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Jemena Electricity  
Networks (Vic) Ltd  
ABN 82 064 651 083

321 Ferntree Gully Road  
Mount Waverley VIC 3149  
Locked Bag 7000  
Mount Waverley VIC 3149  
T +61 3 8544 9000  
F +61 3 8544 9888  
[www.jemena.com.au](http://www.jemena.com.au)

E-mail: [Khayen.prentice@esc.vic.gov.au](mailto:Khayen.prentice@esc.vic.gov.au)

Khayen Prentice  
Regulatory Review – Smart Meters  
Essential Services Commission  
Level 2, 35 Spring Street  
Melbourne VIC 3000

### **Smart meters regulatory review—capacity control and verifying bills**

Dear Khayen

Jemena Electricity Networks (JEN) appreciates the opportunity to comment on the issues paper released by the Essential Services Commission (the Commission) on capacity control and verifying bills in relation to smart meters. The Commission notes that there are several matters that require further consultation<sup>1</sup>. These matters are:

- the regulation of supply capacity control products for purposes other than credit management
- the regulation of load control products
- inclusion of the total accumulated consumption read corresponding to the start of the billing period on customers' bills for smart meters and
- whether the distributors should be required to leave customers the final accumulation meter read when they change over the basic meter to a smart meter.

The emergency supply capacity control function is reserved for use during supply emergencies to ration power and avoid or minimise power outages. In this regard, JEN suggests the Department of Primary Industries (DPI) should convene an industry working group to determine a common approach to the use of supply capacity control functionality of smart meters for rationing power during emergencies. This working group should leverage on the current structure of the Victorian Electricity Emergency Committee Technical Working Group. The working group should be tasked to consider the responses to the questions posed by the Commission in this issues paper and recommend a common industry approach. A common industry approach would allow one simple message to be communicated to all customers via the single energy spokesperson, call centre staff and the media during an emergency.

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<sup>1</sup> Decisions on previous consultation is in the Essential Services Commission's, *Regulatory Review—Smart Meters Final Decision, September 2010*

The Zigbee wireless interface feature of the smart meter that would enable command to reach smart appliances or displays (i.e. HAN devices) in a customer's premises is yet to be progressed as part of our AMI rollout program. JEN thinks it is too early to comment on the questions posed by the Commission in relation to load control products.

JEN believes premature introduction of regulatory rules in the interest of customer protection will stifle innovation of supply capacity control and load control products in the market place. It would be sensible to first allow the development of these products and then conduct a review in light of customer experiences and issues that emerge.

The role of the National Smart Meter Program is drawing to a close. AEMO will be carrying forward the work of this industry working group, developing market processes and procedures to support smart metering services in a jurisdiction that has smart meters mandated by a Minister. The Energy Networks Association (ENA) has taken responsibility for reporting to the Ministerial Council on Energy on distribution businesses' progress with smart metering pilots and trials. Several policy issues remain unresolved in relation to open access to smart metering infrastructure after a Ministerial mandate expires and in non-mandate jurisdictions. The ENA, the Energy Retailers Association and the National Consumer Roundtable are working together to establish a new strategic forum in which such issues can be discussed and resolved. JEN remains closely involved in this process.

JEN's detailed response to the Commission's issues paper is set out in Attachment 1.

If you wish to discuss the submission please, contact Siva Moorthy on (02) 8544 9442 or at [siva.moorthy@jemenacom.au](mailto:siva.moorthy@jemenacom.au).

Yours sincerely

**Siva Moorthy**  
Manager Network Regulation

## ATTACHMENT 1

### ESC Issues Paper—Smart meters regulatory review—capacity control and verifying bills

4 February 2011

#### 1 Supply capacity control

Supply capacity control means that all power to the customer's premise is cut off temporarily when the customer's demand exceeds a preset limit. The power would resume after a set period. The smart meter will continue to monitor the customer's demand and if it again exceeds the preset limit, the supply will again be cut off.

The Commission envisages that a limit would be set by the distributor and/or retailer nominating a chosen amount of electricity and the customer agreeing it, in return for some inducement such as a tariff reduction. The Commission also notes that a distributor could use supply capacity control in emergencies to help ration power and avoid power outages. Additionally, retailers could also use it to offer capacity limited tariffs to ration power and possibly avoid disconnection.

The Commission has invited stakeholder comments on a number of matters relating to supply capacity control.

##### 1.1 Cut off limits

The minimum Advanced Metering Infrastructure (AMI) functionality specification requires smart meters to have two supply capacity limit settings—a normal supply capacity limit and an emergency supply capacity limit.

JEN predicts the normal supply limit would be influenced by the limits of the meter and the connection assets—that is, the service cable and the capacity available in the network. It is worth noting that the standard terms and conditions of JEN's gazetted deemed distribution connection contract<sup>2</sup> stipulates a maximum allocated supply capacity of 40 amps (~ 8.8 kW) for single phase connection or the rating of the smallest component of the distribution system. JEN has not decided what this limit would be for the various classes of customer connections.

JEN has also not decided on the setting off the emergency supply capacity limit of its smart meters. This will be decided in due course. The emergency supply capacity limit would be set at a low level sufficient to keep the essential household appliances and equipment on—for example, a fridge, minimum lighting, heating or cooling.

The issues paper contemplates retailers offering supply capacity control products to their customers. We believe that these products would make use of the normal supply capacity functionality. For this to happen, JEN believes there first needs to be market processes and procedures to support these products. For example, when a customer moves into an existing property, there needs to be a way for the customer's retailer to find out whether the supply capacity control function of the meter is turned on or off and the control parameters.

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<sup>2</sup> Victorian Government Gazette, 1 August 2002, AGL Electricity Limited, Standard Terms and Conditions Electricity Distribution, Clause 6.4

## **1.2 How long should supply be cut off?**

The length of the temporary supply interruption should be long enough for a customer to turn off certain appliances so the supply capacity limit is not exceeded again when supply is restored. JEN considers 10 minutes would be ample, but the 'off' period should be randomised to avoid supply restoration to large number of customers happening at the same time.

## **1.3 Once restored should the supply remain on for a guaranteed period before being cut off again?**

Once supply is restored, the meter reassesses the energy consumed above the preset supply capacity limit. When the energy consumed above the supply capacity limit exceeds the preset energy limit, supply will be again cut off. It is noteworthy that the energy is measured in kWh and the supply limit is measured in kW. Because the supply cut off is dependent on the energy consumed above the preset supply capacity limit, the 'on' period will vary between customers.

Moreover, before commencing the emergency off-on cycling, the meters would generate a random delay period to avoid synchronised load switching. For these reasons, it is not possible to specify an 'on' period. Rather the decision should be on what the preset energy limit should be.

## **1.4 Should there be limits for cutoffs in terms of how frequently and how many times in total?**

The Commission appears to contemplate a lockout position after the meter has cycled through a number of cutoffs. JEN's smart meters have default lockout for supply capacity control cycling. If a meter cycles 10 times within a given calendar day, it will automatically lockout to the 'armed' state. In the 'armed' state, the customer would need to push a button at the meter to turn the supply back on. This function is necessary to protect the contactor (switch) in the meter which has a maximum life cycle of 10,000 operations. The 10-cycle parameter is a fixed number in the meter firmware and a change can be engineered.

JEN supports a common industry approach to this issue because it would allow one simple message to be communicated to all customers via the single energy spokesperson, call centre staff and the media during an emergency.

## **1.5 Can customers manually override the automatic cutoff?**

The supply capacity limit at the supply address would be set to the rating of the meter or the connection constraint or the limitation of supply the customer has agreed to in their distribution and/or retail contracts. JEN's smart meters are designed such that customers cannot manually override an automatic cut off of supply. Otherwise, it would defeat the purpose of having a supply capacity control function.

## **1.6 How to ensure that supply capacity control is used only for the purpose other than credit management?**

JEN understands that the Commission has decided not to allow retailers to offer supply capacity products to any customers for credit management purposes until 31 December 2013, when the matter can be considered again. A distributor will not know whether a supply capacity contract offered by a retailer is related to a hardship customer. Therefore, compliance with the Commission's decision can only be monitored through regulatory audits of retailers and monitoring complaints lodged with the Energy and Water Ombudsman of Victoria.

## **1.7 Possible health and safety risks to customers**

The health and safety concerns are no different to that present when supply is restored after a network fault or a planned outage undertaken for network maintenance, except for the impact of the on-off cycle on customer appliances and equipment. Under a supply capacity control scenario, the supply may go through a number of on-off cycles before automatically locking out in an 'off' position. The impact of this on-off cycle on customer appliances and equipment needs to be investigated.

JEN suggests that before the industry implements supply capacity and load control, there should be extensive industry trials to understand the impact load cycling would have on customer appliances.

## **1.8 Safeguards for customers on life support**

The supply capacity control feature in a smart meter can be disabled at specific supply addresses. This means customers with life support can have the supply capacity control functionality turned off.

## **1.9 Ensuring customers are well informed on supply control products and contracts**

JEN considers the party offering the capacity control products should be required to explain to the customer the terms of the contract, product parameters, conditions under which supply will be cut off and restored, ability to override the cut off, contract duration and exit penalties. Customers should be made aware of the advantages and disadvantages of the capacity control products.

JEN suggest a media campaign by the regulator or government to raise customer awareness of the advantages and disadvantages of the supply capacity control products would significantly add to customer awareness.

## **2 Load control**

Load control differs from supply capacity control in that load control does not result in disconnection of all power to the customer's premises. Load control could be done by using the Home Area Network (HAN) feature of the smart meter or via a direct load control contactor located in the meter.

## 2.1 Direct load control via contactor in the meter

The load contactor in the meter is currently used by distributors to control hot water and storage space heating. There is a 'boost' button on the meter and a customer can override the preset off-peak period. Retailers use this feature and offer lower prices to their customers reflecting the lower cost of energy at the off-peak times. The load contactor operates at predetermined times that are determined by the distributor and cannot be controlled or set by the retailer or consumer.

## 2.2 Load control via Home Area Network

The HAN functionality in a smart meter can be activated to enable command to reach smart appliances or displays (i.e. HAN appliances) within a customer's premises via the Zigbee wireless interface. This type of load control is dependant on the customer having appliances that can respond to the HAN messages.

The HAN features of the AMI Solution are capable of relaying messages to groups or individual registered HAN devices which could:

- alert a consumer of change in price (e.g. spot price event)
- signal a registered consumer appliance of a change in price (e.g. critical peak price)
- signal a registered consumer appliance of a load control event
- provide an informative freeform text message to registered HAN devices

In each case a consumer's appliance or HAN device would need to be programmed to respond to such events and the consumer (or appliance) can ignore such message events. At this time no B2B services have been defined or developed to permit retailers or third parties access to HAN services as described above.

## 2.3 Load control via other communication channels

There are other ways by which customers can receive energy consumption data and load control messages through other communication channels. For example, customers may choose to receive critical peak pricing messages via mobile phones, e-mails, or other internet services from their retailers. Customers can then remotely (via the internet) or manually instruct/program their smart appliances to individually turn on and off based on the signalling they receive via the internet and or HAN.

It is too early for JEN to comment on the questions posed by the Commission in relation to load control products. The implementation of the HAN feature, an aspect of JEN's AMI rollout program, is yet to be progressed. In JEN's view, a sensible approach would be to first allow the development of the load control products and then conduct a review in light of customer experiences and issues that emerge.

## 3 Reading at meter changeover

For a long time, non compliant meters have been routinely replaced without the need to leave a final meter read at the supply address. Therefore it comes as a surprise that customers would want this information during the AMI rollout program.

However, in the interest of assisting customers to verify their final bill based on an accumulation meter, JEN is supportive of including a reminder in the letters to the customers that smart meter installation is imminent and that they should take the opportunity to note the meter reading on their basic meter.

JEN does not support providing customers with 'a copy of the final accumulation meter read at the time when the basic meter is replaced because of the additional costs to the AMI rollout program.