

# Smart Meters Regulatory Review – Capacity Control and Verifying Bills

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## 1 Introduction

United Energy Distribution (UED) appreciates the opportunity to respond to the ESC consultation, Smart Meters Regulatory Review – Capacity Control and Verifying Bills. Since the commencement of the initial ESC consultation on smart metering there has been a significant level of change in the industry with not only the deployment of remotely read smart meters but a change in Government and Energy Minister. In light of these changes, it may be useful to reassess the direction and priorities before the ESC undertake further consultation.

Although UED has responded to the supply capacity control and load control questions in sections 3 and 4, our comments should be considered preliminary. UED is well progressed in terms of the smart meter rollout and reading meters remotely on a daily basis. UED recognise that our thinking and market/product maturity will influence the adoption of these new meter features.

UED prefer a model where customers are engaged and empowered through the use of increased information and messaging using smart meters or other technology eg customer HAN to manage their consumption. The ESC consultation paper and line of questioning appears to be moving towards regulation at a detailed parameter level which may serve to stifle innovation and product development in a market that is not yet mature.

## 2 Current Situation

The Victorian Industry Steering Committee (ISC) is coordinating issues in relation to the roll out of smart meters. The deployment of more complex functionality at this time we understand is not considered within scope of the Victorian ISC.

The Victorian ISC and the Victorian Government are relying on the National Smart Meter Program (NSMP) coordinated by the Ministerial Council of Energy(MCE) to develop the nationally consistent framework for smart metering. A significant amount of work is being undertaken in this area and processes such as supply capacity control and load control may be defined and agreed this year. Public consultation on any rule or procedure changes would occur from 2012 onwards. These rule changes could include responsibilities or limitations in the use of the function (for example in the National Electricity Rules or B2B procedures) and additional customer protections or contractual requirements (for example in the National Energy Customer Framework(NECF)).

The issues surrounding implementation of these new meter functions will be considered in the NSMP business process working group. These issues will be debated thoroughly with distributors, retailers and consumer representatives, UED query the value of running a Victorian process where many of the same issues will be re-litigated.

We note the new Minister's position to review the benefits regarding the rollout and suggest that the Minister's position may not be known for some 6, possibly 12 months. The ESC

have stated their intent to make a Final Decision on these supply/load functions in May 2011 and assume there may be additional regulatory obligations in July-August 2011. UED recommend that any ESC decision in this area is consistent with the Minister's direction. It would be wasteful to push ahead with the development of these processes and possible regulations if this were not a high priority of the Minister's.

Subject to the Minister's direction and timing, it would be prudent use of resources and funds if industry waited and adopted the national processes. Trying to implement Victorian processes and at some stage later adopt national processes would create rework and additional cost which is ultimately born by customers.

We have seen in recent MCE releases responding to Smart Meter Customer Protection and Safety Reviews that the MCE does not always adopt the same arrangements as those required by the ESC. Ultimately these inconsistencies may result in rework in industry when we move to the NECF. UED urge the ESC to consider the timing and appropriateness of new regulations in this area at this point in time.

Although UED has responded to the supply capacity control and load control questions, our comments should be considered preliminary. Industry has yet to discuss the capabilities of the various technologies that have been deployed in Victoria and how these products can be used. Until industry thinking and development of efficient processes has progressed, it seems inappropriate that regulations may be established without consideration of the processes and the customer protections that would be best aligned to the processes that may be deployed.

Industry needs to allow time for the market to mature. Like the introduction to full retail competition it takes time to develop systems and processes, and products. It would be prudent to let the market develop the technology and product offerings to meet the markets needs. Retailers and distributors should be allowed to develop products without the need for regulators to codify parameters and limit innovation. Customers may choose to take up these products based on their value assessment.

Given the maturity of the market in relation to these smart metering services, UED recommend that the ESC not progress the consultation in relation to supply capacity control and load control. Further consultation should be limited to the two metering reading issues until the Minister's smart metering priorities are clarified.

### 3 Supply Capacity Control

The ESC is now reviewing the use of supply capacity control functionality by energy businesses for purposes other than credit management. The recent ESC smart metering decision has prohibited the use of supply capacity control for credit management purposes until 31 December 2013.<sup>1</sup>

Whilst the Paper discusses a number of uses for supply capacity control it does not encourage the discussion to assess the differences in use and possible regulations that might be required.

The supply capacity control could be used for any of the following:

- Distributor use to in emergencies to help ration power and avoid power outages; or
- Retailer product offering of capacity limited tariffs to ration power and avoid disconnection; or
- Distributor or retailer product offering ie nominating a chosen amount of electricity as an upper consumption threshold in return for some inducement; or
- Network management of a connection in line with network asset capability/ratings.

These uses fall into three general categories – emergency use, connection use and customer contract. These three general categories will be discussed in response to the ESC questions.

#### Issues for comment

The Commission seeks stakeholder comments on:

- how will cutoff limits be set and agreed?
- for how long should supply be cut off before restoring?
- Once restored, should the power remain on for a guaranteed period before being subject to cutting off again?
- Should there be limits for cutoffs in terms of how frequently and how many times in total?
- possible health and safety risks to consumers
- safeguards for customers on life support
- any potential for customers to manually override an automatic cutoff under supply capacity control
- how to ensure that supply capacity control is used only for purposes other than credit management
- ensuring that offers of supply capacity control include making customers adequately aware of the disadvantage they will experience by using this product
- what should be done if a customer agrees to have supply capacity control and subsequently suffers financial difficulty?
- for how long should arrangements about supply capacity control run? (e.g. for one year? For the life of the contract?)
- the customer's ability to cancel a supply capacity control arrangement
- could supply capacity control arrangements be part of a standing offer?
- privacy considerations.

### 3.1 Setting Cut Off Limits

#### 3.1.1 Emergency Use

If the supply capacity control functionality is used in an emergency, the intent is to keep the maximum number of customers on supply with minimum consumption as opposed to less discretionary load shedding at network feeder level.

Under this scenario, life support customers and sensitive loads/public services (hospitals, police, ambulance, fire brigade etc) might be excluded, however all other customers could be on a set supply capacity limit. The supply capacity limit would be set at a low level. It is possible to have one limit for all customers or one limit for single phase vs three phase customers or even to set the limit for individual meters.

The limit should not be set on the run. It may be preferable that the limit is not regulated but rather is able to be altered as the industry gains experience through its use.

The setting of the limit and the use of the functionality for this purpose should be agreed through the emergency management groups which include the distributors, AEMO and Government. Safety and ongoing supply reliability are top priorities in an emergency, emergency management use of supply capacity control should remain flexible and not be regulated.

The emergency management groups are well placed to consider the use of supply capacity control for emergency management use vs selective customer de-energisation vs mass media communication for customers to voluntarily curtail load. Customer voluntary load reductions is preferred over the first two options where customers have no choice with any form of involuntary curtailment.

#### 3.1.2 Connection Rating Use

Under this scenario the supply capacity control functionality could be used to manage the consumption at a premise below an upper limit to ensure that network assets are managed within design limits.

Single phase meters are pattern approved under the National Measurement Act to operate up to certain current limits. Where a premise operates above these limits, the meter is no longer designed to operate to the same accuracy levels. (there is no difference between smart meters or basic accumulation meters in this respect) If a premise operates in a continued manner above this current then three phase metering is required.

Under this arrangement, the limit would be set by the distributor to ensure that network assets are managed appropriately. No regulation is required as the limit is set based on the assets employed.

### 3.1.3 Customer Contract Use

Under this scenario the distributor or retailer would provide an offer to customers for a certain capacity limit and the customer may choose to accept the offering. There is no obligation on the customer to accept a contract if they consider the capacity limit is too low or if the inducement is not a sufficient return.

Customers will need to be informed of the implications, however given every customers set of electrical appliances and usage is different, customers will ultimately need to make the assessment themselves. It is important that access to web portals or real time metering information is available so that customers can make an assessment of their mix of appliances they could operate if the supply capacity limit were set at certain thresholds.

### 3.2 Length of time supply is cut off before restoration/ Length of time power remains on to assess whether supply limited exceeded

UED recommend that the length of time the supply is cut off should be set to a consistent industry agreed number for all uses of the supply capacity function. This allows consistency/simplicity across all contracts or use in an emergency. The consistent approach enables easier customer and call centre education and a simple consistent message for mass media communications in an emergency.

UED consider there is benefit in keeping the message simple and consistent at least initially. If desirable more complexity or diversity could be deployed once customers are well educated and comfortable with the use of the functionality.

Where a customer's consumption exceeds the supply capacity limit, the electricity supply would be cut off for a set time. After the set time has expired, the electricity supply would be reconnected, however if the supply capacity limit is exceeded within a measurement period, the supply would again be disconnected.

The time that the supply is disconnected needs to be long enough for a customer to be able to understand what has occurred and turn off certain appliances so that when supply is reconnected, the supply capacity limit is not exceeded. Probably 10-30 minutes may be a reasonable timeframe to allow customers to turn off appliances and standby powered appliances. If the timeframe is shorter, say 1 minute, this allows little time for customers to restrict their consumption to the agreed limits.

The length of time supply remains on will vary. Customers consuming at a faster rate will reach the supply capacity limit earlier than a customer consuming at a slower rate. If the customer consumes at an average rate below the supply capacity limit during the measurement period, then supply is not disconnected. The length of time supply remains on is not a settable parameter, this will vary by customer.

The key settable parameters in this respect are the supply capacity limit, the measurement period and the time supply would remain off where the supply capacity limit has been exceeded.

### 3.3 Should there be limits of how frequently or how many times in total a supply capacity function should be used?

If the number of times in total that the supply capacity function can be used is too limited then the benefits of reduced or curbed demand to the retailer or distributor are also of limited value, particularly in an emergency situation.

The AMI meter that UED has installed to date does have a default lockout behaviour for Supply Capacity Control cycling. If the meter cycles 10 times within a given calendar day it will automatically lockout to the armed state. Where a meter is in the armed state, the customer will need to push the button on the meter to force the electricity supply back on. This function is used to protect the life of the switch in the meter. The 10 cycle parameter is a fixed number in the meter firmware and a change would need to be engineered by our meter vendor.

### 3.4 Possible health and safety risks

It is important that the setting of the supply capacity limit is appropriate and allows fridges/freezers, lighting and phones to continue operating normally. No customer contract (discretionary market contract) should ever be established under this emergency supply capacity limit as it is likely to be low.

Customers need to be well informed about the terms and conditions of the supply capacity control in any contract and if they have reservations should not sign up to these contracts.

UED has reservations about the use of supply capacity control for emergency management where customers are not well informed by Government smart metering education programs.

UED suggest that industry trials are undertaken before there is a requirement to use supply capacity control so that all stakeholders have a better understanding of how the functionality should be implemented and its impacts.

Media campaigns that allow customers to voluntary curtail their load provides choice to customers. It allows customers who are able to manage their load to do so and customers who are not well placed to reduce load, for example elderly or sick who need air conditioning, to reduce their load in a more limited manner.

### 3.5 Safeguards for customers on life support

The use of supply capacity functionality in an emergency avoids the requirement to indiscriminately shed load to manage the supply and demand balance across Victoria. It will allow all customers to be on supply at specified supply capacity levels. It is possible for customers on life support to have a higher supply capacity limit if required, or to block the activation of this function.

UED cannot stress the importance of accurate life support status being advised to the customer's retailer and distributor. These records are reliant on customers providing



accurate information that life support is required at a premise and when it is no longer required at a premise.

### 3.6 Potential for customers to manually override an automatic cut-off

The meter has no ability for a customer to override the automatic cut-off. If the inconvenience of having reduced or limited supply were avoided by a manual override this would defeat the purpose of having supply capacity control ie that the customer needs to reduce their load below the agreed/specified amount.

### 3.7 How to ensure that supply capacity control is only used for purposes other than credit support?

Where a distributor facilitates access to a smart meter function for a retailer, the distributor will not know whether the customer is a hardship customer or having difficulties paying their retail bills.

The distributor will not know whether the customer has signed a supply capacity control contract with the retailer or whether a new customer has recently moved into the premise and not agreed to a supply capacity control contract. The functionality could still remain active in the meter (in accordance with the old customers contract) and the retailer has not advised to turn the functionality off.

There are a number of ways this could be managed in industry processes, however these issues have not been discussed and resolved at this point in time.

### 3.8 Supply capacity control contract arrangements

Where a customer experiences financial difficulties and the customer has previously agreed to a supply capacity control contract, this is a matter for the retailer and the customer to establish whether the customer wishes to remain on the contract or not.

Contract duration should be clearly specified in any contract, there should be no requirement to regulate whether the contract is 1, 2 or 3 years. The term of the contract and the exit penalties/arrangements for the contract or for a specific term in the contract, such as choosing to opt out of a product (eg supply capacity control) part way through should be clear and easy to understand.

## 4 Load Control

The Paper notes that retailers may use load control to cycle an air conditioner on and off so customers can manage their usage when cost of electricity is high. The Paper also notes that load control can also be offered by distributors so they can better manage segments of the network which are near capacity.

### Issues for comment

The Commission seeks stakeholder comments on:

- how will load control limits be set and agreed?
- for how long should an appliance be automatically turned off before restoring?
- Once restored, should the appliance remain on for a guaranteed period before being subject to turning off again?
- Should there be limits for appliance turnoffs in terms of how frequently, how many times in total, or the number of appliances involved?
- health and safety risks to customers from load control products
- third party roles in the provision of load control products
- ensuring that offers of load control include making customers adequately aware of the disadvantage they will experience by using this product
- the customer's ability to manually override on occasion when an appliance is automatically turned off
- the customer's ability to cancel the load control aspect of their electricity contract
- information privacy when load control is offered by distributors, retailers or third parties
- for how long should arrangements about load control run? (e.g. for one year? For the life of the contract?)
- might load control be part of a standing offer?
- what safeguards should be considered for customers on life support.

There are several categories of load control:

- Direct control via the contactor in the meter. This arrangement is currently used for hot water and storage space heating. This type of load control is a utility product.
- Via the local area network (LAN) where a load control device is operated via the LAN with no action via the meter. This type of load control is a utility product.
- Via the Home Area Network (HAN), where the HAN is owned by the customer and may be fed information via the Zigby interface. This type of load control is owned and operated/controlled by the customer.

#### 4.1 Load control limits and parameters

The ESC seeks stakeholder feedback on the following:

- how load control limits will be set and agreed,
- how long should appliances be turned off before restoring power,

- once power is restored should there be a guaranteed period before turning an appliance off again,
- should there be limits on how frequently it could be used or how many times in total.

The Paper mentions possible appliances for load control – air conditioners, pool pumps, heaters and freezers etc. Each of these appliances would need to operate differently in an on/off or thermostat setting arrangement. There is no one size that fits all categories of appliance type that ensures effective operation and customer comfort.

For example a pool pump could operate twice per day, 365 days per year. In contrast a freezer would need to cycle on/off for the agreed periods over a 24 hour period, 365 days per year, in order to ensure that the contents remained frozen. An air conditioner would need to operate in the afternoon and evening during the summer months. Each of these has distinctly different customer requirements.

With the exception of hot water and storage space heating which are already part of standing offers in the market, other appliances need to be managed via the appliance type and the agreed terms and conditions agreed with the customer in a market contract. The market product offerings should be allowed to innovate and mature. Technology and product offerings will adapt to meet customer's needs.

Where the AMI is used to send the load control message to the meter and to the specific appliance, there is no guarantee that the appliance is listening and receives or acts on the message that is sent. Customer load management through manual intervention 'the hand', the use of time switches, thermostats and other devices or via more sophisticated systems such as a customer HAN enables customer empowerment and choice of settings and overrides.

The Paper states that DPI is concerned not to restrict the positive benefits of such products. Rather than detailed regulations attempting to appropriately set parameters whilst restricting options and products, the focus should be on educating customers.

Customer protection arrangements should concentrate on ensuring that customers are well informed and that these products and parameters are well understood and easy to find in contracts. A media campaign by the regulator or government to raise awareness with customers that these types of products exist and how they may benefit customers would be appropriate. A campaign could run in a similar manner to that used for retail competition - the power of customer choice. The customer has not only a choice of retailer but a far greater choice of product offerings.

## 4.2 Health and Safety Risks

Unlike supply capacity control which limits supply to the whole premise, load control controls load on the agreed appliance only. Since load control does not restrict load to the premise, it does not have quite the same concerns relating to continued supply for life support customers.

Load control products are discretionary customer products. Customers need to consider carefully the arrangements when agreeing to air conditioner load control as the summer may be cool or like the 2009 January heatwave. Elderly and ill customers need to consider the health impacts of any product which involves room heating and cooling load control.

The paper recognises the potential value of load control to shift load remotely when these products are utilised across many customers. The NSMP is considering the use of a load management and network security protocol. Where significant amounts of load are able to be turned on/off remotely it is important that the stability and reliability of the network is maintained. This may include randomising on/off times in localised areas of the network.

### 4.3 Third party role in the provisions of load control products

As mentioned above, load control can be operated using a customer owned HAN. In this scenario the customer can manage their load or could use any third party they choose to manage their load, ie outside of the customer's relationship with the distributor or retailer.

In the Victorian regulatory framework, the retailer and distributor have the relationship with the customer, a third party load controller or switching party is not recognised.

UED expects that we would at least initially only be taking requests from the customer's retailer in relation to load control. The distributor does not have a method to validate the customer's agreed third party provider to ensure that they are only managing load for the contracted customer while the customer and the contract are both valid for the premise. A third party provider is more likely to control a customer's load bypassing the smart metering systems. These arrangements could be in place today using the internet or SMS messaging to send price signals to customers or specific appliances.

### 4.4 Making customers aware of the disadvantages of load control

A load control product is a discretionary product that would be utilised at an appliance level, the customer will have an opportunity to consider the price benefits vs the more limited nature of control of the appliance. The disadvantages of load control could be quite different for a customer if the load controlled was air conditioning vs a pool pump.

It will be important that the terms of the contract are clear in relation to the load controlled, on/off times or temperature set points etc, ability to override and contract duration.

### 4.5 Customer's ability to manually override load control

UED noted a number of approaches to appliance level load control above. Where the customer has developed their own HAN, it is likely that there will be the flexibility for customer setting and override.

The ability to override would be dependent on a number of items:

- the appliance configuration or thermostats(eg hot water systems);

- the HAN or control system configuration and level of control the customer has vs third party control; and
- the level of pre-configuration that a customer has eg setting pool pump on/off times.

The level of customer (or distributor) override capability will be determined by the functionality of the specific control system.

Given the wide variety of appliances and vendors, and that control systems will evolve over time, regulation at this time is not recommended. Hot water systems have evolved to have override or boost buttons as a vendor offering without the need for regulatory intervention.

#### 4.6 Customer's ability to cancel the load control aspect of a contract

The duration of the sale and supply contract and the exit penalties/opt out arrangements should be clearly specified in the contract. Where the products offered are more complex, eg load control, then the arrangements for a customer choosing to opt out of the load control aspect should be made clear. The contracting party should make it clear whether choosing to opt out of load control involves cancelling the whole supply and sale contract or whether there is an opportunity to opt out of the load control portion with default back to certain tariffs and whether there are any conditions attached, eg only opt-out after 1 year.

Where an air conditioner load control product is promoted heavily with a significant customer uptake, the contracting party would be relying on this load to managed and the load curbed in accordance with the contract. It may be problematic for a retailer if the load reduction was being relied on and was built into hedging arrangements only to find that an extremely hot summer eventuated and customers pulled out of the contacts.

#### 4.7 Load control as part of a standing offer?

Direct control via contactors in the meter is already part of standing offers for hot water or slab heating.

### 5 Readings at Meter Changeover

The paper states:

*'The Department suggested that distributors be required to provide the customer a copy of the final reading of the basic meter at the time of changeover.'*

*This would allow customers to verify their final bill based on the accumulation meter and provide a starting point for verifying future bills from the smart meter.*

*The Commission noted that options to achieve this include requiring distributors to:*

- *to leave a final reading at the premises at the time of changeover; or*

- *remind customers in the distributor's letter that installation is imminent and that the customer should take the opportunity to note the current reading on the basic meter.'*

### Issues for comment

The Commission seeks stakeholder comments on:

- whether distributors should be required to provide customers with a copy of the final accumulation meter read at the time when the basic meter is replaced with a smart meter, and
- how this might be done.

UED have been replacing faulty or non compliant meter families for the last decade without the need to leave a final meter read card.

The lowest cost option to implement is the second option noted above by the ESC – to remind customers that installation is imminent and to take note of the current meter reading of the basis meter which will appear on the last bill from the basic meter.

It is inefficient to introduce additional costs to develop a card to leave at the premises when this information will be on the customers next retail bill. UED consider that a final read card would incur the following costs/problems:

- Cards would need to be developed and printed to leave on site;
- Additional time to fill out the card and provide to the customer or leave in the letterbox;
- The distributor has no ability to guarantee that the customer receives the card and that it does not get thrown out as junk mail; and
- Increased costs to manage increased call volumes and complaints where it is perceived that a card was not left or the reading is incorrect.

UED recommend that the letter to customers advising that the installation is imminent would provide the most cost effective method of customers gaining confidence in the final read for the basic meter.

In addition where a customer is at home at the time of the meter exchange, this also provides a further opportunity (or reminder) for the customer to take a meter read at the time of the exchange.

## 6 Start Readings on Smart Meter Bills

The Paper states:

*'The Minister for Energy and Resources considered that including a start reading on smart meter bills would maintain existing information provision as enjoyed by customers with basic accumulation meters.*

*While the Commission agreed with the Minister's request in principle, it recognised that stakeholders have not been provided with sufficient opportunity to comment on this matter.*

### Issues for comment

The Commission seeks stakeholder comments on:

- the desirability of including in smart meter customers' bills the consumption read corresponding to the start of the billing period and
- the practicality of including in smart meter customers' bills the consumption read corresponding to the start of the billing period.

UED provide index accumulation meter reads for smart meters in the daily meter data files sent to retailers in accordance with the meter data file requirements. Retailers already have this information to use on a customer bill.

The recent ESC Smart Meter Review decision introduced a new regulatory obligation on Retailer's to provide the customer the end index accumulation read on each bill. This read on the customer's last bill is the start read for the current bill. The customer already has this information without introducing further regulatory obligations which may involve additional costs for bill print changes.

UED is sympathetic to customer's desire to have both the start and end index reads on the one bill. These index reads are not validated consumption reads, they are not the meter reads used for wholesale settlement or network charges, the validated interval data is used for this purpose. This is a subtle difference between the basic metering arrangements the customer is comfortable with and market arrangements in place for interval meters.

UED is concerned that the ESC needs to impress upon customers that these index reads are not used for billing and may not exactly match the aggregated interval data on the customer's bill. If customers are not well informed by the ESC then increased enquiries and complaints may result in cost increases to customers.



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