REVIEW

Australian Energy Market Commission

# APPENDICES

## Power of choice review – giving consumers options in the way they use electricity

30 November 2012

Reference: EPR0022
Power of choice review

**Inquiries**

Australian Energy Market Commission
PO Box A2449
Sydney South NSW 1235

**E**: aemc@aemc.gov.au
**T**: (02) 8296 7800
**F**: (02) 8296 7899

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**About the AEMC**

The Council of Australian Governments (COAG), through its then Ministerial Council on Energy (MCE), established the Australian Energy Market Commission (AEMC) in July 2005. In June 2011, COAG established the Standing Council on Energy and Resources (SCER) to replace the MCE. The AEMC has two principal functions. We make and amend the national electricity, gas and energy retail rules, and we conduct independent reviews of the energy markets for the SCER.

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# A DSP options

**Box A.1: Summary**

DSP options refer to the actions that are available to consumers (or their intermediaries acting as agents of consumers) to reduce or manage their electricity use.[1]

There are various forms of DSP options, some of which have typically focussed on load-shifting away from periods of 'peak' demand to avoid costly operation or incremental investment in expensive peak generation or network capacity. Over time, programs have sought to include greater incentives for DSP, including more direct financial incentives and 'rewards' for participating consumers.

For this chapter, we outline the range of potential DSP options that are either currently available, or may be available in the future (i.e. with appropriate enabling technology or pricing structures/incentives). We also outline the potential opportunities that those DSP options may deliver and highlight those parties that are likely to be involved in undertaking such measures.

## A.1 Existing and potential DSP options in the electricity market

In our issues paper, we outlined that there is some evidence that DSP is occurring in the NEM, however, it is difficult to determine the actual volume of participation due to confidentiality around existing commercial contracts and limited data availability more generally.

Investigations by Futura as part of their report highlighted that AER investigations into high-price events in the wholesale market have identified evidence of probable demand response at times of high prices. For example, there were multiple apparent demand reductions in 2010, including reductions of up to 265 MW in NSW following a price spike of over $6,200/MWh on 10 August 2010. A more recent demand response of approximately 20 MW to 25 MW was apparent on two consecutive days in the combined Victoria and South Australia region during 31 January 2011 and 1 February 2011 where prices exceeded $100 per MWh and reached the market price cap of $12,500 per MWh.[2]

Evidence suggests that opportunities have been found across the supply chain to use DSP where it is cost effective. Futura investigated the suite of DSP options in the NEM including curtailable load arrangements, direct load control (for hot water and pool pumps), pricing strategies, thermal energy storage, energy conservation and efficiency,

1 *AEMC Power of choice review – giving consumers options in the way they use electricity*, issues paper, 15 July 2011.

2 Futura Consulting, *Investigation of demand side participation in the electricity market*, report for the Australian Energy Market Commission, 8 December 2011, p. 47.

residential fuel substitution, power factor correction programs and distributed generation. In total, they estimated around 2900 MW of dispatchable (contracted) and non-dispatchable (non-contracted) DSP available in the NEM as at December 2011.[3]

Of the DSP measures available, Futura found that the energy conservation and energy efficiency measures offered the greatest quantum of support to manage average demand (estimated at 8,965 annual GWh). For peak demand management, households participating in direct load control for hot water are having the greatest impact, with around 1750 MW shifted from peak load in summer and 2500 MW shifted in winter annually (representing around 4 and 6 per cent of total peak demand respectively).[4]

**DSP options**

Table 3.1 outlines the range of potential DSP options that are or could be available for uptake in the electricity market. These options are grouped into the following categories:

- Peak load management – activities that seek to reduce demand at the time of the system or network peak.[5] Network load management projects can be deployed strategically in geographical areas where network constraints occur at the system peak or can be implemented in particular locations to reduce peak demand on a specific network element. Retail load management activities are market-driven demand responses related to high wholesale pool price events.

- Energy conservation and efficiency - programs, technologies and measures that reduce the energy used by specific end-use devices or systems without reducing the quality of services provided, i.e. same or improved service for less energy.

- Fuel substitution - actions which change the type of fuel source (e.g. from electricity to gas for cooking).

- Distributed generation (including standby generation, small scale renewables, and co-generation/tri-generation) - small, modular units connected on the 'customer's side of the meter' that can generate energy for the owner or provide energy back to the grid.

- Distributed storage - deliver stored electricity to the electricity grid or an end-user (distributed storage technologies are often located at or near the point of use).

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3 Cogeneration and residential fuel substitution are not included in this estimate.

4 Futura Consulting, *Investigation of demand side participation in the electricity market*, report for the AEMC, 8 December 2011, p. 60.

5 For the purposes of this review, system peak is defined as the highest level of instantaneous demand for electricity during the year on the system (as defined by State, NEM-wide or DNSP network).

A comprehensive overview of the DSP options outlined in Table 3.1 is provided in the supporting report by Futura Consulting.[6]

DSP measures vary across multiple dimensions. Parties that are implementing DSP must make a choice for each of these options:

- customer segment: residential, commercial, industrial, government;
- signal to the end-use customer: incentive-based or price-based;
- trigger for the demand response event: reliability versus price;
- response requirement: mandatory versus voluntary;
- dispatchability: dispatchable versus non-dispatchable;
- notification: day-ahead versus day-of notification;
- control: utility-controlled versus customer-controlled; and
- type of incentive payment: fixed versus market-based.[7]

6 Futura Consulting, *Investigation of existing and plausible future demand side participation in the electricity market*, Report for the AEMC, 8 December 2011. See http://www.aemc.gov.au/Media/docs/Futura%20Consulting-508587ea-32b3-42b1-9e8b-014c62231aff-0.PDF .

7 The Brattle Group, *Bringing demand-side management to the Kingdom of Saudi Arabia*, final report, 2011.

**Table A.1 DSP options and opportunities**

| DSP option | Mechanism/s | Consumer impacts | Other party potential impacts | Parties most likely involved in measure | Available in the market |
|---|---|---|---|---|---|
| **Peak Load Management** | Interruptible supply contracts based on consumers shedding interruptible loads (e.g. facility shifting production to periods outside high pool prices, or at night). Arrangements can be either through:<br>• availability payments, which electricity consumers receive for nominating a DSP resource that they can commit; or<br>• dispatch payments, which electricity consumers receive if they actually shed load in response to a request. | Potential cost savings for businesses. Some costs to businesses for implementation of technology and infrastructure | Retailers - provides an alternative to hedge against high wholesale pool prices<br><br>NSPs - may provide a mechanism to defer network augmentations, reduce load at risk, or improve supply quality and reliability | Very large industrial energy users<br><br>Retailers<br><br>NSPs<br><br>Specialist third party DSP aggregators[58] | Yes |
| | Direct load control of appliances such as hot water, air conditioners and pool pumps – typically through contracts with consumers to enable cycling/shut down on short notice | Potential cost savings for businesses and residential consumers | Costs for networks to establish programs<br><br>NSPs - may have some network augmentations savings | Commercial and residential consumers<br><br>NSPs | Direct load control (DLC) hot water in households has been occurring since 1960's<br><br>DLC trials underway to test pool pumps, and air conditioners |

| DSP option | Mechanism/s | Consumer impacts | Other party potential impacts | Parties most likely involved in measure | Available in the market |
|---|---|---|---|---|---|
| | Thermal storage - uses air conditioning chillers or an industrial refrigeration plant to store cool water or to build ice during off-peak hours to serve part or all of an on-peak cooling requirement | Potential cost savings for businesses | Reductions in need to expand the network to meet constraints. Some costs to establish | Consumers - commercial and industrial facilities | Ergon Energy implemented a thermal energy storage project through a partnership with James Cook University |
| | Price based approaches utilising different tariff arrangements:<br><br>• time of use (TOU) - cost-reflective pricing in which the day is divided into time bands and different prices are charged during each time band (i.e. peak, off-peak and shoulder).<br><br>• seasonal time of use (STOU) - aim to better reflect the differing seasonal costs of electricity supply, and therefore to apply a different TOU price schedule at different times of year.<br><br>• DPP - seek to more closely mirror supply and demand conditions where for a few hours each year the cost of electricity supply is highly | Timely energy consumption information<br><br>Price signals for customers which would allow them to more effectively manage their peak electricity usage and reduce costs | Network potential for deferring network capital expenditure for peak demand period capacity. Some increased costs due to IT systems and interactions with consumers<br><br>Retailers - benefits for competition and innovative product and service options<br><br>Some cost impacts - advanced billing systems and customer management | Currently technology enabled in large commercial and industrial businesses<br><br>Some small to medium business and residential consumers<br><br>Retailers<br><br>NSPs | Ausgrid trialling of TOU tariffs for mass market customers since 2004<br><br>At present STOU tariffs are in the trial stage in Australia<br><br>DPP tariffs for the Australian residential sector are primarily in the trial and pilot stage<br><br>Limited wide scale application of DPP for small to medium C&I businesses<br><br>PTR - Currently being offered by Endeavour Energy |

| DSP option | Mechanism/s | Consumer impacts | Other party potential impacts | Parties most likely involved in measure | Available in the market |
|---|---|---|---|---|---|
| | skewed from the average.<br><br>• PTR - alternative form of dynamic peak pricing where customers are paid a rebate for reducing energy use during specific dispatch events. | | | | |
| | Power factor correction measures that reduce losses and current by installing capacitor banks | Improved power factor<br><br>Potential cost savings | Peak demand reductions<br><br>Network augmentation savings | Medium to Large C&I facilities<br><br>NSPs | EISA Utilities, Ausgrid, Endeavour Energy, and Ergon Energy have all implemented PFC programs to actively manage peak demands for network services |
| **Energy Efficiency** | Actions that consumers can utilise to improve their energy use. Such as installing more efficient appliances, lighting, water heating and space conditioning systems to minimise either annual energy use or shift their energy use to off-peak periods | Potential cost savings<br><br>More efficient consumption and appliances/equipment<br><br>Some cost impacts for investments made | Reductions in overall demand for electricity<br><br>Some cost impacts for retailers for managing schemes | Commercial and Industrial facilities<br><br>Residential consumers<br><br>Retailers<br><br>Networks<br><br>Generators | EEO programs<br><br>State and territory white certificate schemes<br><br>Appliance and building rating schemes (CBERS) |
| **Fuel** | Though use of equipment and technologies to replace | Improved efficiency of energy | Potential impacts on grid and hence network | Residential | Phase-out will apply to greenhouse intensive |

| DSP option | Mechanism/s | Consumer impacts | Other party potential impacts | Parties most likely involved in measure | Available in the market |
|---|---|---|---|---|---|
| **Substitution** | electricity as end use energy source with another fuel (e.g. substitution of electric resistance heating for solar hot water) | use<br><br>Improved efficiency of appliances/equipment<br><br>Some cost impacts for investments made<br><br>Potential cost savings | augmentations<br><br>Potential impacts on retail competition | consumers<br><br>Commercial and industrial facilities | hot water systems<br><br>No evidence of large uptake in C&I sector |
| **Distributed generation** | Use of:<br><br>• standby generators that are installed in customers premises to provide backup supply in the event of a loss of mains power;<br><br>• small scale renewables, notably rooftop PV installations; and<br><br>• co-generation and tri-generation units. | Enhance reliability of supply<br><br>Potential cost savings<br><br>Some costs to implement | Improve reliability and security of supply<br><br>Potential savings from deferring need for generation and network augmentation<br><br>Some costs to implement | Retailers<br><br>NSPs<br><br>Residential consumers<br><br>Commercial and industrial facilities | Yes, through standby generators, small scale renewables and cogeneration for example |

| DSP option | Mechanism/s | Consumer impacts | Other party potential impacts | Parties most likely involved in measure | Available in the market |
|---|---|---|---|---|---|
| **Distributed storage** | Technology designed to store electricity to provide to the electricity grid or an end-user | May increase power quality and reliability for residential, commercial, and industrial customers by providing backup and ride-through during power outages | Load levelling and peak shaving | Networks<br><br>Industrial and commercial facilities<br><br>Consumers | Battery storage is an emerging area. Some pilots and trials |

# B Examples of consumer engagement

**GB Smart Meters Consumer Engagement Strategy**

In Great Britain, the Government is placing a licence obligation on gas and electricity suppliers that will oblige them to set up a not –for-profit central delivery body for the smart meter consumer engagement strategy. The reason for setting up this body is that there have been considerable concerns about how to run an effective engagement strategy given that metering is a retailer responsibility and therefore that there will not be a co-ordinated area by area geographical roll-out. The main rationale for smart meters in Great Britain is that they will provide better information to consumers to enable them to monitor and reduce their energy consumption (to help meet climate change targets). Without effective consumer awareness, education and engagement there was a risk that this objective might not be realized.

The delivery body will be up and running in 2013, in advance of the major roll-out of smart meters that will commence in 2014 (some smart meters are being installed at present by some suppliers).

The Board that runs this body will be made up of industry and consumer organisation representatives. The purpose of the Central Delivery Body is to deliver a consumer engagement programme which:

- contributes to the cost-effective provision and installation of Smart Meters
- facilitates energy consumers to realise the benefits, including in particular in respect of energy consumption, of Smart Meters.

The objectives of the Central Delivery Body are to:

- build consumer confidence in the installation of Smart Metering Systems by gas and electricity suppliers;
- build consumer awareness and understanding of the use of Smart Metering Systems (and the information obtained through them);
- increase the willingness of energy consumers to use Smart Metering Systems to change their behaviour so as to enable them to reduce their consumption of energy; and
- ensure that energy consumers with low incomes and those who are of Pensionable Age, disabled or chronically sick can realise the benefits of Smart Metering Systems while continuing to maintain an adequate level of warmth and meet their other energy needs.

The Delivery Body has to produce a Consumer Engagement Plan which must (among other things):

- be co-ordinated with the smart meter consumer engagement activities undertaken by gas and electricity suppliers and other third parties;
- take into account the need to adopt different activities for different types of consumers, including consumers paying by different payment methods, residing in different geographical areas and occupying different types of property and
- takes into account the additional assistance that may be required by particular categories of consumers, including in particular consumers with low incomes and those who are of Pensionable Age, disabled or chronically sick

**UK Digital TV switchover Help Scheme**

Information on this scheme is included as an interesting example of how to engage with vulnerable households.

In 2005 the UK Government asked the BBC to manage a scheme to ensure that older and disabled people were not left behind as the country switches to digital television. Most of the UK has now been switched to digital television. The scheme is likely to have helped more than one million households when switchover completes in 2012. The scheme is widely recognised as a model of good practice in how to reach out to hard to reach groups. One of the senior people who worked on the scheme has been recruited to assist with the GB national smart meter roll-out in view of the recognised success of the Help scheme.

The Help Scheme recognised that the people most at risk of losing their television service during the switchover would be those who find it difficult to cope and lack support networks. To help understand and serve different levels of need, the Help scheme categorized eligible people into three broad groups, termed the ‘80%’, ‘15%’ and ‘5%’. Tailored approaches for each group gave them the best chance of reaching everyone.

- The ‘80%’ can, generally speaking, be reached using mainstream advertising and publicity.
- The ‘15%’ will need the help and support of someone else to switch, for example a friend, family member or carer.
- The ‘5%’ will not get through switchover alone and have no strong support network to rely upon.

The methods used by the Help scheme worked at a number of different levels to target the different groups.

- direct mailings to individual households (information pack and two follow up letters).
- TV, radio and press advertising.

- distributing materials in local communities wherever eligible people are most likely to see it, for example in Post Offices and on buses. Innovative targeted materials such as branded pharmacy bags.

- a "Helping hand campaign" to encourage families, friends and neighbours to check whether eligible people are aware of the switchover and the help available.

- working with statutory authorities, particularly social and healthcare services to set up information points at libraries, town halls, council offices, day centres, hospitals and health centres. They have also worked with housing associations and provided training to local police forces.

- working with one or more primary charity partners in each region - for example, Age UK, to train volunteers to spread the word about the Help Scheme through a range of local events.

The Help scheme recognised however, that working with statutory and charitable organisations would not guarantee they would reach the most isolated individuals (the 5%).

Most organisations, agencies and programmes struggle to find ways to reach people within this last group, who tend not to engage with mainstream communications. Because of their circumstances they can be extremely selective about the people they trust and tend to rely on very few 'contact points' with the world. One or two trusted people could be the only reliable route to reach them, so the Help scheme developed the innovative 'Communities Programme' that uses word of mouth to generate interest among those people that the '5%' already know and trust most. They term these people 'community supporters', and they range from local shopkeepers, hairdressers, carers, drivers for community car services, postmen, GPs and psychiatric nurses.

The Digital Switchover Help Scheme is thus a good example of how to engage effectively with groups of people who tend to be very difficult to reach through standard forms of engagement.

Published reviews[8] are available on the Digital Switchover website.

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8 http://www.digitaluk.co.uk/__data/assets/pdf_file/0015/48012/Review_of_the_Granada_Digital_TV_Switchover_-_Published_April_2010.pdf

# C Demand response mechanism

## C.1 Introduction

This appendix outlines the operation of the demand response mechanism that pays consumers via the wholesale market. The first section describes how the mechanism works when a demand response interval is activated, and includes the financial transactions of each of the parties involved including the consumer, the retailer and AEMO.

This section is followed by two examples of the payment mechanism, which demonstrates the financial responsibilities of each party and shows that under the mechanism the retailer should be indifferent to the demand response actions of the consumer. In the first example the spot price is unchanged during the demand response interval. In the second example the spot price is reduced as the consumer enters into the demand response interval.

The last section covers in more detail the issues associated with calculating a consumer's baseline consumption including the different methodological approaches.

## C.2 Description of demand response mechanism

The following section outlines the key design components of the demand response mechanism, which include:

**Contractual arrangements and the consumer's estimated consumption:**

- A consumer providing a demand response must have a retail contract in place with a registered Market Customer[9] (i.e. a retailer).
- The retailer will be settled in the wholesale market based on the consumer's estimated baseline consumption.
- The consumer would be expected to pay their retailer according to its estimated consumption at the retail tariff.
- A consumer registers with AEMO their participation under the demand response mechanism.
- A consumer can choose to have its demand resources participate on a scheduled or non-scheduled basis, subject to any threshold requirements.

9 The rules define a Market Customer as "a customer who has classified any of its loads as a market load and who is also registered by AEMO as a Market Customer under Chapter 2". Typically, Market Customers are retailers and the primary interface between end-use consumers and the wholesale market and ancillary services market.

- The quantity of demand response a consumer delivers to the wholesale electricity market during the demand response interval is calculated as the difference between the consumer's estimated consumption and the actual metered consumption at the consumer's site.

- A methodology would need to be developed for calculating a consumer's estimated consumption.

**Market operation, scheduling arrangements and the impact on the spot price:**

- Subject to threshold requirements a consumer should be required to notify their retailer and AEMO of their intention of beginning a demand response interval by the start of the interval, and similarly at the end of the demand response interval.

- No change occurs in the dispatch process and the calculation of the spot price would continue as it does now where the marginal scheduled bands of generation or demand resource would be the basis for the spot price.

- *Non-scheduled demand resources.* If the demand resource is non-scheduled then the reduced demand may indirectly lead to a spot price that is lower or unchanged. Non-scheduled demand resources participating under this mechanism would be exposed to the same price risk as a demand resource on a pass-through tariff.

- *Scheduled demand resources.* If the demand resource is scheduled it would appear in AEMO's dispatch process in the same way as scheduled demand does now and would be dispatched in accordance to its bid. This could result in the partial dispatch and price being set by the demand resource bid.

**Settlement and the impacts on retailers and consumers:**

- AEMO pays the consumer for the quantity of demand response delivered to the market during the trading interval at the spot price. Hence the consumer pockets the difference between the spot price and the retail price (energy component).

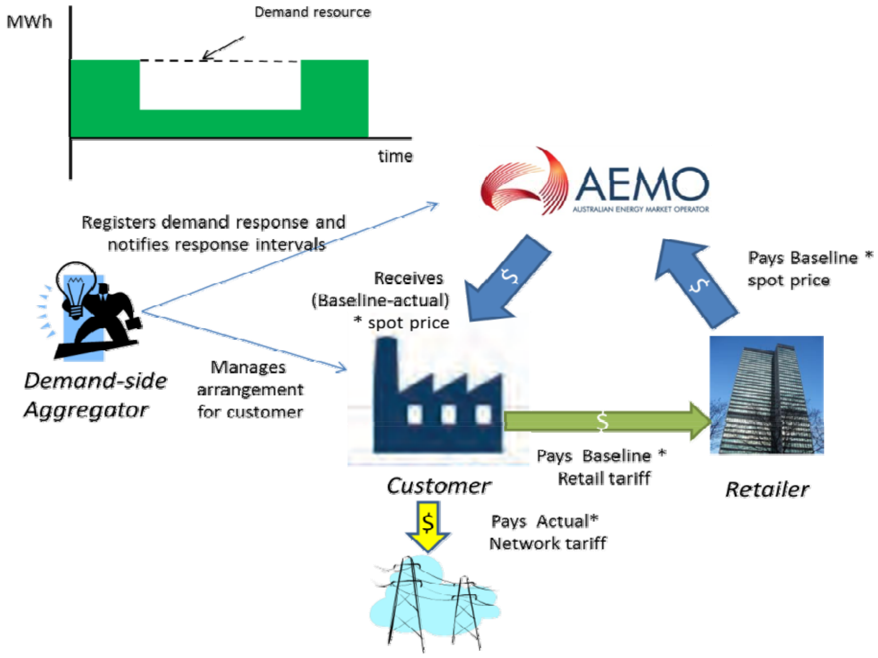
- A verification or auditing process is required to confirm the amount of demand response delivered to the wholesale market by the consumer.

- Subject to detail on the accuracy of the consumer's estimated consumption, the retailer would be cost neutral in spot market settlements to the arrangements. The consumer providing the demand resource would benefit from the difference between the retail tariff and the prevailing spot price net of any lost production.

- The consumer pays the network use of system charges based upon its actual consumption volume, not its estimated consumption.

Figure C.1 outlines the general design and economic relationships that would exist under the proposed demand response mechanism.

**Figure C.1 General design of demand response mechanism**




**Integrating consumer demand resources into AEMO's central dispatch process**

A consumer should have the ability for its demand resource to be included as part of AEMO's centrally coordinated dispatch engine. Similar to generation, it would be dispatched when its bid is equal to, or less than the marginal bid. The marginal bid of a consumer's demand resource should reflect the opportunity cost of not consuming electricity. The consumer would receive the wholesale spot price for the amount of demand resource delivered to the market for the trading interval.

If a consumer's demand resource is not included as part of AEMO's centrally coordinated dispatch process, then the consumer would decide the timing of the interruption of supply in the same way a non-scheduled generator can decide when to generate. The consumer would receive the wholesale spot price for the each amount of demand resource delivered to the market.

**Demand resource dispatch and the spot price**

Under the mechanism, the spot price would continue to be calculated in the same manner that it currently is, where the marginal scheduled bands of generation or demand resource form the basis of the spot price.

Irrespective of whether a consumer's demand resource is included in the central dispatch process, it would receive the prevailing spot price for the quantity of demand response delivered to the market during the trading interval. The spot price may change if the consumer's bid into the market is the marginal bid which displaces the next available generator or demand resource in the bid stack. The spot price may also change if the reduced demand results in an efficient generator offer being marginal.

The quantity of demand resource delivered to the market is calculated based upon the difference between a consumer's actual metered consumption during the demand response interval, and its estimated baseline consumption. The estimated baseline consumption should reflect the consumption that would have occurred at the consumer's site had it not provided a demand response.

Section C.4 outlines the various types of methodologies that can be used to calculate a consumer's baseline consumption.

**Financial liabilities of each market participant**

A key design issue in developing the demand response mechanism is how the funds are raised to pay the consumer for their demand response. A variety of approaches are used internationally, each which depends on the structure of the electricity market.

Some approaches rely on either a capacity market or a day ahead market to pay the demand response, which is intended to give certainty to the consumer that they would be dispatched, and enough notification to prepare for the curtailment activity. In other jurisdictions, funding of demand resources is accumulated through market participant fees, as the demand resource is viewed as delivering a net benefit to the market.

Under the proposed mechanism this issue is overcome by paying the consumer the spot price and by requiring all relevant parties to continue to fulfil their financial liabilities in the market in line with a consumer's estimated baseline consumption.

The following actions should continue to take place during the demand response interval and for the settlement process:

1. A consumer continues to pay its retailer for the supply of electricity at the retail contract tariff and at its estimated baseline consumption. This means that a retailer should not see a change in the level of consumption by a consumer during the demand response interval.

2. The retailer responsible for the supply of electricity at a consumer load site will be settled in the wholesale market based on the consumer's estimated baseline consumption.

3. Because the retailer and the consumer continue to fulfil their financial liabilities as though the demand response action had not taken place, AEMO would effectively over recover funds from the market. This is because the market is settled according to price and volume that takes into account the demand response interval, but AEMO is paid as though there is no change in volume.

4. At the conclusion of the settlement process AEMO is left neutral after paying the consumer for its demand response action. AEMO pays the consumer for the amount of demand resource delivered to the market at the spot price during the trading interval. The amount of demand resource delivered to the market is calculated as the difference between the consumer's baseline consumption and its metered consumption during the trading interval.

Consumers would benefit from the market based transaction according to the difference between the spot price and their retail tariff. However, the total net benefit to the consumer would also take into account the opportunity cost of not consuming during the demand response interval.

- **Network charges**

A consumer's retail bill consists of energy costs and network charges. Under the proposed demand response mechanism only the network component of the bill would change as the consumer would continue to pay its retailer according to its baseline consumption. Network charges, however, would be based on a consumer's actual consumption which would be less during the demand response intervals.

This may necessitate some changes to retailer's billing system to accommodate the different types of charges. However, separate line items for each component of a consumer's retail bill may assist consumers in understanding the value of the energy component of their retail tariff and their impact on the network.

It should be noted that the mechanism is initially designed for C&I users where network charges may already be separated from wholesale costs.

## C.3 Examples

**Example 1 – No change to spot price**

The following worked example demonstrates how consumers are paid by the market for their demand resource. It also serves to demonstrate that the net position of a retailer and AEMO are unchanged at the conclusion of the settlement process if the spot price is unchanged by the consumer's demand response action. This worked example assumes that a consumer's demand resource is not the marginal bid and would therefore not have any effect on the spot price.

Table C.1 outlines necessary system and market participant information for calculating the amount that should be paid to the consumer for its demand response. In this example, a consumer's total estimated baseline consumption is 3MWh, and it can offer 2MWh of demand response into the wholesale electricity market for a period of one hour. The retail contract price is $40/MWh, and the spot price is $50/MWh.

### Table C.1 Inputs – both examples

| System and market participants parameters | Inputs |
|---|---|
| **Overall system demand** | 100MWh |
| **Consumer's baseline consumption** | 3MWh |
| **Consumer's available demand resource** | 2MWh |
| **Retail contract price** | $40/MWh |
| **Demand response interval** | 2MWh for 1 hour |
| **Retailer continues to pay baseline consumption** | 3MWh |
| **Spot price is unchanged** | $50/MWh |

Table C.2 calculates the changes in total system demand and each market participant's liability in the market, and their position at the conclusion of the settlement process. The demand response scenario is compared to the counterfactual scenario where the consumer does not provide any demand response into the market.

### Table C.2 Calculating compensation for demand response interval – no change to spot price

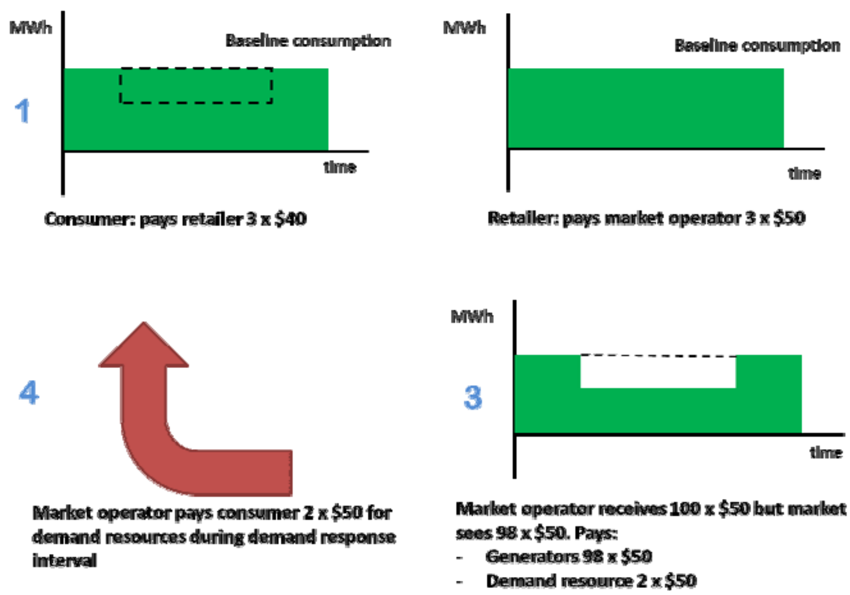
| No change to spot price | Counterfactual (no DR) | Scheduled demand response |
|---|---|---|
| **Changes to system demand during demand response interval** | | |
| Consumer baseline consumption | 3 | 3 |
| Demand response | 0 | 2 |
| Consumer's load during demand response interval | 3 | 1 |
| Total system demand | 100 | 98 |
| Total demand settled by market | 100 | 100 |
| Spot price | $50/MWh | $50MWh |
| **Wholesale market settlement process after demand response interval** | | |
| Retail contract tariff | $40/MWh | $40/MWh |
| Consumer pays retailer **(1 x 7)** | $120 | $120 |
| Retail payment to AEMO **(1 x 6)** | $150 | $150 |

| No change to spot price | Counterfactual (no DR) | Scheduled demand response |
|---|---|---|
| **Changes to system demand during demand response interval** | | |
| AEMO pays consumer **(2 x 6)** | $0 | $100 |
| Consumer net position in market **(spot price minus retail contract tariff per MWh)** | -$120 | -$20 |
| Retailer net position in market **(spot price minus retail contract price per MWh)** | -$30 | -$30 |

In this example, it is clear that the consumer is better off by undertaking the demand response action in the market. In total, the consumer is better off by $100 less the loss in value of not consuming. The consumer continues to fulfil its financial liabilities to the retailer, but is also paid by the market. In the counterfactual scenario, the consumer continues to fulfil its financial liabilities to its retailer, but is not paid by the market. The difference between the consumer's net position in the market without the demand response is -$120 compared to -$20 with the demand response.

Without a mechanism for paying a consumer for its demand response action, a consumer can only benefit by reducing its consumption and avoiding the retail contract tariff. In this example, if the consumer reduced its consumption by 2MWh for one hour it would save $80 (2MWh x $40). Its benefit for this action would be -$40 (liability under its retail contract tariff plus the avoided cost of consumption, i.e. -$120 + $80). Under the demand response mechanism, the consumer is better off by $20 (liability under the retail contract tariff plus its payment from AEMO, i.e. -$120 + $100).

**Figure C.2 Financial liabilities – no change to the spot price**



**Example 2 – Change to spot price**

The wholesale electricity spot price would only change if a consumer's bid into the market is the marginal bid, which displaces the next available generator or load in the bid stack or reduced demand changes the marginal generator. This type of scenario is more likely to arise where there is a significant difference in the marginal cost of supply between two resources in the bid stack, or the consumer can offer substantial volumes of demand resources which displaces the next available generator.

In this example, the consumer's dispatch of 2MWh of demand resources is the marginal bid and impacts on the spot price. **During the demand response interval the spot price is reduced from $50/MWh to $45/MWh.** The retail contract tariff is unchanged in this example and remains at $40.

Table C.3 outlines necessary system and market participant information for calculating the amount that should be paid to the consumer for its demand response.

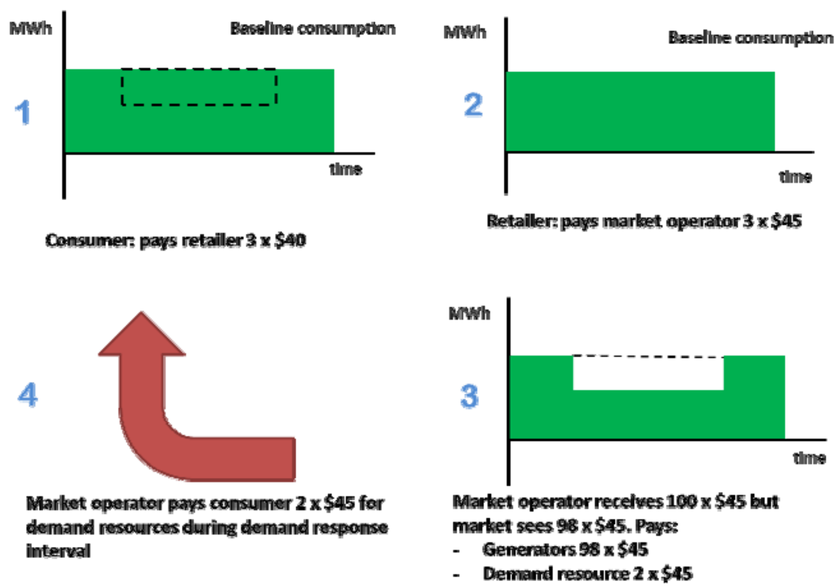
**Table C.3 Calculating compensation for demand response interval – change to spot price**

| **Change to spot price** | **Counterfactual (no DR)** | **Scheduled demand response** |
|---|---|---|
| **Changes to system demand during demand response interval** | | |
| Consumer baseline consumption | 3 | 3 |
| Demand response | 0 | 2 |
| Consumer's load during demand response interval | 3 | 1 |
| Total system demand | 100 | 98 |
| Total demand settled by market | 100 | 100 |
| **Spot price** | **$50/MWh** | **$45MWh** |
| **Wholesale market settlement process after demand response interval** | | |
| Retail contract tariff | $40/MWh | $40/MWh |
| Consumer pays retailer **(1 x 7)** | $120 | $120 |
| Retail payment to AEMO **(1 x 6)** | $150 | $135 |
| AEMO pays consumer **(2 x 6)** | $0 | $90 |
| Consumer net position in market **(spot price minus retail contract tariff per MWh)** | **-$120** | **-$30** |
| Retailer net position in market **(spot price minus retail price per MWh)** | **-$30** | **-$15** |

In this example, it is clear that the consumer is better off by undertaking the demand response action in the market. The amount by which the consumer is better off is the $90. The consumer continues to fulfil its financial liabilities to the retailer, but is also paid by the market. However, because the spot price has changed the amount the market pays the consumer per MWh is less than in the previous example. The difference between the consumer's net position in the market without the demand response is -$120 compared to -$30 with the demand response.

In this example, the retailer pays AEMO for the consumer's baseline consumption but at a lower spot price. While the retailer is indifferent to the actions of its consumers demand response, it may benefit from the reduced spot price as the difference between the retail contract price and the spot price has tightened. The extent to which a retailer would benefit from the reduced spot price would also be determined by their hedging arrangements. Irrespectively, the retailer's net position in the market improves when there is a fall in the spot price (-$15) compared to when there is no change in the spot price (-$30) as was the case in example 1.

**Figure C.3 Financial liabilities – change to the spot price**



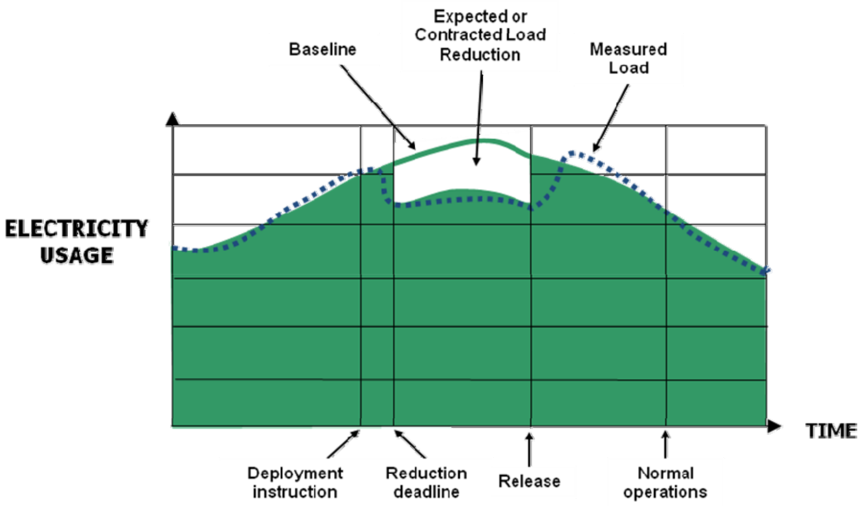

## C.4 Baseline consumption methodologies

An important component of a demand response mechanism is calculating a consumer's baseline consumption to determine the amount of demand resources delivered to the market during a demand response interval. Typically, the amount of demand resource delivered to the market by a consumer is calculated as the difference between a consumer's actual metered consumption during the demand response interval and their estimated consumption had they not provided the demand response.

Determining a consumer's estimated consumption – otherwise referred to as a consumer's baseline consumption – is a key design element of a demand response program that pays consumers for their demand response. An accurate consumer baseline should mirror as closely as possible the likely behaviour of that consumer had they not been dispatched during the demand response interval.

This principle is demonstrated in Figure C.4.[10]

**Figure C.4 Calculating baseline consumption**




Typically, the baseline consumption calculation is made up of two different components. The first component with the greatest weight relates to the consumer's consumption over a period of days or weeks and represents the consumer's consumption as a longer term average. The second component considers the consumer's consumption immediately prior to the demand response and is called a baseline adjustment. The weighting of each of these components would vary from amongst approaches to most accurately reflect a consumer's baseline consumption.

Determining an appropriate methodology for calculating a consumer's baseline consumption is a matter that has been extensively explored in the United States as demand response programs have been introduced into some electricity markets. The North American Energy Standards Board (NAESB) was tasked with developing standards for the different types of methodologies that can be used to calculate a consumer's baseline consumption.

The NAESB identified four different techniques for calculating a consumer's baseline consumption. Each methodology uses a different set of parameters to accommodate different load characteristics, as well as the specific objectives of a demand response program. These are outlined in section C.4.[11]

10 See Recommendation to the NAESB Executive Committee, *Review and develop business practice standards to support DR and DSM – EE programs*, Proposed standards, October 3, 2008. We note that the diagram represents arrangements for scheduled demand resource, and does not represent arrangements for non-scheduled demand resources, or reflect 5 minute intervals that are used in the NEM.

11 See Recommendation to the NAESB Executive Committee, *Review and develop business practice standards to support DR and DSM – EE programs*, Proposed standards, October 3, 2008 and EnerNOC, *The Demand Response Baseline White Paper*, 2011

Box C.1: provides an example of how the baseline consumption is estimated in the Pennsylvania, Maryland and New Jersey (PJM) electricity market demand response program.

**Box C.1: Demand response in the PJM electricity market**

The PJM electricity market has a demand response program in place which enables retail electricity consumers to earn revenue for reducing electricity consumption when either electricity prices are high, or the reliability of the electricity grid is threatened. Demand responses are classified as either Economic or Emergency Demand Response.

For Emergency Demand Response, consumer revenue for reducing consumption is largely driven by participation in PJM's capacity market. Economic Demand Response is compensated at the locational marginal price when the benefits of providing the demand response are outweighed by the costs of providing the demand response. The Federal Energy Regulatory Commission's (FERC) final rule outlines that demand resources are compensated at the locational marginal price when the following conditions are met:

- the demand resource has the capability to balance supply and demand; and
- payment of locational marginal price to the demand resource is cost effective.

The framework used to calculate a consumer's baseline consumption is based on a "Baseline type I" model – specifically, a high 4 of 5 averages with symmetric additive adjustment.

Under this method, the five most recent "non-event" days are selected for calculation, which should also exclude public holidays, weekends and "event" days. For each of the five days selected, the average daily event period usage and average event period usage level is calculated. If any day's average daily event period usage is less than 25 per cent of the average, then this day is excluded from the calculation, and replaced with the next eligible non-event day. At the conclusion of this process, the day with the lowest average daily event period usage is eliminated from the top five days to achieve the high 4 of 5 averages.

The calculation also includes a symmetric additive adjustment to adjust the consumer's baseline consumption to load conditions prior to the load reduction event. This calculation works by skipping one hour prior to the start of the event, and counting back, averaging the next three hours to obtain a 'basic average'. The basic average is then compared to the high 4 of 5 averages. The difference between the two averages is used to ratchet the consumer baseline value either up or down.

Selecting a baseline consumption methodology that would accurately reflect the behaviour of the load is a complex matter and would depend on a number of factors such as the characteristics of the load and the objective of the demand response program. For example, if load is characterised by high variability or is highly weather dependent then a baseline consumption calculation that relies on an average dynamic load profile may not be suitable. This is likely to result in consumption prior to the demand response event either being over or under-estimated. Instead, a more appropriate methodology would rely on metering before/metering after, or a Maximum Base Load approach.

The objective of a demand response program may also require closer consideration to the type of baseline adjustments that may be used. For example, if the objective of the program is to manage peak load during summer periods, then a baseline adjustment that adjusts the baseline consumption both upwards and downwards may result in perverse behaviour on behalf on the consumer. As EnerNOC points out, if a demand response has been called over two consecutive days, and the third day is likely to be the hottest, the customer might need to start up operations during the baseline adjustment period just to avoid a baseline compromise. If the baseline adjustment was symmetrical (i.e. only adjusted upwards) then the consumer could have cancelled the whole shift and not worried about baseline erosion.[12]

Even where load characteristics are predictable there is a need to closely monitor the effectiveness of the selected baseline methodology to ensure that the baseline consumption methodology delivers accurate results. A study by KEMA in 2011 examined the accuracy of baseline assessments in the New England electricity market. The study found that a number of distortions in a consumer's baseline consumption can unintentionally arise where "continuous event days cause the accuracy of the baseline to degrade over time as there is little or no recent data to refresh the baseline. Consequently baselines can become 'stuck' and based on old data that does not provide an accurate estimate of current load consumption patterns". Therefore, additional mechanism may be required to ensure that data is frequently refreshed and the consumer's baseline consumption remains current and reflective of their behaviour.[13]

## C.5 Estimating commercial and industrial users potential demand response

We asked Oakley Greenwood consulting to provide an estimate of the indicative materiality of demand side participation in the NEM from C&I users.[14] Using secondary sources, such as survey results from Australia and internationally, Oakley Greenwood estimate that a demand response mechanism may have the potential to capture between 2,100 – 2,800MW from C&I users. This figure is achieved by assuming that peak demand is around 35,000MW in the NEM, and that six to eight per cent of this amount could be reduced in the form of a demand response.

12 See EnerNOC, *The Demand Response Baseline White Paper*, 2011, p. 16

13 See KEM, *Analysis and Assessment of Baseline Accuracy*, final report, August 4, 2011

14 Energy efficiency measures programs in the C&I sector omitted to limit the scope of the question and to focus on measures that are dispatcheable and therefore can be used in ways similar to generation resources to (a) meet aggregate demand (b) increase competition (c) assist in meeting system reliability standards.

In the near term the C&I users are estimated to account for almost all of the potential demand response, and up to 80% in the mid-term. We understand that already 280 MW of demand response is available from C&I users in the NEM during summer period.[15] Therefore the demand mechanism is likely to build on this amount in the mid-term.

**Estimates of DSP potential in the NEM**

The following section summarises the Australian and international surveys that were used to provide a guide as to the potential demand response available from C&I users.

### Table C.4 Summary of demand response studies in Australia

| Study | Focus | DSP impacts |
|---|---|---|
| Victorian Distribution Network Service Providers (1999) | Victoria | • Technical potential[16]: 499MW<br>• Economic potential[17]: 253MW<br>• Likely market potential[18]: 193MW |
| Assessment of Demand Side Management Opportunities in NSW | NSW | • Technical potential: 516MW (medium to large industrial)<br>• Technical potential: 290MW (medium to large commercial)<br>• Market potential: 220MW (medium to large industrial)<br>• Market potential: 47-151MW (medium to large commercial) |
| Australian IEA Task XIII Study | All NEM | • Callable C&I users (winter): 2289MW<br>• Callable C&I users (summer): 1580 MW<br>Estimated DR potential as a per cent of forecast system peak demand:<br>• C&I user demand response reduction: 2439MW |

15 See the AEMC website for Futura report, *Investigation of demand side participation in the electricity market*, pg. 9, 8 December 2011.

16 **Technical potential** - the level of peak demand reduction that would result if all homes and businesses adopted the most efficient, commercially available technologies and measures, regardless of cost. This limits potential only by technical feasibility. See Assessment of Achievable Potential from Energy Efficiency and Demand Response Programs in the U.S. (EPRI) for more information regarding definitions.

17 **Economic potential** – the level of peak demand reduction that would result if all homes and business adopted the most efficient, commercially available and cost-effective measures. Cost-effective was defined in the study as any case in which the present value of the lifetime benefits of the measure exceeds the present value of the costs of that measure.

18 **Achievable market potential** – is an estimate that seeks to incorporate likely customer behaviour by considering the various organisational, market, financial, political, and regulatory barriers that may keep the level of demand side activity undertaken below that which would be justified on a strictly economic basis.

| Study | Focus | DSP impacts |
|---|---|---|
| | | • Maximum summer demand: 4.0 per cent<br>• Average summer demand: 4.8 per cent |

**Estimates of DSP in international jurisdictions**

United States

- ***Assessment of Achievable Potential from Energy Efficiency and Demand Response Programs in the U.S.*** **(EPRI)**. This survey found that the achievable potential of demand response of C&I users is around 4.7 to 6 per cent of system peak demand.[19]
- **EnerNOC, *Demand Response (DR) in the WEM,* presented to the MAC Meeting, 11 July 2012.** A number of US jurisdictions have had arrangements in place for some time to encourage DSP. Market arrangements with price levels like those within the NEM should be able to provide some boundary conditions on the amount of DSP likely to be available in the NEM. See Table A.5 below which provides information on four US electricity markets.[20]

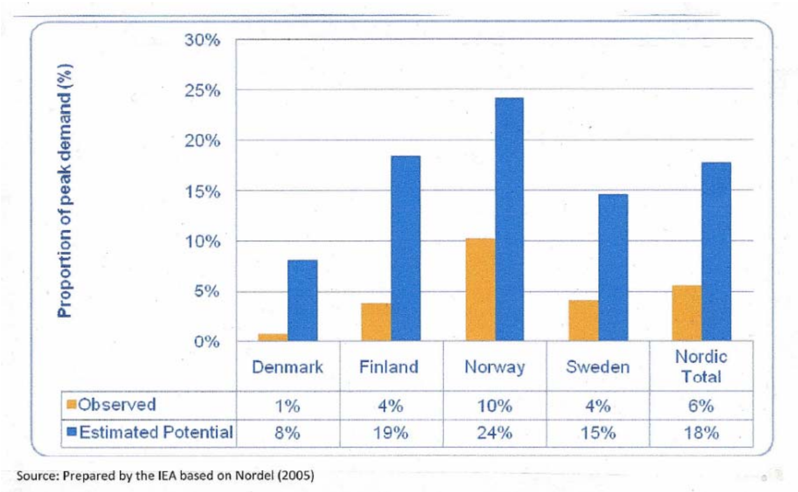
**Table C.5 Demand response in US electricity markets**

| Market | DR MW | DR % of system peak demand |
|---|---|---|
| PJM (Pennsylvania/New Jersey/Maryland) | 14,118 | 7.6% |
| ISO-NE (New England) | 2,164 | 6.6% |
| MISO (Midwest Independent System Operator) | (N/A) | 8.1% |
| NYISO (New York) | 2,248 | 6.5% |
| Average | | 7.2% |
| WEM 2012-13 (Western Australia) | 499 | 8.2% |

19 EPRI, *Assessment of Achievable Potential from Energy Efficiency and Demand Response Programs in the U.S. (2010 – 2030)*, January 2009, pp. 5-4 to 5-10.

20 EnerNOC, *Demand Response (DR) in the WEM*, presented to the MAC Meeting, 11 July 2012.

**Figure C.5** **Estimated actual and potential demand response in the Nordic region**




- **Capgemini, in collaboration with vaasaETT and Enerdata, published a study in 2008 entitled Demand response: a decisive breakthrough for Europe.** The study assessed the potential for demand response under two scenarios:
  - Scenario 1: Moderate scenario that assess DR outcomes if current market trends continue
  - Scenario 2: Dynamic scenario that seeks to quantify the fullest potential of DR throughout Europe

**Table C.6** **Key impacts of demand response in Europe**

| Impact | Scenario 1 | Scenario 2 | Dynamic scenario as % of EU 2020 targets |
|---|---|---|---|
| Energy savings | 59 TWh | 202 TWh | 50% |
| CO2 emissions reductions | 30 Mt | 100 Mt | 25% (50% of electricity industry obligation) |
| Peak generation capacity avoided | 28 GW (equivalent to 56 x 50 MW thermal plants) | 72 GW (equivalent to 150 x 50 MW thermal plants) | |
| Avoided investment | E 20 billion | E 50 billion* | |
| * Based on an average of 400ME per GW of thermal plant and taking into account an average difference between demand and gross generation of 15%, plus 50% additional savings for T&D infrastructure. This amounts to 700ME per GW avoided. | | | |

## C.6 Summary of rules changes required to implement mechanism

In order to implement the demand response mechanism we expect that the following rules changes would be required:

- Changes to the settlement process to allow retailers to pay AEMO according to their consumer's baseline consumption, and for AEMO to pay consumers for their demand response via the funds recovered from retailers.
- Agreed methodology for calculating a consumer's baseline consumption including minimum metering standards.
- Arrangements that allow a consumer to provide a demand response under this mechanism on either a scheduled or non-scheduled basis.
- A new sub-category of market generator to facilitate the entry of consumers in the wholesale electricity market as part of the demand response mechanism.
- Changes so that network charges can be separated from energy only costs by retailers. This may also require a change to retailer's billing systems, although some retailer's systems may already have this capability in place.

**Table C.7 Methodological approaches for calculating baseline consumption estimates**

| Methodology | NAESB definition | Description[21] |
|---|---|---|
| **Maximum base load** | *A performance evaluation methodology based solely on a demand resources ability to reduce to a specified level of electricity demand, regardless of its electricity consumption or demand at the time of deployment.* | This type of methodology does not require calculating a consumer's load profile on a dynamic basis but instead calculates a consumer's expected maximum energy usage. The general characteristics are as follows:<br>• Baseline shape is static<br>• Data meter from each individual site and from the system is utilised in the baseline consumption calculation<br>• Relies on historical meter data from the previous year<br>The amount of demand response delivered during a demand response interval is equal to the consumer's maximum energy usage minus the committed capacity of a customer. Under this type of methodology a consumer is required to drop their consumption to its committed capacity (its consumption baseline), and not by a certain amount. In some cases, a consumer may already be at their committed capacity when entering into a demand response interval. |
| **Meter before/meter after** | *A performance evaluation methodology where electricity consumption or demand over a prescribed period of time prior to deployment is compared to similar readings during the demand response interval.* | This type of baseline methodology is typically used in circumstances where the demand response interval occurs for a very short period of time, or at very short notice. The general characteristics are as follows:<br>• Baseline shape is static<br>• Utilises meter data from each individual site<br>• Relies on small day of time or historical meter data |

21 See EnerNOC, *The Demand Response Baseline White Paper*, 2011 for a fuller description of each of the different types of baseline consumption methodologies

| Methodology | NAESB definition | Description[21] |
|---|---|---|
| **Baseline type I** | *A baseline performance evaluation methodology based on a demand resource's historical meter data which may also include other variables such as weather and calendar data.* | This type of baseline calculation is used in most US electricity markets with a demand response program. While the types of methodologies can vary under this approach (averaging, regression, rolling average and comparable day) the general characteristics are as follows:<br><br>• Baseline shape is the average load profile<br><br>• Utilises meter data from each individual site<br><br>• Relies upon historical meter data from days immediately preceding the demand response event<br><br>• May use weather and calendar data to inform or adjust the baseline.<br><br>The baseline can be adjusted in a number of ways, and is done so to reflect load conditions immediately prior to the load reduction event. Baseline adjustments can be varied in the following ways:<br><br>• A consumer's consumption is compared to the day prior to the load event and is adjusted either on a percentage or actual kW basis<br><br>• Variation to the baseline adjustment can be restricted to only upward adjustments (asymmetric) or adjustments in both directions (symmetric).<br><br>• Using any of the above techniques, the baseline adjustment can be either capped or uncapped as a percentage of the baseline consumption |

| Methodology | NAESB definition | Description[21] |
|---|---|---|
| **Baseline type II** | *A baseline performance evaluation methodology that uses statistical sampling to estimate the electricity consumption of an aggregated demand resource where interval metering is not available on the entire population.* | This methodological approach is utilised where individual historical consumer data is not available for the consumer site or there is not a strong economic case for installing appropriate metering and telemetry at the consumer sites. However, where the information is available on a more aggregated basis, and the load profiles are roughly predictable in behaviour, a baseline consumption can be derived for a group of consumers. Typically, this type of methodology would be used for residential demand response programs. |
| **Metering generator output** | *Baseline is set as zero and measured against usage readings from behind the meter emergency back-up generator. This type of baseline is only applicable for facilities with on-site generation.* | |

# D Measures for assisting vulnerable consumers

## D.1 Introduction

This appendix gives greater consideration to the issues and arrangements in place to assist consumers meet their electricity needs in Australia. The types of arrangements include rebates and emergency payments and are determined and delivered by jurisdictional governments in the form of community service obligations (CSOs). The range of CSOs and rebate levels are largely consistent across jurisdictions.

Electricity customers that may require assistance are typically identified through social services arrangements, such as whether they receive a commonwealth government allowance which entitles them to a commonwealth concession card. Holding a commonwealth concession card is the key eligibility factor that jurisdictional governments use to determine who should receive an energy concession.

The task of identifying what type of electricity consumer may need assistance in meeting their electricity needs and costs is challenging. In this appendix we have summarised Australian and international studies that have sought to better understand the characteristics of electricity customers that may need assistance in this regards. In Australia, these types of customers are categorised as 'vulnerable consumers'. It should be noted that in Australia there is currently no operational definition used by governments to define vulnerable consumers. The National Energy Customer Framework does not define vulnerable consumers, although it provides a regulatory process for retailers to implement hardship programs for customers experiencing temporary or more permanent difficulties in meeting energy payments.

A recent, major review in the United Kingdom has attempted to better understand the characteristics of that the types of consumers that may need assistance in meeting electricity costs. A 'fuel poverty' indicator is used to identify these types of consumers, and is a term defined in legislation. The review considered whether the current definition of 'fuel poverty' adequately captured these types of consumers, and the types of policies that are best used to target and reach out to these consumers.

We have not attempted to define 'vulnerable' consumers as part of the Power of choice review. Understanding which consumers may need assistance in meeting electricity costs is an important social policy objective, for which governments are best placed to define.

These above issues are discussed in the appendix and are grouped into three sections:

- **Section D.2** Outlines the current arrangements for assisting customers to meet their electricity needs and costs. Some consumers are able to access energy concessions to help meet their electricity needs, which are generally in the order of $200 - $400 per year. A range of other types of assistance are available for customers with special medical needs, or emergency payments. This section also outlines the MCE CSO framework that outlines high level principles for developing non-distortionary CSOs. We also consider the South Australian Residential Energy Efficiency Scheme, of which elements of it are specifically targeted to vulnerable customers.

- **Section D.3** Summarises a number of surveys conducted by the New South Wales Independent Pricing and Regulatory Tribunal in relation to electricity consumption in that state. The survey results provide some insights into understanding the characteristics of electricity consumption by households and individuals, including electricity customers in lower income brackets. The survey results show that for low income households median spending on energy will range from 5 to 8 per cent of disposable incomes, which is more than the median spending on energy by higher income households (typically around 2 to 4 per cent of disposable income).

- **Section D.4** Summarises the findings of a recent United Kingdom study on 'fuel poverty'. A key recommendation stemming from the review was to amend the current definition of fuel poverty. The report found that the current official indicator of fuel poverty, which is based on required energy expenditure exceeding a threshold of income of 10 per cent or income, had some strengths but also serious weaknesses including its undue sensitivity to energy prices and the way it define which households are fuel poor.

## D.2 Community Service Obligations

CSOs are created by jurisdictional governments to assist consumers to meet their electricity needs and costs. Typically, a CSO might involve either subsidising the retailer to provide non-commercial service or concession on energy bills for a customer that meets certain eligibility requirements. The range and level of CSOs is determined by each state government and accounts for government spending as part of a broader range of concession programs relating to health, transport, education, etc.[22]

CSOs can be delivered to consumers in a number of different ways. They can either be provided directly to consumers as a rebate, through their retailer as a discount to their energy bill, or sometimes through community welfare organisations in the form of emergency payments. Table D.3 outlines jurisdictional government concession schemes for the NEM and includes information regarding eligibility requirements and the level or amount of concession. For most energy-related concession schemes, the concession amount is not determined according to the consumption threshold amount and is an absolute figure.

22 It should be noted that in Australia there is currently no operational definition employed by governments to define vulnerable consumers. The National Energy Customer Framework does not define vulnerable consumer, although it provides a regulatory process for retailers to implement hardship programs for customers experiencing either temporary or more permanent difficulties in meeting energy payments.

With the exception of Victoria, most energy-related concession schemes are paid as lump sum, irrespective of consumption levels.[23] In Victoria, energy concession schemes are provided as a percentage discount (around 18 per cent) of the total energy bill. As discussed below, the MCE CSO framework provides high level guidance on the design on CSOs to ensure that they have a non-distortionary impact on the market and do not blunt price signals.

Eligibility for most ongoing energy CSOs is usually determined according to whether the consumer receives a commonwealth government allowance, and therefore is eligible for a variety of commonwealth concession cards, including a Commonwealth Pension Concession Card (CPCC) or a Commonwealth Health Care Card (CHCC).

For the majority of jurisdictions eligibility for either of these two types of concession cards results in eligibility for jurisdictional energy concession schemes. In some instances, jurisdictional governments may broaden eligibility requirements to include a range of other commonwealth concession cards may not have as strict means tests applied (for example, the Commonwealth Seniors Health Card). Most jurisdictions however, set their own specific conditions for receiving energy concessions for medical purposes.

Eligibility to receive a commonwealth allowance, and therefore commonwealth concession card, is typically tested through a combination of income and asset tests (‘means tested’). CPCCs are available to a core group of government welfare recipients including job seekers, single parents and carers, age pensioners, and disability pensioners. A broader group of government welfare recipients are eligible for a CHCC, and generally includes individuals receiving a commonwealth allowance but who are not eligible for a CPCC. Table D.1 outlines the number of card holders for CPCC, CHCC, and other concession cards.

**Table D.1 Number of concession card holders**

| Concession card type | No. card holders |
|---|---|
| Health Care Card | 1,130,512 |
| (Low Income) Health Care Card | 435,745 |
| Pensioner Concession Card | 3,617,579 |
| Commonwealth Seniors Health Card | 282,186 |
| Total | 5,466,022 |

Table D.2 outlines the income thresholds to receive various commonwealth government allowances, and therefore concession cards. It should be noted that these

23 The impact of CSOs and their ability to capture ‘vulnerable’ consumers is considered in detail in a recently published paper by Paul Simshauser and Tim Nelson titled *The Energy Market Death Spiral – Rethinking Customer Hardship*

figures are approximate only, and are based on that rates for singles, and therefore excludes couples and families.

**Table D.2 Eligibility and income thresholds to qualify for Commonwealth Government allowances**

| Concession card | Eligibility | Income test |
|---|---|---|
| CPCC | Automatically issued to those receiving specific government allowances that are means tested. | For full to part pension rates an individual can earn up to $36,972 per year. |
| CHCC | Automatically issued to people who do not qualify for CPCC but who are receiving specific government allowances | Depending on government allowances can earn up to $18,532 per year. |
| CSHCC | | Must have an income of less than $50,000 per year. |
| Low Income HCC | | Must have an income of less than $30,429 per year. |

The typical income range for eligibility for commonwealth allowances and therefore access to a concession card ranges from $18,000 to $36,000 for a single person. For couples the threshold roughly doubles from between $36,000 to $72,000. For pensioners, the threshold ranges from between $30,000 to $50,000.

**MCE CSO Framework**

In 2008 the MCE developed nine high level principles to underpin the design of energy concession schemes implemented by jurisdictional governments. The high level principles are non-binding.[24]In its policy statement on the issue the MCE considered that energy CSOs are services that governments require energy businesses to provide to sections of the community to fulfil government social policy objectives.[25]

1. Energy CSOs should only be used if the service would not be in the commercial interests of an energy business to provide, or if it would only be provided commercially at higher prices than would be consistent with government and social welfare policies.

2. The obligation to provide the community service would be clearly specific by the government in publicly available documents.

24 See the Ministerial Council on Energy website for more information: http://www.ret.gov.au/Documents/mce/_documents/MCE_Energy_Community_Services_Obligation20080929151353.pdf

25 The MCE note that this definition of a CSO is based on a definition used in a 2002 National Competition Council staff discussion paper *Competitive Neutrality: scope for enhancement*. See http://www.ncc.gov.au/pdf.PIReCn-001.pdf, p31

3. Energy CSOs should be delivered transparently.

4. Wherever possible energy CSOs should be directly funded by governments.

5. CSOs should be designed to achieve their social policy objectives in a cost-effective manner.

6. An energy CSO should not be delivered by a mechanism employing cross-subsidies from one set of consumers to another.

7. CSOs should not materially impede competition, particularly in upstream (generation and gas production) and downstream (including retailing and demand side response) markets.

8. Energy CSOs should target identified sections of the community and minimise their effect on general consumption patterns.

9. Governments should conduct regular, transparent reviews of the performance of the provision of energy CSOs and of the continued need for individual CSOs.

**South Australian Residential Energy Efficiency Scheme**

In 2009 the South Australian Government introduced a Residential Energy Efficiency Scheme (REES) aimed at assisting households reduce greenhouse gas (GHG) emissions. The program requires that retailers with 5,000 or more residential customers provide an incentive to achieve GHG reductions and potentially lower energy bills through reduced energy consumption.[26]

Such incentives may include, for example, free items provided by a retailer such as draught proofing tapes, energy efficient light globes and water efficient shower heads. In addition to this, energy providers can also offer a rebate for installation of ceiling insulation, efficient hot water and other upgrades to improve the energy efficiency of heating and cooling systems.

Under this scheme low income households are eligible for a free energy audit. The eligibility requirements for these consumers are similar to those for receiving jurisdictional energy concessions. Free energy audits extend to:

- Consumers receiving a South Australian Government CSO;
- Consumers that hold a CPCC, CHCC, Department of Veteran Affairs concession card (DVA CC); and
- Those consumers participating in an energy retailer's hardship regime, for which there are not strict eligibility requirements.

26 See South Australian government website for more information: http://www.sa.gov.au/subject/Water%2C+energy+and+environment/Energy/Energy+rebates%2C+concessions+and+incentives/Energy+saving+incentives+from+energy+providers

Therefore, the major difference in eligibility requirements for this scheme, compared to energy concession eligibility, is that it also includes those customers on a retailer's hardship program who may or may not also be eligible for an energy concession, or who may be in temporary hardship.

**Table D.3 Jurisdictional energy concession schemes including eligibility and levels of compensations**

| Jurisdiction | Concession | Eligibility | Calculation | $ Concession |
|---|---|---|---|---|
| **ACT** | Energy Concession | CPCC, HCC, VAPCC | Calculated on daily basis; 44.69 cents per day (1 Nov to 31 May) and 164.34 cents per day (1 June to 31 October) | **$266.20 per year** |
| **ACT** | Utility Concession | CPCC, HCC, VAPCC | Rebate added to existing energy concession. | **$80 per year ($346.20 max combined value of both allowances)** |
| **Tasmania** | Electricity Concession | CPCC, HCC, VAPCC | Rebate increases in line with electricity price increases. Rebate covers Aurora Pay As You Go Customers. | **Approx. $407 per year (1 Jul 2011)** |
| **Tasmania** | Heating Allowance | CPCC, HCC, VAPCC. Must not have more than $1,750 in cash assets; married de facto partners must not have more than $2,750. | Payments of $28 made in May and September. | **$56 per year** |

| **Jurisdiction** | **Concession** | **Eligibility** | **Calculation** | **$ Concession** |
|---|---|---|---|---|
| **Tasmania** | Life Support Machine Rebate | Eligible on medical grounds and have a life support machine installed, or lives with someone who uses a life support machine. | Approved life support systems and per day discounts as at 1 July 2011 range from 14 – 80 cents per day. | **Range: 14 – 80 cents per day** |
| **Queensland** | Electricity Rebate | CPCC, VAPCC, DVA Gold Card, QLD Government Seniors Card | | **$230.46 per year** |
| **Queensland** | Medical Cooling and Heating Electricity Concession Scheme | Person cannot self-regulate body temperature and holds and is a Queensland resident. Applicant or legal guardian of a minor with a qualifying medical condition must hold either CPCC, HCC, VAPCC. | | **$230.46 per year** |
| **Queensland** | Home Energy Emergency Assistance Scheme | Eligible customers must have either a concession card or maximum base income that is no more than the Commonwealth Government's maximum income rate for part-age pensioners | Scheme can provide up to $720 per eligible household per year. Assistance can be provided for a maximum of two consecutive years. | **$720 per year** |
| **Queensland** | Electricity Life Support Concession Scheme | Eligible users must have been medically assessed in accordance with eligibility criteria determined by Queensland Health. People who use certain approved medical equipment at home. | Scheme offers a monthly concession (paid quarterly). | **Between $314.31 and $469.36 per year** |
| **Victoria** | Annual Electricity Concession | CPCC, HCC, DVA Gold Card | Discount of 17.5 per cent off household electricity bills all year round. From 1 July 2012 the concession will not apply to the first $171.60 if a concession card holder's annual electricity bill | **17.5 per cent discount per year** |

| Jurisdiction | Concession | Eligibility | Calculation | $ Concession |
|---|---|---|---|---|
| **Victoria** | Service to Property Charge Concession | CPCC, HCC, DVA Gold Card | The concession provides a reduction on the supply charge for concession households with low electricity consumption. | The concession is applied if the cost of electricity used is less than the supply (or service) charge. The charge is then reduced to the same price as the electricity usage cost. |
| **Victoria** | Non-mains Energy | CPCC, HCC, DVA Gold Card. Non-mains customers who use an alternatives fuel and/or are individually metered for electricity but who pay caravan park or accommodation proprietor. | The amount of the rebate depends on the annual amount of non-mains energy purchased and the rebate amount is increased annually in line with inflation. | **Range: $42 - $297** |
| **Victoria** | Medical Cooling Concession | CPCC, HCC, DVA Gold Card | Combined with Annual Electricity Concession, recipients receive 35 per cent discount off electricity bills effective 1 March 2011. | **17.5 per cent per year** |
| **Victoria** | Off-peak Concession | CPCC, HCC, DVA Gold Card | Off-peak concession provides a 13 per cent reduction on the off-peak tariff rates on all quarterly electricity bills. | **13 per cent per year** |
| **Victoria** | Electricity transfer fee waiver | CPCC, HCC, DVA Gold Card | Full waiver of the fee that is normally payable to the electricity retailers when there is a change of occupancy at a property. | **See calculation column** |
| **Victoria** | Life Support Machine Electricity Concession | CPCC, HCC, DVA Gold Card | No further information provided. | |
| **South Australia** | Energy Bill Concession | DVA Gold Card, HCC, Commonwealth Seniors Health Care Card, receive eligible | Concession deducted from electricity account or in some cases by cheque. | **$158 per year** |

| Jurisdiction | Concession | Eligibility | Calculation | $ Concession |
|---|---|---|---|---|
| | | Centrelink allowance. | A further 5% increase from 1 July 2012 will take the concession to $165 per year. | |
| **South Australia** | Medical Heating and Cooling Concession | Person cannot self-regulate body temperature | Introduced 1 January 2012. No further information provided. | |
| **New South Wales** | Low Income Household Rebate | CPCC, HCC, DVA Gold Card | $200 a year credited in quarterly amounts on electricity bills. Rebate will increase to $215 a year on 1 July 2012. | **$200 per year** |
| **New South Wales** | Medical Energy Rebate | Person cannot self-regulate body temperature and holds CPCC, DVA Gold Card, HCC. | $200 a year, credited in quarterly amounts on electricity bills. (The rebate will increase to $215 a year on 1 July 2012). | **$200 a year** |
| **New South Wales** | Life Support Rebate | People who use certain approved medical equipment at home that is necessary to sustain life. | $20 - $600 per year (depends on equipment and its usage), credited in quarterly amounts on electricity bills. | **$20 - $600 per year** |
| **New South Wales** | Energy Accounts Payment Assistance Scheme | Households struggling to pay their energy bills due to a crisis or emergency situation. | Scheme delivered through vouchers that provide part-payment of electricity and natural gas bills. Community Welfare Organisation assesses situation for eligibility for vouchers. | |
| **C/wealth** | Household Expenses Allowance | Commonwealth Seniors PCC | | **$214 per year** |
| **C/wealth** | Utilities Allowance | Recipients of the Age Pension | | **$105 per year** |

## D.3 Independent Pricing and Regulatory Tribunal - Analysis of consumer behaviour

The Independent Pricing and Regulatory Tribunal (IPART) have undertaken numerous consumer surveys, which also inform their retail electricity determination process.[27] More recently as part of the regulatory determination process for retail electricity prices IPART released "Changes in regulated electricity retail prices from 1 July 2012, Final Report" that included analysis of the impact of their decision on electricity consumers. The final and draft reports provide some useful insights into the consumer consumption patterns according to a range of factors including income levels and geographic location.

In terms of understanding how energy costs impact on consumers, the report indicates that across all income levels, the median household spending on energy costs will be around 4 per cent of disposable income. However, when the analysis is segmented across a number of income categories, the median household spending varies widely:[28]

- For the middle and higher income categories (more than $46,000 per year), median household spending on energy will range from about 2 to 4 per cent of disposable income.
- In the 2 low-income categories ($38,000 or less per year), median spending on energy will range from 5.5 to 8 per cent of disposable incomes.

The distributional analysis of median household spending on energy by income level shows that for the 10th percentile, energy costs account for approximately 4 per cent of disposable income. For the 90th percentile, energy costs account for approximately 14 per cent of disposable income.[29] This result is illustrated in Figure D.1 below.

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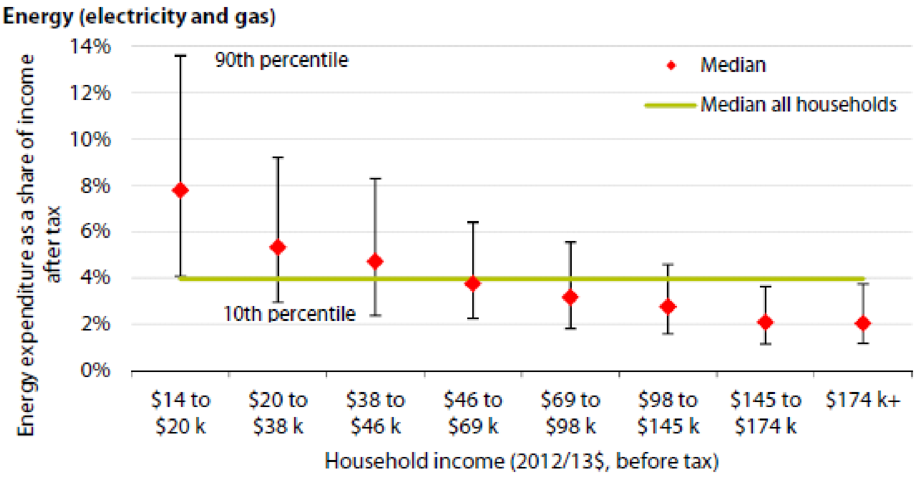
27 See IPART website for *Changes in regulated electricity retail prices from 1 July 2012, Electricity – Draft Report*, April 2012.

28 Ibid, p. 69. Also see *Residential energy use in Sydney, the Blue Mountains and Illawarra: Results from the 2010 household survey*, Electricity, Gas and Water – Research Report, December 2010.

29 IPART note that a percentile is the value below which a certain percentage of observations fall. For example, the 10th percentile is the value below which 10% of the observations may be found. In the above diagram, 10 per cent of customers in each income band would fall below the bottom of the vertical line (paying less than that amount) and 10 per cent of customers would pay more than the top of the vertical line.

**Figure D.1 Annual spending on energy as a share of disposable household income – Sydney and surrounding regions, 2012/13**[30]




**Note:** The income for the middle of each band is used to calculate disposable income. Disposable income as a share of household income is derived from ABS household income distribution data for 2009/10. Income for each band is inflated to 2010/11 using the change in average weekly earnings. Income forecasts for 2011/12 and 2012/13 use NSW Treasury's forecast increase in the average wage index of 3.5%. Disposable income in 2012/13 is further adjusted for the impact of the carbon compensation package. Distributions are presented without weighting survey responses. Customer bills are net of the Low Income Household Rebate. We have assumed that gas prices will increase by around 13% on 1 July 2012. This is based on an application from AGL to pass through the impact of the carbon price and likely increases in distribution prices. IPART is conducting a separate review of regulated gas prices.

Source: IPART, *Changes in regulated electricity retail prices from 1 July 2012*, Electricity – Final Report, July 2012, page 73.

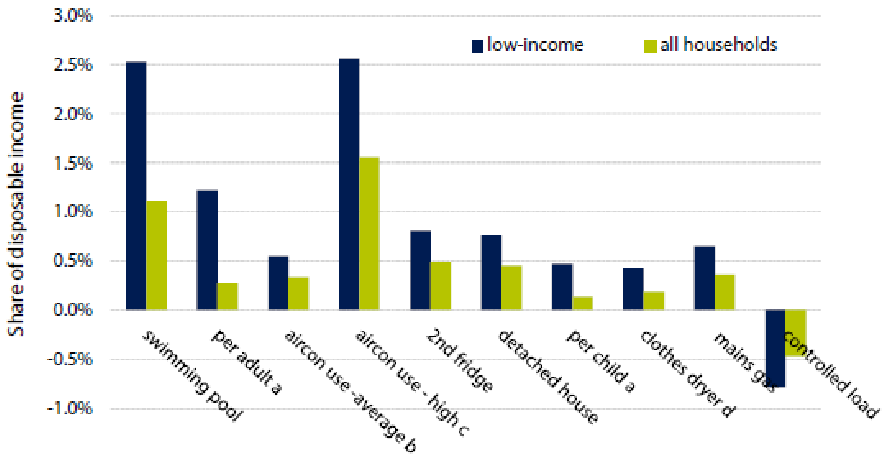
The report also looked into the drivers of variations in energy bills aside from differences in income. Looking at the factors that drive energy use for low income households, IPART found that the most important factor was the number of people in the household (particularly adults). These were followed by:

- having a swimming pool;
- how often the air conditioner is used;
- how often the clothes dryer is used; and
- having a second fridge;

IPART also note that the type and size of the dwelling have an important impact on how much energy a house uses, as illustrated in Figure D.2.

30 This report uses the results from the IPART Household Surveys 2008 and 2010. See the IPART website for these reports.

**Figure D.2 Proportion of disposable income that different energy uses 'cost'[31]**




[a] An adult means a person older than 15 years and a child means a person 15 years or younger. These variables capture uses for energy other than those already accounted for in the regression model, eg, TVs, computers, cooking.
[b] Average use means the equivalent of 3 days per week, 3.5 hours per day for 6 months of the year.
[c] High use means the equivalent of 7 days per week, 7 hours per day for 6 months of the year.
[d] For using a clothes dryer once per week.

Source: IPART, *Changes in regulated electricity retail prices from 1 July 2012*, Electricity – Final Report, July 2012.

For low income households, the study found that a high proportion is one person households or couple without children. In fact, these types of households account for almost 70 per cent of households in the lowest income quintile. In addition to this, around 88 per cent of the lowest income quintile households received a government pension or allowance.

## D.4 Case study – Fuel poverty and the United Kingdom experience

The United Kingdom has recently undertaken a review of its fuel poverty target and the indicators it uses to describe fuel poverty. The review also considered that, with the available resources, what are the most effective policies in in tackling the underlying drivers of fuel poverty. The final policy recommendations are outlined in "Getting the measure of fuel poverty: Final Report of the Fuel Poverty Review" by John Hills.[32]

A key recommendation stemming from the review was to amend the current definition of fuel poverty used in the United Kingdom. The official measurement of fuel poverty states that a household is fuel poor if it would need to spend more than 10 per cent of its income to achieve adequate energy services in the home (the definition is outlined in the UK Fuel Poverty Strategy 2001). The report found that the current official

31 The data source for this is the IPART Household Surveys 2010. See the IPART website for this report.

32 See United Kingdom Department of Energy and Climate Change, *Hills Fuel Poverty Review*, http://www.decc.gov.uk/en/content/cms/funding/Fuel_poverty/Hills_Review/Hills_Review.aspx

indicator, based on required energy spending exceeding a threshold of 10 per cent of income, has some strengths but also has serious weaknesses including its undue sensitivity to energy prices and the way it identifies which households are fuel poor.

The final report took into account the underlying factors that drive fuel poverty, notably changing income positions and rising fuel costs. The review recommended that households should be considered fuel poor if:

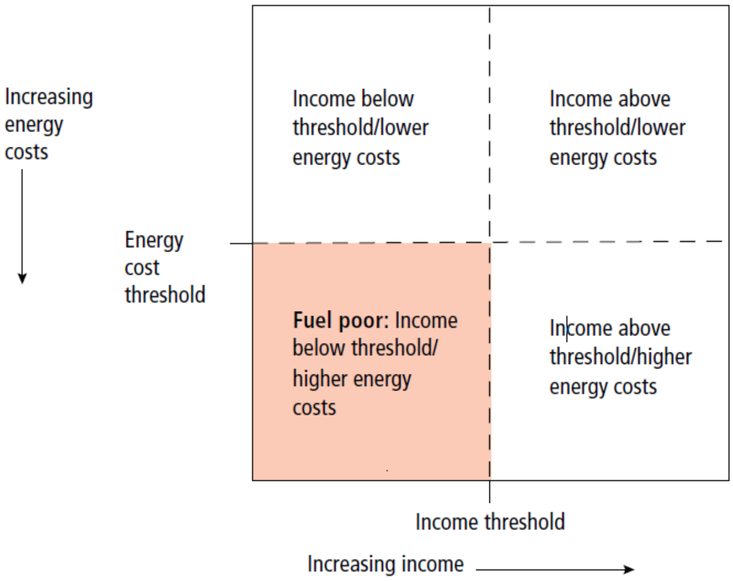
- they have required fuel costs that are above the 'contemporary' median level; and
- were they to spend that amount, they would be left with a residual income below the official poverty line.

The report also considered a range of different policy pathways for reducing fuel poverty. Each of the policy pathways relates to the typical drivers of fuel poverty: thermal (energy) efficiency; income and energy prices. The report further analysed the cost-effectiveness of the policy pathways aimed at addressing each of these drivers of fuel poverty and their effectiveness at reducing fuel poverty.

The effectiveness of each of these approaches is measured according to changes in the drivers of fuel poverty – changing income levels and rising fuel costs, as illustrated in Figure C.6. For example, households are defined as fuel poor where their household income is low and where their required energy spending in order to achieve an adequate standard of warmth is above a specified threshold. Fuel poverty is therefore represented by the shaded area in Figure D.3.

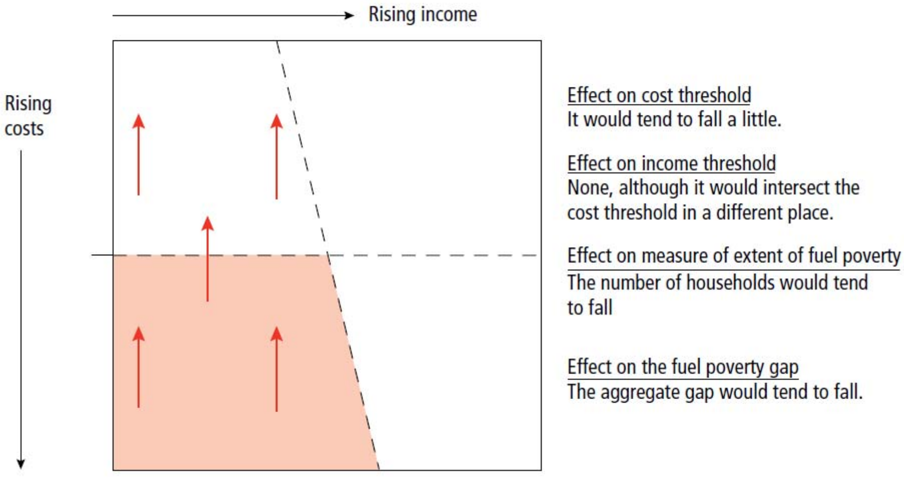
The aim of a cost effective and efficient policy is such that only the fuel poor are lifted from fuel poverty, and the policy pathway does not change the position of a broader subset of consumers.

**Figure D.3 Fuel poverty defined as the overlap between low income and high energy costs**



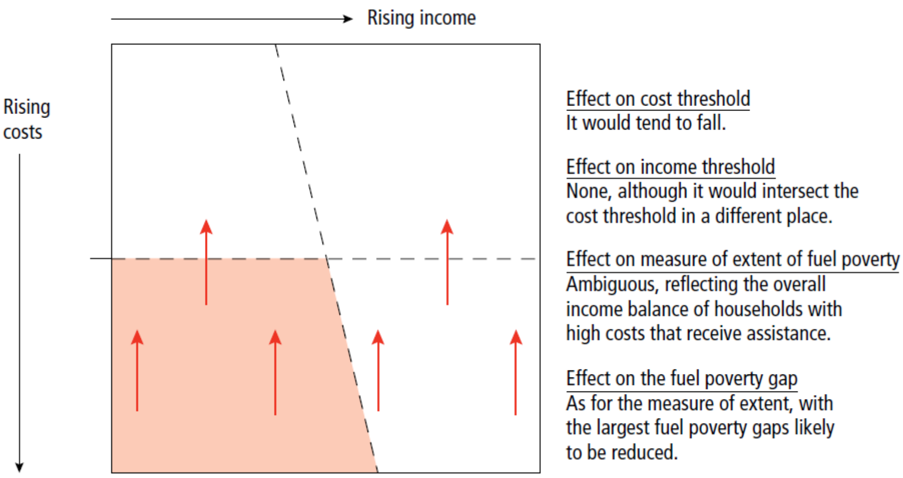

1. *Price- based measures.* Policies to reduce prices and/or bills for poorer households specifically would be expected to bring some of them out of fuel poverty, reducing both headcount and fuel poverty gap indicators. The overall effect of these types of policies is to lower energy bills and is income neutral.

**Figure D.4 Impact of bill rebate targeted at low income households**



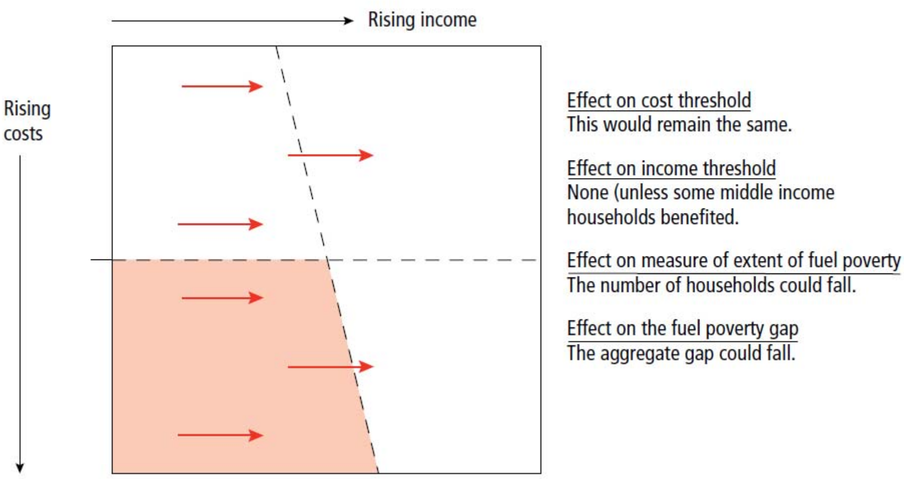

2. *Energy-efficiency measures.* These types of measure impact on energy costs. Sufficiently large improvements in energy efficiency could result in sustained longer term solutions. In this regard, energy efficiency programs need to the focussed on low income households otherwise fuel poverty rises if only taken up by high income households. The impact of these types of policy measures is to lower energy costs and remains income neutral.

**Figure D.5 Impact of an energy efficiency improvement policy targeted at low income households with low energy efficiency**




3. *Income-based measures.* These types of policy measures improve a household's position relative to median energy expenditure. Energy costs remain neutral as income increases.

**Figure D.6 Impact of an income improvement policy targeted at low income households**




The analysis concluded that of each of the policy measures improving the thermal efficiency of the housing stock was the most cost-effective. This type of policy measure delivers persistent benefits in reducing fuel poverty, reducing GHGs and has very substantial net societal benefits.

# E Flexible and efficient pricing: tariff structures

| **Tariff** | **Description** |
|---|---|
| *Time-of-use (TOU)* | A rate with different unit prices for usage during different times the day. In a basic TOU tariff the day is divided into peak and off peak (with a higher price during peak period). The tariff can be expanded to include shoulder periods between the off-peak and peak periods; and seasonal peaks (a higher price for summer and winter peak periods).<br><br>These tariffs tend to reflect only the average cost of generating and delivering electricity to consumers during those times of the day. |
| *Critical Peak Pricing (CPP)* | CPP is a real-time rate that is applied during periods when supply and demand conditions become very tight. Typically, such a rate gives consumers a predictable price (flat or TOU) during all but a limited number of hours per year, when (much higher) rates (the CPP) would be charged.<br><br>Generally, consumers are notified about a CPP event in advance through various communication media tools – telephone, e-mail, SMS and messages in home displays. Notification can be 2 hours to 24 hours before the CPP is called. In this way the consumer can choose to avoid the higher prices by reducing their consumption during those times. |
| *Variable Peak Price (VPP)* | A variation on CCP where the CCP is not a fixed price but the real time price applying during the critical peak period. |
| *Peak Time Rebates (PTR)* | Only relevant for networks. Least time varying option. Consumers generally receive an incentive payment in the form of a $ per Kwh rebate for reducing energy use during peak periods.<br><br>Typically, consumers are assured that their bill will not increase, and that there is no risk of incurring higher prices if they fail to reduce their use in response to a peak period dispatch event, hence can be more appealing to consumers for take up.<br><br>For PTR there is need to verify each consumer's load reduction by comparing their half hourly usage during a peak demand dispatch event to a 'baseline' usage profile. This option is therefore more complex to implement, and issues arise with respect to how to calculate the baseline. |
| *Capacity or demand based charge* | This charge applies to networks only. A capacity or demand charge means setting a price that reflects the peak demand or utilisation at a particular point in time.<br><br>There are different types of capacity charges in use that have different implications for metering. They can be based on a consumers own maximum demand (kw or kVa) recorded during the peak period over a working week day or on use by that consumer at times of system peaks:<br><br>• For example, the charge could be based on a kW/MW or KVA recorded during the peak period of 5 nominated working |

| Tariff | Description |
| --- | --- |
| | weekdays over the previous 12 months or in a particular month (consumer peak demand); or alternatively the average half-hourly max demand when system demand was highest between 11am and 7 pm during previous 12 months (system peak approach).<br><br>• A variation of the system peak approach option is for the charge to reflect the consumer’s use during the “expected” peak period (that is, known in advance). This charge would be more forward looking. |

# F Defining residential and small business consumers

## F.1 Energy consumption thresholds

The recommendations for meter installation and transitioning to time varying prices outlined in this draft report relate to residential and small business consumers. For the purpose of our analysis we have considered both the definition used under the NECF and also jurisdictional energy consumption thresholds that are used to define small consumers. These jurisdictional thresholds apply both to consumer protection measures and also derogation arrangements for type 5 and type 6 meters. These can differ within a jurisdiction.

We have outlined the current definitions/energy consumption thresholds in Table F.1 below.

**Table F.1 Energy consumption thresholds**

| Jurisdiction | Consumption threshold |
|---|---|
| NECF | A small consumer is defined as a residential consumer that uses electricity for the purpose of personal, household or domestic use, or a business consumer with an upper consumption threshold of 100MWh per annum. |
| Victoria | Domestic consumers are defined as those whose aggregate annual consumption is less than 20MWh. Small business consumers are those with less than 40MWh of electricity per year All Victorian consumers under 160MWh will have a smart meter installed by end 2013. |
| South Australia | Small consumers defined by an annual consumption threshold of 160MWh per annum. This applies to both consumer protections and metering. |
| Australian Capital Territory | Transitioned to NECF. Residential and small business consumers are defined as equal to or below 100 MWh. |
| Queensland | For both consumer protection and metering, the residential and small business threshold is defined as those where their annual consumption is, or will be, less than 100MWh per annum. |
| Tasmania | Transitioned to NECF. Interval meters are required for all large contestable customers, i.e. business customers consuming at least 150MWh per annum. |

# G Summary of submissions to draft report

## Table G.1 Summary of submissions to draft report

| Issue | Comment | Stakeholders |
|---|---|---|
| **CONSUMER AWARENESS, EDUCATION AND ENGAGEMENT** | | |
| **Improving consumer awareness and education** | | |
| | Consumer awareness campaigns are key to the successful implementation of DSP policies | Hydro, CALC, SP Ausnet |
| | Industry should do more to educate different groups of the community on reducing peak demand and impacts of moving to time of use pricing | Ethnic Communities Council NSW |
| | Providing consumers with timely access to electricity consumption information and in-home displays are part of the education process | Energetics |
| | Data needs to be supported by educational information | Jemena |
| | Need to consider how to communicate contestable framework to customers. There was an adverse reaction when the metering costs were unbundled on customers' bills in Victoria | United Energy |
| **CONSUMER INFORMATION - ACCESS TO ELECTRICITY CONSUMPTION DATA** | | |
| **Facilitating consumer access to electricity consumption information** | | |
| | Support consumer access to consumption data and minimum standards (note, this does not indicated agreement across stakeholders as to what the minimum standards should be) | Energetics, Essential Energy, United Energy, Energy Australia, CALC, AEMO, Jemena, Zen Power Systems, Metropolis, Hydro Tasmania, Energetics, Betterplace, SP Ausnet, AER, AGL, Energex, PIAC |

| **Issue** | **Comment** | **Stakeholders** |
|---|---|---|
| | Do not support third party access to consumption data | International Power, Metropolis |
| | Conditional support for explicit informed consent (subject to further detail) | Origin, Energy Australia |
| | Distributor is better source of data provision for residential customers | SA Power Networks, Essential Energy, DPI |
| | Consumption data should be available free of charge, or at minimal cost | Essential Energy, CEC, Greenbox, MEU |
| | Consumption data should only be charged for when there is value add, or above standard format or repeated request above minimum etc. | EnerNoc, AGL, Betterplace, Origin |
| | Provision of data should not be restricted to retailers | Energex |
| | Support explicit informed consent | Hydro |
| | Cost reflective fees for accessing and providing consumption data to consumers/third parties | ATA, AEMO |
| | Data requirements should recognise potential future shift towards capacity and demand tariffs; data should be given on kWh, kVA, KW and kVA to help build consumer understanding | Essential Energy |
| | There should be a limit on free requests per year, but unlimited requests for electronic information | Energy Australia |
| | Limited value in requiring retailers to provide NSLP to consumers that do not have interval meters | AER |
| | Support Commonwealth Government iHub concept | CALC |
| | Do not support Commonwealth Government iHub concept | Hydro |

| **Issue** | **Comment** | **Stakeholders** |
|---|---|---|
| **Role of parties to engage with consumers** | | |
| | General support to clarify the treatment of energy services or the role of parties in the provision of energy services as they relate to the NECF | AER, SA Power Networks, DMITRE, Origin, Powercor, Citipower, Jemena, Energy Australia, ActewAGL, CEC, CALC |
| | DSP energy management services should not be subject to NECF regulation; ACL adequate | Jemena, United Energy, ATA, Betterplace, |
| | DNSP contact with consumers limited to DSP purposes, or subject to certain conditions being met | MEU, ATA, AGL, Origin, Energy Australia |
| | DNSPs should be able to engage with consumers | Greenbox, Energex |
| | DNSPs should not be precluded from engaging directly with consumers on either targeted or broad based DSP initiatives unless there are very clear reasons | SA Power Networks |
| | Need to clarify how DNSPs can engage with customers to provide DSP services | Essential Energy, SP Ausnet, ENA |
| | NECF application to third party providers needed where services may be of potential detriment to consumer, or needs to be clarified | AER, Origin, AGL, |
| | DNSPs should not be limited from separately qualifying for and being accredited as a competitive third party 'DSP energy services' providers | SA Power Networks |
| | ACL is sufficient to cover third parties providing DSP services | Bigswitch, Greenbox |
| | Retail exemption guidelines cannot address the provision of energy services where a sale of energy is not occurring | AER |
| | Parties offering DSP services to consumers should obtain explicit informed consent, and comply with marketing obligations in the NECF and ACL | Jemena |

| Issue | Comment | Stakeholders |
|---|---|---|
| | Distributors should not have access to consumers | Metropolis |
| | ESCOs should be treated the same as retailers | Hydro |
| | Conditional support for NECF applying to third parties | Energy Australia |
| | Engagement of additional parties in load management activities has the potential to impact on network stability and reliability | ENA |
| | All parties offering DSP services to consumers should be subject to the same regulatory requirements as retailers | CEC |
| | DSP related services are contestable and should not be offered by distributors in competition with retailers and other service providers | Metropolis |
| | Market for energy management services should be free and open to new competition | United Energy |
| | No market issues regarding DNSP dealing with customers that would warrant further regulatory obligations | United Energy |
| | **ENABLING TECHNOLOGY - METERING** | |
| **Contestable framework** | | |
| | Support contestable roll out of meters | AEMO, Energy Australia, Big Switch, Energy Action, Macquarie CAF, Betterplace, Metropolis, AGL, Silver Springs, Origin, |
| | Competitive roll out would preclude certain cost-effective communication technologies, reduce economies of scale, and hamper realisation of efficiency benefits | SA Power Networks, Essential Energy, |
| | Do not support contestable roll out, or support DNSP roll out of meters | MEU, SA Power Networks, Essential Energy, ENA, CEC, |

| Issue | Comment | Stakeholders |
|---|---|---|
| | | Powercor, Citipower, |
| | Support DNSP roll out where it relates to DSP services or is ring-fenced | AER, AGL, Silver Springs |
| | Support mandated roll out of smart meters | Secure Energy |
| | Piecemeal roll out of smart meters may result in cost inefficiencies due to system incompatibilities, duplication in communication systems, multiple Meter Data Management systems | Powercor, Citipower |
| | Support contestable roll out but note loss of economies of scale | AER |
| | Individual consumers provided information on the effect of smart meter exposure on humans and the environment | Helen Weir |
| | Only way to minimise customer meter churn is to provide this service through a monopoly metering service provider or the DNSP | Essential Energy |
| | Does not oppose contestable roll out, but notes there may be additional material costs under a partial roll out | Jemena |
| | Robust consumer protections precede roll out of smart meters | ACOSS |
| | Concern that DNSPs will lose existing load control on their networks if metering services are contestable | ENA |
| | Key to successful roll out of metering is that consumers have confidence in technology | Hydro |
| | Specified functionality needs to be future proof, which may be more suited to a mandated roll out. For contestable roll out need to put deployment risks more on retailer/DNSP as an incentive to limit obsolescent technology | AEMO |
| | Need a single body to coordinate meter provision and data management functions | United Energy |

| **Issue** | **Comment** | **Stakeholders** |
|---|---|---|
| **Minimum functions** | | |
| | Minimum standards and structures for metering roll out are required in the rules (note, this does not indicate agreement across stakeholders on what the minimum functionalities should be) | AEMO, MEU, Energy Australia, AER, Origin, Secure Energy, GE Energy, AER, Macquarie CAF, Betterplace, Dr Martin Gill, DMITRE, CEC, Energy Australia, Secure Australia, AGL, United Energy |
| | Supports SMI Minimum Functionality Specification | GE Energy, ActewAGL, Jemena, SA Power Networks, United Energy, ENA, DMITRE, Silver Springs, ATA, DPI, Powercor, Citipower, Secure Energy |
| | Prefer to implement smart meters with maximum or enhanced functionality as a first step | TEC, GE Energy, Betterplace, Landis + Gyr |
| | Minimum specifications need to be forward looking and able to support new technologies such as smart appliances | GE Energy, |
| | AEMC should form a working group to define the details of the proposed Energy Management System | Landis + Gyr |
| | Proposed model should include deployment of modular meters to allow for installation, upgrade and replacement of meter communications without the need to replace the meter at every instance of change | Landis + Gyr |
| | Halt all further installation of accumulation only metered | Landis + Gyr |
| **Metering charges** | | |
| | Support separating metering charges from DUOS | Energy Australia, Big Switch, Energy Action, Jemena, Macquarie CAF, Betterplace, AEMO, AGL, |
| | Support separate line item for metering charges on retail bill | Betterplace, AEMO, Energy Australia |

| Issue | Comment | Stakeholders |
|---|---|---|
| | Metering charges already unbundled from DUOS for ACT | ActewAGL |
| | Unbundling metering charges creates extra costs | Energex |
| | Separation of provision of metering services from retail energy contracts will remove need for meter churn when customer changes retailer | Jemena |
| | Would like more information on the nature of costs and services to be unbundled from DUOS | AER |
| | Do not support separating metering costs from energy costs | Origin |
| **Legacy/exit provisions** | | |
| | Do not support proposed exit fee of 30 per cent in draft report | Jemena, SA Power Networks, Essential Energy, United Energy, ENA, Metropolis, Energex, |
| | Do not support exit fee for consumers upgrading meter | Betterplace, Metropolis, |
| | Exit fees are crucial so that DNSPs are fully recompensed for the fixed and variable costs they have and would incur for any metering installation that is no longer required. | Powercor, Citipower. |
| | Consider legacy provision for metering | AEMO |
| | Either apply accelerated depreciation or standard exit fee to determine the costs to a DNSP when an accumulation meter is upgraded | AER |
| | Support exit fee of 30 per cent proposed in draft report | Origin |
| **Installation** | | |
| | Supports mandatory installation of meters in specific circumstances, or are already | AER, Energetics, Betterplace, Greenbox, Landis + Gyr, |

| Issue | Comment | Stakeholders |
|---|---|---|
| | required to undertake similar measure at jurisdictional level | Metropolis, Energy Australia, |
| | Do not support mandatory installation of meters in specific circumstances | Macquarie CAF |
| | Do not support consumers above specified threshold receiving smart meter; should continue to be determined at jurisdictional level | ActewAGL |
| **Government mandate** | | |
| | Support maintaining provision in NEL to allow government mandated roll out | Secure Energy, Jemena, Essential Energy, United Energy, ENA, Silver Springs |
| | Supports removing government mandate | Origin, Metropolis, AGL, |
| | Any changes to NEL regarding jurisdictional mandated roll out should be supported by a full Regulatory Impact Assessment to ensure consistency with the NEO | Powercor, Citipower |
| | Future government mandated roll out must provide fair compensation | Betterplace |
| **DSP IN WHOLESALE ELECTRICITY AND ANCILLARY SERVICES MARKETS** | | |
| **Demand response mechanism** | | |
| | Generally support proposed demand response mechanism | Powercor, Citipower, SP Ausnet, Greenbox, MEU, EnerNoc, AER, TEC, Murdoch University, Zen Power Systems, DMITRE, ATA, EUAA, Energetics, Energex, |
| | Do not support demand response mechanism | Energy Australia, ERM, NGF, Private Generators, ERAA, Simply Energy, ESAA, Origin, |
| | Conditional support subject to further detailed examination of issues | DPI, AGL, |
| | Proposed mechanism impacts on hedging arrangements and changes nature of risk | ERM, Origin, International Power, Energy Australia |

| **Issue** | **Comment** | **Stakeholders** |
|---|---|---|
| | changes for generators/retailers | |
| | Proposed model will exert upward pressure on spot prices/increase costs | ERM, Energy Australia, International Power |
| | No market failure, and C&I sector is already highly competitive | Energy Australia, Origin, International Power |
| | Distorts price signals in an energy only market | Origin, International Power, Energy Australia, |
| | Distributors should not be precluded from participation | SA Power Networks |
| | Need clarification on prudential requirements, financial licences, contractual arrangements between the retailer and the consumer, if the demand provider goes broke, and bill settlement | United Energy |
| | Retailers hedging strategies will need to change but they have similar experience with network focussed demand management programs already | EnerNOC |
| | May need dispute resolution | MEU |
| | DR mechanism and multiple FRMPs will introduce complexity into the market | Energy Australia |
| | Reason for low levels of participation is that C&I users do not want to participate | ERM |
| | Retailers will not have visibility on how consumers will shift load | Origin |
| | AEMC approach to baselines different from the US models as retailers are exposed to baseline consumption levels, unlike the US where retailers are paid on actual demand. This will lead retailers to closely monitor consumption baselines to manage the risk. | AER |
| | Proposed mechanism will favour the emergence of more network support and interruptible supply contracts between consumers and network service providers | Energetics |
| | Baselines should be deterministic with default baseline and AEMO agreeing to site specific | EnerNOC |

| Issue | Comment | Stakeholders |
|---|---|---|
| | changes | |
| | Parent-child metering arrangements provide foundation for settlements under demand response mechanism | EnerNOC |
| | Demand response mechanism should have notification requirements | EnerNOC |
| | Consumption baseline should include distribution loss factors | EnerNOC |
| | Aggregation should happen up to a regional level, similar to ancillary services. Rule 3.8.3 might be appropriate for aggregation up to TNI level/NEM regional level | EnerNOC |
| | Concern regarding network security impacts if there is a reasonable level of demand response | United Energy |
| | Aggregators/third parties should be required to hold AFSL and meet prudential requirements | Hydro |
| **Demand forecasting** | | |
| | Support improvements to AEMO's demand forecasting role | Energy Australia, AER, |
| | AEMO should have greater regard for the impact of energy efficiency initiatives in developing demand forecasts, however this does not require a change to its current powers | Citipower, Powercor |
| | Greater information gathering powers may require AEMO to access commercial supply information; appropriate arrangements governing access and transfer will need to be considered. | AER |
| | Concern that AEMO becomes a central planner; risk of over-forecasting DSP leads to lower network investment | United Energy |

| **Issue** | **Comment** | **Stakeholders** |
|---|---|---|
| | Improvements to AEMO's demand forecasting role supported but note that DNSPs generally invest at a localised level to will be of limited value to DNSPs | Energex |
| **New category of market participant** | | |
| | Support new category of market participant | CEC, Betterplace, DPI, TEC |
| | Supports separating DSP actions from the sale and supply of electricity | Zen Power Systems, Betterplace |
| | Aggregators, third parties should be required to hold AFSL and prudential | Hydro Tasmania, International Power |
| | Do not support new category of market participant | Energy Australia, SP Ausnet |
| | Support separating DSP actions from the sale and supply of electricity | Zen Power Systems |
| | Will require extensive further definition of protocols and interactions as well as clear definition of the framework for the new market participant | Energex |
| | **EFFICIENT AND FLEXIBLE PRICING** | |
| **Vulnerable consumers** | | |
| | Support recommendations in relation to vulnerable consumers | SACOSS, DMITRE, CEC, Energy Australia, AER, CALC, TEC, Energetics, SA Power Networks, Essential Energy, United Energy, SP Ausnet, DMITRE, Zen Power Systems, Energetics |
| | Support review of state government concession schemes and assistance programs | EWON, AER, Origin, SACOSS, TEC, United Energy, PIAC |
| | Productivity Commission should conduct review of energy concession schemes | PIAC |

| Issue | Comment | Stakeholders |
|---|---|---|
| | Considers there is potential to develop additional indicators under the NECF to understand the impacts of TOU pricing on hardship consumers, and how retailers are assisting such consumers | AER |
| | Agree that collaboration is needed between industry and government to support vulnerable consumers | Energy Australia |
| | Some small consumers and vulnerable consumers would see a significant value on cost reflective pricing where their profile is relatively flat. There might be value in transitioning these consumers onto such tariffs more quickly | AER |
| | Supports allowing vulnerable consumers to retain access to flat tariffs; but need to consider whether these flat tariffs are set at efficient levels especially in jurisdictions where prices are deregulated | PIAC |
| **Gradual phased approach** | | |
| | General support approach for introducing cost reflective tariffs in a gradual and phased approach | CEC, Energy Australia, EWO (Vic & NSW), Energy Action, CALC, AER, SACOSS, CALC, TEC, ACOSS, Jemena, Zen Power Systems, Greenbox, Essential Energy, |
| | Concern or acknowledgement needed regarding interaction with Victorian flexible tariff initiative | Powercor, Citipower, Landis + Gyr, |
| | Supports cost reflective prices to help support impact of EVs on the grid | DMITRE |
| | Policy leadership and regulatory reform is needed to remove barriers to efficient network and retail pricing | Energy Australia |
| | Transitional arrangements are needed for both market retail contracts and regulated retail contracts | Etrog Consulting |

| Issue | Comment | Stakeholders |
|---|---|---|
| | Default should be time varying network tariff for all consumers | Private residential customer |
| | Flat tariffs represent a cross subsidy | Energy Australia |
| | Do not support cost reflective pricing to extend to geographical constraints | TEC |
| | Support time varying tariffs that are capacity demand based | SA Power Networks |
| | Retailer should be obliged to offer a network tariffs as a direct pass through | Essential Energy |
| | Question merit of focussing on time varying network tariffs only | ENA |
| | Prefer network capacity charging | International Power |
| | Prefer Victorian approach to phasing in cost reflective tariffs | Silver Springs |
| | Do not support temporary bill protection measures as it is a form of retail price regulation, is complex and costly as it requires billing system re-configuration. | Origin |
| **Opt-in/opt-out** | | |
| | Once customers have transitioned to cost reflective pricing they should not be able to revert back to their flat network legacy tariff, albeit a new flat retail tariff will be available | Powercor, Citipower |
| | Clarity is needed on what happens to 'opt-out' customers | DPI |
| | Across the board opt-out approach might be more efficient whilst still offering sufficient protections | SA Power Networks |
| | Alternatively, rationalise to two bands with no opportunity to opt-out for highest consumption band | SA Power Networks |

| Issue | Comment | Stakeholders |
| --- | --- | --- |
| | Opt-in for lower consumption bands | Origin |
| | Prefer opt-out option for all medium and small electricity consumers | Energetics |
| | All consumers should opt-in to time varying tariffs | DPI |
| | All residential consumers should be opt-in | CALC |
| | Bands 2 & 3 should be mandatory time varying pricing | MEU |
| | Does not support creation of multiple bands for the introductions of variable pricing | Energex |
| **Consumption bands** | | |
| | Rationalise consumption bands into two (various views on opt in/opt out) | Origin, TEC, Jemena, SA Power Networks, ENA, ATA |
| | Supports three consumption bands | SACOSS, Zen Power Systems |
| | No consumption bands with provision to opt out | TEC, Powercor, Citipower, SA Power Networks |
| | Consumption thresholds should be nationally consistent | Energy Australia |
| | Consumption thresholds should capture peakier customers, EVs etc. | AER |
| | Preference is to remove band 3 | Jemena |
| | Consumption band level set to 30MWh to 40MWh | Origin |
| | Consumption bands determined by jurisdictions | SACOSS |
| | Bands 2 and 3 should be mandatory as this is where behavioural change can happen | MEU |

| **Issue** | **Comment** | **Stakeholders** |
| --- | --- | --- |
| | Do not support consumption band approach as time varying pricing already exists in the ACT | ActewAGL |
| | NMI classification and MSATS useful guide for setting consumption bands | Jemena |
| | Appropriate measure for consumption band would be by peak demand and not energy. Also suggest splitting consumers equally (33 per cent) across three bands | SA Power Networks |
| | Consumption bands determined by DNSP network area | Essential Energy |
| | Consumption band interaction with meter roll out will result in different arrangements for customers | United Energy |
| | Management of movement between bands should be flexible beyond the introduction/transition period | United Energy |
| | Process for determining consumption bands consistent with other regulatory processes | AER |
| | **NETWORK INCENTIVES** | |
| **Distribution pricing principles** | | |
| | Supports review of distribution pricing | AER, Origin, ERM, EnerNoc, Zen Power Systems, ERM, City of Sydney |
| | Do not support reviewing pricing principles to be more prescriptive as it would stifle innovation and flexibility | Powercor, Citipower, ActewAGL, Jemena, SA Power Networks, United Energy, ENA, SP Ausnet, Essential Energy |
| | Network tariffs should be unbundled from the retailers' tariffs and displayed on consumers' energy bills, issued by retailers. | Powercor, Citipower, Murdoch University |

| Issue | Comment | Stakeholders |
|---|---|---|
| | DNSPs should have flexibility to develop their own "time varying network tariff" structure, having regard for their specific load profile and customer base. Should not be prescribed in the rules. | Powercor, Citipower |
| | Regulatory reform is needed to remove barriers to efficient network and retail pricing | Energy Australia |
| | Want more transparency of how DNSPs pass through transmission charges | Grid Australia |
| | The only 'time varying' network tariff that could possibly reflect the marginal cost of network augmentation is one that is based on system-peak power demand. Network tariffs should be priced entirely in c/kW. | Murdoch University |
| | The absence of an appropriate price signal for annual system peak demand results in excessive system costs which translates into unnecessarily high electricity prices | Murdoch University |
| | Support reviewing network pricing side constraints | ActewAGL |
| | Distributed generation pricing should be based on consumption at peak demand | MEU |
| | Pricing based on individual annual peak demand rather than customer contribution to annual system peak demand is not efficient. | Murdoch University |
| | Coincident demand is important | MEU |
| **Consultation** | | |
| | Support consumer groups and retailer participation in review of distribution price setting process | TEC, AER, SACOSS, ACOSS, SP Ausnet, Energy Australia, Zen Power Systems, Greenbox, MEU, |
| | Practical difficulties with greater participation in review of distribution price setting process | ActewAGL, Jemena, United Energy |
| | Already engages actively with consumers through stakeholder consultative committee, which meets quarterly to discuss tariff structures, other pricing arrangements and network | Jemena |

| Issue | Comment | Stakeholders |
|---|---|---|
| | issues | |
| | Supports need to improve consultation processes but suggests an alternative approach is for consultation and approval of a tariff strategy as part of the distribution determination process | AER |
| **Targets** | | |
| | Need a combination of targets and incentives otherwise DNSPs will not do DSP | EnerNoc, TEC, ATA |
| | Do not support peak demand targets | ActewAGL |
| **DMIS/DMIA** | | |
| | Supports reforms to DMIS | EnerNoc, AER, ActewAGL, Jemena, SA Power Networks, Essential Energy, ENA |
| | Separate innovation allowance for reformed DMIS | EnerNoc, Essential Energy |
| | Support high level guidelines in rules to guide AER development of innovation incentive scheme | Powercor, Citipower |
| | Supports amending DMIS to provide DNSPs with additional funding for experimental/trial DSP projects | City of Sydney |
| | Innovation funding should be limited in size | Origin |
| | Forgone revenue component of the DMIS should apply to tariff based projects | SA Power Networks |
| | Innovation projects should be funded through government programs | United Energy |
| | Supports recommendation for the AER to consider expanding current application of forgone revenue component of the DMIS | Jemena |

| **Issue** | **Comment** | **Stakeholders** |
|---|---|---|
| | Business and usual and exceptional performance need to be well defined; meeting exceptional performance hurdle may inhibit development of DSP schemes due to the risks of recovering costs | United Energy |
| | Additional principles for reformed DMIS include: proportional, consider lost consumer benefit, propose new project any time, should also include broader based networks peak reduction schemes | EnerNOC |
| | Do not need to apply DMIS to transmission businesses | United Energy |
| | Exemptions from the reliability service standards should not be limited to DSP pilots and trials | SP Ausnet |
| | Supports temporary exemptions from the STIPS for DSP pilot and trials | AER, Origin, ERM, EnerNoc |
| | Supports AER granting temporary exemptions from STPIS and DSP pilots and trials | City of Sydney, Energex |
| | Increasing incentives for trialling and adopting DSP options, through a targeted innovation allowance | SP Ausnet |
| | DMIS should be amended to ensure that where DSP projects deliver sufficient wider market benefits that they be allowed to earn a share of those additional benefits | AER |
| | Questions the need to separate the innovation allowance as the reformed DMIS will provide the right incentives for DNSPs to do DSP and information on the potential of DSP will be improved under the new distribution planning framework | AER |
| | Principles should provide discretion for the AER to adapt the DMIS over time. Advises against a prescriptive and administratively complex, and data intensive approach to monitoring the DNSPs application of the reformed DMIS | AER |
| **Other** | | |

| Issue | Comment | Stakeholders |
|---|---|---|
| | DNSP DSP programs should be open and transparent, no competition for contestable services, open participation to all | ERM |
| | Competitive neutrality and ring fencing if DNSP DSP is competing with unregulated options | Energy Australia |
| | Few DSP services in Victoria are funded through deferred network augmentation because of probabilistic planning criteria | SP Ausnet |
| **Capex/opex balance** | | |
| | Supports price caps not network caps for distribution pricing | Origin |
| | Supports increased certainty for DNSP expenditure on DSP | Energex |
| | Regulatory framework favours capex over opex, need to separate revenue from volume | MEU |
| | Bias for capex will lead to bias against DSP | EnerNOC |
| | Supports decoupling volume from revenue; support revenue caps approach | TEC |
| | Enable DSP and network capex to be treated equally and rolled into the RAB | SP Ausnet |
| | Ensure appropriate ring-fencing if network DSP is competing with unregulated options | Energy Australia |
| | Supports general move toward revenue cap style form of economic regulation | City of Sydney |
| | Supports providing DNSPs with increased certainty regarding how DSP will be treated in future resets (opex issue) | City of Sydney |
| | Support the view that changing the form of regulation from price cap to revenue cap is not the appropriate answer | United Energy |

| Issue | Comment | Stakeholders |
|---|---|---|
| **DISTRIBUTED GENERATION** | | |
| | Support fee for service to connect distributed generation | Powercor, Citipower |
| | Separate distributed generation incentive scheme for DNSPs | Powercor, Citipower |
| | Net metering approach with export tariffs reflecting time of day costs | APVA |
| | Support establishing distributed generation energy market | APVA |
| | May need dispute resolution for distributed generation and end-users | MEU |
| | DUOS charges reduced for small scale PV electricity that is exported to the grid | APVA |
| | Consumers should be able to sell the output from their distributed generation to parties other than retailers | CEC |
| | The AER will consider the appropriate arrangements for how and when a DNSP can directly engage with a consumer and the ability of DNSPs to own and use distributed generation as part of its development of a national ring fencing guidelines for DNSPs in the NEM (a position paper was published in September 2012) | AER |
| | Supports distributed generation owners being able to sell power to parties other than their retailers | City of Sydney |
| | DNSPs should be able to own and operate distributed generation where it is needed to provide network support and ensure that it could not be provided by another party contracted to the DNSP | City of Sydney |
| **OTHER** | | |
| | Support four minor rule changes recommended in draft report | Powercor, Citipower, SA Power Networks, |

| Issue | Comment | Stakeholders |
| --- | --- | --- |
| | Standardised method for valuing costs and benefits of DSP | City of Sydney |
| | Supports use of time varying tariffs to encourage owners of distributed generation to maximise export during peak times | Energex |
| | **ENERGY EFFICIENCY MEASURES AND POLICIES** | |
| | Support NESI | TEC, CEC |
| | NESI needs to consider localised and time specific nature of peak demand, coincidence of energy conservation, distributed generation measures, and DNSP area peak demand | Energetics |
| | EE measures should capture the value of avoided or displaced electricity for peak demand through use of waste from cogen and trigen | City of Sydney |
| | Do not support EE targets | Hydro |
| | EE programs targeting peak demand reduction need to consider the localised and time specific nature of peak demand, coincidence of energy conservation and distributed generation measures with system peak demand | Energetics |
| | EE schemes should be harmonised | Hydro |
| | EE and DSP initiatives should be harmonised | Greenbox |