).

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?

In the interests of transparency and true cost reflectivity, the use of a fixed, variable and network LRMC would reflect the costs of supplying electricity from a network perspective. However, social equity considerations would feature heavily in any decision to implement location-based, cost-reflective network pricing that may result in large price variances amongst consumers.

The cost of implementing true cost reflective prices could outweigh the benefits for various parties. Consumer backlash could occur where such tariff changes resulted in significant inequality amongst the customer base. Electricity supply may become completely unaffordable for some consumers if true cost reflective prices were implemented.

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?

Essential Energy believes that DSP can be achieved without cost reflective pricing, for example via contracted direct load control of individual consumer appliances, such as air conditioners or pool pumps. It could be offered only in locations where network capacity constraints exist. Implementing direct load control in this way may guard against social inequality potentially created by cost-reflective pricing. DNSPs would need to enter into direct financial agreements with consumers to facilitate this. Another alternative may involve DNSPs offering peak time rebates. Rebates of this nature, coupled with a robust consumer education framework, could encourage voluntary positive actions by consumers and the increase the take up of the installation of smart metering technology.

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?

A key market condition required for cost reflective pricing is the installation of interval metering. Incentives for consumers to change their consumption pattern are somewhat dependant on the ability of these changes to be measured and in turn billed according to the time of consumption. Beyond this, the other major market condition required is to incentivise distributors and retailers to align prices with costs particularly in light of the moratorium of TOU prices in Victoria.

Technology and system capacity

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?

Access to consumption profile data and associated prices is required by a customer when making investment decisions, particularly when assessing pay back periods of DSP technologies. Access to this information will presumably increase the likelihood of customer installation and take-up of DSP technology.

An impediment to the development of ESCO based services for DSP is the lack of adequate information and data and the absence of a robust market. Once the initial steps of providing information to the consumer is enabled and appropriate incentives are in place the market should become the driver to alleviate any barriers related to DSP. The removal of barriers would require a joint focus from a number of parties, which may include consumer groups, government bodies, retailers, distributors, ESCOs or electrical goods retailers. A joint focus would enhance the possible benefits and simplifying the analysis for the consumer.

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 current market arrangements for the DNSP to supply and maintain metering technology are the most appropriate to facilitate commercial investment which supports time sensitive tariffs. Metering can facilitate and enhance network strategies which involve demand management, network innovation, investment expenditure and pricing which together can deliver the best possible benefit to the long term interests of consumers and maximise the long-term economic welfare of consumers. The introduction of competition for type 5–7 metering services and the provision of meters for small customers are more efficiently provided as an integrated distribution function.

Competition in metering services has the potential to create inefficiencies and require significant and costly process changes for little benefit.

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 retails in invest in metering capability in order to support DSP options?

Currently in NSW the DNSP is responsible for the supply of compliant metering (type 5-7).The installation of meters is generally performed by accredited service providers. The cost of the meter and associated functions (ongoing maintenance and meter reading) are incorporated into the consumer's network tariff. These meters are programed to allow the DNSPs to manage load control technologies (off peak hot water), various demand management programs and tariff configurations.

To encourage DNSPs to continue to invest in metering technology which supports DSP options the DNSP needs certainty that their investment will be utilised for the life of the equipment.

Optimising the value of technology and systems capability

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

Essential Energy believes that industry technology standards are needed to optimise certainty around the future value of investment decisions and avoid obsolescence.

Optimising the value of DSP technologies includes minimising the costs of supplying and integrating those technologies and maximising the benefits to consumers and networks. To allow both of these benefits to materialise, national standardised protocols and processes covering the DNSP and relevant DSP technology is required. Ideally these protocols should cover the communication path (back office to internet to DSP technology, or office to meter to DSP technology) and the process of connecting a DSP technology.

Many groups are currently studying these very issues, however given Australia's relatively small customer base, a unified approach to the issues presented seems appropriate to achieve the economies of scale required.

Supply chain interactions

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?

Many practical examples exist where DSP options could deliver net benefits to the market but have not been implemented for different reasons. An example is the installation of small generators for peak lopping. The installation of small generators could provide a benefit to the distributor, the transmission network, and the retailer. It is relatively easy to allocate a value to a DSP strategy that defers the augmentation of a particular network component (for example a part of the distribution network). However the allocation of a value to that DSP strategy becomes problematic where the strategy does not directly affect a known network constraint. That is, demand will be reduced as a result of the DSP strategy in all upstream components (distribution zone substation, transmission feeder, transmission substation), however if no augmentation is planned for those upstream components, then a value is difficult to derive because there is no expenditure to be deferred.

Another example is customer based storage (including connection equipment). These would also apply to certain types of customer generation:

Participant	Benefit
Customer	Security for critical processes Savings with load shifting under a ToU tariff Demand charge reduction
Distribution Network	Network capacity through peal lopping and/or VAr support Reliability under a STPRIS regime
Transmission Network	Network capacity through peak lopping
Generation	Generation capacity through peak lopping
Energy Trading	Peak price generation

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?

Essential Energy believes current market arrangements do not assist in promoting coordination across the supply chain. A lack of coordination or lack of a simple standardised approach to coordination severely limits the implementation of DSP and is an issue that needs to be addressed to enable efficient DSP.

For example, a DNSP may invest in DSP to reduce peak demand in a constrained or growing section of its network. This investment may also have flow on benefits to the transmission network service provider (TNSP) by deferring the need for an upgrade of that section of the transmission network. The TNSP does not contribute to the DSP

project however receives a benefit by deferring expenditure to upgrade their network. To alleviate this occurring, an obligation could be imposed on the TNSP to pay the DNSP an appropriate value for the reduction in demand through the allocation of the appropriate value to the TNSP for an appropriate time variable LRMC on each of its bulk supply points.

The directions paper cites an example of appliance manufacturers (residential and industrial) having little incentive to invest in improving the efficiency and energy management capability of their appliances over cost reductions and product features. The development of standard information packages relating to the whole of house load should, with a little innovation into individual appliance information, assist to drive appropriate consumer appliance selection and use.

Currently consistency does not exist between the wholesale market and market sectors value of DSP. This is evident in the case of PV generation and similar, home automation tools which are being used to shift load outside of peak generation periods and (possibly) into peak demand periods to maximise income from the associated feed in tariff schemes. The issue in these cases is the poor price signals being offered by both the schemes and consumer tariff, a correction of either could result in the appropriate signals being given to the consumer.

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?

Market mechanisms could be improved to facilitate interactions in the supply chain for efficient DSP. A key element in determining the business case for any DSP project is determining the value of the DSP to particular market elements. At present there is no simple standardised approach to capturing this information. The creation of a scheme which would allow active participation in DSP by both customers and third party intermediaries could enhance the take up of efficient DSP.

The introduction of cost reflective pricing would provide appropriate signals to enhance the take up of DSP, however locality based pricing applied generation and energy storage would be required.

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?

The introduction of cost reflective pricing could be used as a means of enabling efficient DSP. Once implemented, a review would need to be undertaken to ensure that the correct signals are being given through cost reflective pricing. Care would need to be taken to ensure that vulnerable consumers were not unduly further disadvantaged.

Essential Energy believes that trialling the Orion approach followed by an in depth review to ensure the desired outcomes had been achieved, would potentially be effective in the NEM.

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?

To achieve co-ordination across the supply chain, a method by which the various parties standardised an approach for quantifying the benefits of DSP options to each party in the supply chain would need to be agreed. This may take some time as each part of the supply chain will have a different driver thus requiring some changes to the current regulations.

Value of DSP benefits to the market

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

A standardised, formulated approach to quantifying the value of DSP options should be established as a first step. Current metering technology limits a DNSP's ability to quantify the value of DSP. The introduction of smart metering would allow changes in consumption to be reviewed and assessed in order to identify the before and after affect of a DSP project. This would also assist in the introduction of cost reflective pricing.

DSP should not be viewed in isolation. Energy efficiency should form part of any consideration being undertaken by a proponent.

Methods to forecast the impacts of DSP options

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?

Essential Energy believes that a standardised, common method to forecasting the impacts of DSP could be developed however care needs to be exercised due to the uniqueness of each DNSP area. In determining the level of DSP available, time and experience will provide greater knowledge of aggregated DSP.

The application of an initial confidence factor (essentially a de-rating factor) to "loose" DSP projects and to firm up confidence factors by calling the DSP on similar but non-essential days may aid the development and implementation of DSP projects and provide commonalities between planning and operational departments across the supply chain.

Single actor options

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

If co-ordination across the supply chain cannot be achieved it may be appropriate for a single market participant, namely the DNSP, to deliver the benefits of DSP. However, the value of DSP to each market entity must be well defined. The example put forward by Ausgrid in the directions paper seems to be a reasonable approach however this would need to be fully investigated to ensure that it was the most appropriate path to consider.

Wholesale and ancillary markets

Load forecasting incorporating DSP

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

A market participant should be obligated to provide DSP capability to AEMO if that capability is material. Consideration should be given to the mechanism by which the information is to be given and the associated costs.

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?

There are related costs in becoming a market participant however these should be considered by the party wishing to become a market participant and form part of their cost analysis in developing their DSP project.

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 participants for aggregators?

This issue is currently being assessed by the AEMC as part of AEMO's rule change proposal to introduce an additional market participant – small generation aggregator framework.

Networks

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?

In Essential Energy's view the current regulatory arrangements can prevent DNSPs in implementing efficient DSP projects, for example:

- The value of DSP to the network is determined by the value of the capital investment it is replacing, whilst it should include any benefits upstream (including alternative funding streams) and to the market as a whole, there is no mechanism to do so.
- There is no clear mechanism for a DNSP to include rebates or rewards within its annual pricing proposal.
- Clarity is required on the ownership of embedded generation by a DNSP.

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?

The potential demand impacts can vary widely across a distribution network depending on compatibility of the load being supplied by the DSP project. For example, street lighting efficiency will have no impact on a summer daytime peak demand, whilst PV installations will have no impact in winter peaking sections of the network.

The 'value' of demand reduction for a distribution network is largely derived from avoiding or deferring network augmentations. It is possible to determine generic 'values' for different asset classes by comparing growth related network expenditure to the increase in demand but localised to multiples of many times the generic value.

The forecasting framework should identify specific programs that are likely to have a significant impact, for example, off peak electric storage hot water energy decline but most of the smaller DSP impacts will be picked up in the analysis of customer classes and their representative load profiles.

Standardised consistent approaches to forecasting the impacts of DSP should exist. A standardised approach would assist in the implementation of DSP projects particularly in relation to providing commonalities between planning and operational departments and across the supply chain.

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?

It may be appropriate for a network business to use a defined, standardised confidence factor for various DSP projects to allow a comparison between DSP projects and network reliability projects. Additionally, the network business should not be penalised if the DSP project falls below the defined standard.

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?

Essential Energy reiterates its view that DNSPs could have a direct financial link with consumers which would allow the DNSP to offer customer incentives directed at demand reduction and improving load profiles, for example demand buyback schemes. The DNSP should be able to provide actual consumption and load profile information directly to a consumer and also use that information to present scenarios of various DSP options and their impact, from which the consumer can select a preferred option.

Retailers

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?

An approach to incentivise the provision of DSP is to introduce smart metering technology and appropriate cost reflective tariffs. Settlement profiles average the consumption of a group of consumers. It should be noted that no two consumers will have identical consumption, thus the use of settlement profiles does not send an accurate indication of the consumer's consumption. The retailer has some incentives to promote DSP, however the addition of actual load would provide greater incentive from the consumer end.

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?

State based retail price regulation should not limit a retailer's ability to offer innovative tariffs and products. Retail price regulation provides consumers with a default price should they not choose to enter into a contestable contract.

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?

DSP has potential benefits for the wider electricity industry and therefore the role of informing consumers rests with all industry participants. The value of DSP to each section of the supply chain varies and as such a different value can be attributed to a DSP project. The retailer therefore cannot be expected to play a larger role in the promotion of DSP, they could however, assist in the promotion of the value of cost reflective pricing.

Distributed generation

DNSP incentives schemes for DG

47.	What incentives should be provided to DSNPs 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?

Distributed generation can be treated like any other DSP project provided the financial value to all the upstream network components, market participants and any external society benefits can be listed and a confidence factor on the support being available when required can be applied. If this information is available and there is a benefit, the only incentive required is the payment of those value elements to the appropriate project stakeholders. If the DG offers no benefit to the distribution network, then a fee to connect should be applied.

Distributed generation has the potential to provide network support if appropriate incentives (through interval metering) are provided. However, it is important that any proposed distributed generation is right sized to the capabilities of the network to prevent any disruptive effects. Also there is potential to harness the technology in the power electronics to provide network support outside the peak area through loss minimisation and voltage regulation. The application of location and time varying cost reflective tariffs to distributed generation would provide incentives to distributed generation proponents to connect to the network in a way which provides benefits.

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?

AEMO in its *National Electricity Forecasting – information Paper December 2011* states, '*If the annual demand data does not include rooftop solar generation and other non-scheduled generation, the underlying growth trends in residential and commercial demands will not be understood and the ability to forecast long-term changes to these sectors will be compromised'.*[1]

Essential Energy has experienced a significant uptake of PV generation in the last three years due to the now closed NSW Solar Bonus Scheme (SBS) (large numbers of applications continue as prices increase). In order to receive the full benefit of the SBS consumers installed 'gross' metering, however since the closure of the SBS most installations have used 'net' metering.

The installation of 'net' metering restricts the distribution network's ability to accurately forecast the potential load that may be required during periods when DG is not generating at full capacity. Essential Energy believes that the most appropriate metering arrangements for DG is the installation of 'gross' metering. This would then allow the

[1] AEMO 2011 National Electricity Forecasting – Information Paper December 2011 pg. 17

distribution network to understand the import and export variables that DG is having on the network and therefore allow for more accurate forecasts which are in turn used for forecasting future system development/augmentation. Additionally the consumer will have the visibility of their system's output (ensure that it is performing as expectation) and also their usage. The installation of 'gross' metering at a premise should not limit the ability of a retailer to bill the customer on a 'net' basis.

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?

As previously stated, DG can be treated like any other DSP project provided the financial value to all the upstream network components, market participants and any societal benefits can be listed and a confidence factor on the support being available when required can be applied. If this information is available and there is a benefit the only incentive required is the payment of those value elements to the appropriate project stakeholder. Alternatively (and more ideally), location and time varying cost reflective tariffs could also be applied to generation.

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

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?

The role of regulatory energy efficiency policies should be to enable the greatest improvement in terms of carbon abatement, demand reduction and energy usage at minimal cost. Energy efficiency often enables an amount of demand reduction and the programs used target similar items of energy consumption.

The majority of consumers see energy efficiency as all-encompassing and about reducing overall electricity consumption to reduce their bill. They don't distinguish between the DSP options. They do, however, have some awareness of fuel substitution and DG, but not all have the means to invest in technology to achieve these. From a consumer's perspective, these are about 'energy efficiency' and achieving overall reductions, rather than reductions during peak periods.

Few consumers are familiar with the concept of peak demand and the issues it causes, and the potential benefits to consumers, both in the shorter and longer term, of the DSP that reduces the peak. Only with the provision of their own load profile data overlaid with time of use tariffs, retrospectively applied, do they consider the DSP. Once this has been established, the consumer then may consider shifting some of their demand from peak to off peak times, where convenient, for further incremental benefit. Tailored energy audits can increase the customer's potential for change and technology that provides some level of automation can increase their propensity to change.

In order to engage consumers the following needs to be available:

1. Detailed visibility of consumption and load profile data needs to be provided.

2. Consumers need the ability, through knowledge and/or technology, to control their consumption/demand.

3. Take-up of financial incentive to encourage behaviour change needs to be voluntary.

In certain jurisdictions, financial penalties have been proposed prior to visibility and control, but consumers need the ability to see and manage consumption before penalties for not doing so are applied.