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International Power - GDF Suez Australia

Submission to the AEMC Power of Choice – giving customers options in the way they use electricity

Ref EPR0022

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Executive Summary

In addressing the questions raised throughout the AEMC's issues paper "Power of choice – giving consumers options in the way they use electricity" International Power- GDF Suez Australia (IPRA) makes the following key points:

IPRA strongly supports a focus on delivering customer choice and achieving a "two sided market" as was originally envisaged for the NEM.

However, in order for customers to have an incentive to respond, several elements must be in place. Customers must have:

- An appropriate level of knowledge to choose or be able to access a service that can provide advice or manage a demand side response on their behalf;
- A pricing framework that incentivises demand response;
- Effective and timely information to facilitate efficient economic decisions;
- A clear and simple way of identifying benefits arising (ie cost savings/increases); and
- Access to appropriate technology to facilitate a response

- The current energy market operates as a one sided market, where generators are obliged to offer their generation into the market but loads are essentially absent from the competitive market.
- The current tariffs/contracts for small customers contribute to inefficient use of networks and inefficient investment, by rewarding poor network utilisation and penalising efficient network users.
- The timely provision of cost reflective network charges should be implemented as a matter of priority.
- Any rights to information and benefits of a DSP service must rest with the customer however these maybe re-assigned to other parties by agreement and for a fee.
- Use of the internet for delivery of market pricing information in real time and control of appliances needs to be examined and where effective, facilitated.
- Potential scheme designs should be as simple as possible with transparent information flows.
- Technology is needed to enable DSP. Unfortunately current smart meters are being implemented in a "dumb way" and do not provide price information to the consumer nor are they able to control appliances on the customer's behalf. Showcase applications are needed to show the way forward and deliver real benefits to consumers.
  - Expansion of smart meters to include a "soft fusing" arrangement to enable customers load to be limited to an agreed maximum demand (tariff or contract) should be considered. (But not exclusively assigned to networks)
- Before effective and practical DSR arrangements are implemented a public education campaign would be required to give customers the basic information on what they may benefit and some of the reasons behind it.

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Introduction

International Power-GDF Suez Australia (IPRA) appreciates the opportunity to comment on the AEMC's Issues Paper "Power of choice – giving consumers options in the way they use electricity" issues paper published in July 2011.

A current feature of electricity markets in Australia is the absence of any large-scale, practical and effective regime for demand side response (DSR) also often referred to as demand side participation (DSP). While markets such as the National Electricity Market (NEM) provide for the competitive dispatch of demand and supply, there is very limited development of a market on the demand side. In the NEM, this has led to a one-sided market where generation is price responsive but customer load in general is not, whether at an aggregated or discrete level.

The exercise of customer choice in electricity markets as an aspiration is sensible economics and worthy of pursuit. However the unique characteristics of electricity, it's status as an essential service has likely contributed to this fundamental imbalance in market dynamics. Recent history has shown how difficult reform of the electricity market has been in relation to developing a practical and effective demand side response framework.

Rising electricity costs have been a key public policy issue recently and there has been a great emphasis on the rising cost of electricity contributing to rising "cost of living" pressures for households. This has led to a greater scrutiny on the drivers for cost increases customers are facing in their electricity bills.

This scrutiny has revealed that at the retail level, tariffs and pricing remain opaque to the majority of customers.

IPRA welcomes the re-examination of options to encourage a more active role for customer choice in relation to the use of electricity. The theory in relation this issue is clear; however achieving greater customer choice has proved in practice to be more elusive. IPRA's comments are provided for consideration by the AEMC.

Detailed response

Customer choice

IPRA supports the principle outlined in the AEMC's issues paper that only where the benefits exceed the cost, should demand side response initiatives be pursued.

IPRA believes that a key factor in inhibiting an effective and practical DSR framework is the absence of an effective price signal.

Demand side response should only be pursued where economic and sustainable. Delivery of the demand side response must not distort supply side economics, and must not compromise the market design fundamentals of the energy only market.

The price that customers are charged and end up paying is not due exclusively to their own consumption and reflects factors outside their control. In particular, the fixed component of electricity charges used to fund transmission and distribution costs have been increasing. This has

occurred at a time when the wholesale costs of energy have been reducing. Customers have rightly observed that the unit cost of electricity has increased and there has often been little benefit in amending behaviour as this is unlikely to lead to lower overall costs.

Electricity customers need to be able to easily assess the benefits of changing their buying or usage behaviours against the status quo. This is a simple principle, but becomes complex to implement as customers' decisions impact the distribution networks where significant costs or savings are experienced. Under the current arrangement customers are insulated from such costs or benefits at the time they are making their decision.

Customer costs, loads and network charges

The current cost structure to the consumer is simply not cost reflective. Network costs are charged on variable basis but a majority of the network costs are fixed.

Customers with very "peaky" summer air-conditioning loads will cause a significant co-incident demand on network services. As a consequence, networks may need to be augmented to cater for short durations of high demand. This represents an inefficient use of the network and customers responsible for these inefficiencies need to bear such costs. Ultimately these customers will decide if there is an overall net benefit of their usage of the network in this way, but cost reflective network usage signals remain absent.

However under current pricing regimes such customers are effectively cross subsidised by customers with high energy usage outside of system peaks (where there is surplus network capacity). Thus the current arrangements subsidise (encourage) inefficient use of the network and at the same time penalise (discourage) efficient usage.

The customers need to know the impacts of what they buy and how they intend to use an appliance on the system. However at the time of new appliance purchase, there is no information available regarding the impact on networks and likely cost increases. In addition there is a very long delay (in the order of years) between a purchasing decision and the eventual network cost increase.

The following example illustrates the problem with current network charging. C*ustomer A* has an air conditioning peaking load in summer with low annual energy usage, and c*ustomer B* has an off-peak load used for heating and has a high annual energy usage.

It is approximated that the network component is 50% of the overall charge (ref. IPART Fact Sheet, Regulated electricity retail tariffs for 1 July 2010 to 30 June 2013 – Draft report).

		Load	Unit charge	Fixed network charge	Usage	Energy	Cost $/year	Cost Share
		kW	Charge	$/year	Hrs / year	kWhr/year	Cost $/year	%
Total charges using current tariff								
Customer A	Peak	10	$ 0.210	$ -	80	800	$ 168	
Customer B	Off peak	10	$ 0.135	$ -	540	5,400	$ 729	
Estimated network charges			(Assumed network costs are 50% of the charge)					
Customer A		10	$ 0.105	$ -	80	800	$ 84	19%
Customer B		10	$ 0.068	$ -	540	5,400	$ 365	81%
							$ 449	
Alternate cost reflective network charges								
Customer A		10	$ -	$ 404	80	800	$ -	90%
Customer B		10	$ -	$ 45	540	5,400	$ -	10%

Estimated subsidy from customer B $ 320 per annum

In this example *customer A's* off-peak demand utilises spare capacity in the network, whilst *customer B* with summer peaking load stresses the network during the hottest days and will contribute to the need for network augmentation. Yet the efficient behaviour of *customer B* is penalised by the existing tariff arrangements where they pay 434% of the charges paid by c*ustomer A*.

With customers causing the need for network augmentations being encouraged to increase their usage of the network, it is not surprising that network augmentation costs continue to skyrocket.

At the same time the network businesses are likely to benefit from the current distortions as they get to invest additional capital to remove prospective network constraints and achieve increased revenues from a larger regulated asset base on which they earn a return.

Clearly network businesses are likely to be financially penalised by effective DSP, and therefore can't be expected to be the champions of change in this regard.

Suggestion on demand side response and network costs

IPRA suggests that there is a significant opportunity for DSR in relation to network costs.

IPRA believes the current network charging arrangements have two significant defects:

- An essentially fixed cost is converted into a charge on energy consumption, regardless of whether consumption at a particular time might or might not contribute to the setting of that fixed cost. Consumption is thus inhibited unnecessarily for much of the time; and
- Consumers that have, or can contrive to have, an efficient network utilisation pattern, and are not precipitating network augmentation costs are denied the opportunity to gain from this.

We consider that for many customers this issue will be unimportant. On the other hand some material benefits could be achieved by providing alternative arrangements for customers with sufficient benefits at stake. These benefits could be accessed by allowing individual customers to opt out of the standard network charging regime, and into a regime with more accurate reflection of actual costs.

The suggested characteristics of such a regime are:

- For a customer with a consumption pattern proportional to the aggregate consumption pattern that determines network costs, the alternative regime would charge the same in aggregate as the standard regime (but with a different structure),
- For any customer with a measured consumption pattern that impacts less on network costs than the aggregate consumption pattern, the charge would be lower than the standard regime, thus reflecting the reduced contribution to costs, but
- If the measured consumption pattern proved to impact proportionately more on network costs than the aggregate demand, then the charge would be correspondingly higher

This arrangement would allow the "low-hanging fruit" of reduction in network costs through altered consumption patterns to be realised without any added complexity for the majority of customers.

Response to specific questions raised by the AEMC

Question 4

Are there other issues which we should consider in our assessment process and criteria?

IPRA supports the assessment process and endorses the cost-benefit approach of developing a "two-sided" market. While the exercise of customer choice is worthy of aspiration, the value for money proposition and cost/benefit ratio in moving towards this should be important criteria in developing a way forward.

Question 5

What are considered the drivers behind why consumers may choose to change their electricity consumption patterns? Please provide examples or evidence where appropriate.

The chart on p. 8 of the AEMC's Issues Paper shows that 28 per cent of electricity consumption is from the residential sector. This sector undoubtedly has the greatest number of individual customers yet as a proportion of total consumption it is less than one third.

Residential consumption patterns are highly correlated to seasonal weather patterns. While there is a detectable price elasticity effect with electricity pricing, it remains modest.

Reading the AEMC's Issues Paper, IPRA feels that the AEMC is expecting that households will be the largest exercisers of choice in relation to their energy consumption. Rather than target households this review should seek to identify those customers that are more willing and able to moderate their demand and make their integration into a practical and effective DSM framework a priority (ie address the other 2/3 of the demand).

Question 6

Chapter 4 lists some plausible DSP options that are currently used or could be used by consumers. Are there any other plausible DSP options currently used by consumers that have not been identified? Please provide description of measures and examples, where available.

Of the examples cited in the Issues Paper in Box 4.1, IPRA observes that many of these examples are not driven by an expression of customer choice but rather a response to direction from government policy particularly in relation to climate change and renewables policy.

For example, energy conservation is something that many do as a habit and have done for a very long time. Likewise fuel substitution is difficult and use of the either electricity or gas for various uses is largely driven by the availability of gas to customers. Where it is available, there is a choice and where it is not there is not.

The true development of an effective and practical DSR framework will be through a genuine expression of choice in response to price (more effective tariff structures) rather than a compulsion to act or a defensive response to a coercive government policy.

Question 8

Are there other DSP options that are not currently available to consumers, but could be available if currently available

technologies, processes or information were employed (or employed more effectively) in the electricity (or a related) market?

The internet presents many opportunities in this area if used with truly "smart" meters and a cost reflective pricing methodology. Technology could also lead to innovative solutions on demand management, for example soft fusing or demand limiting of customer loads.

IPRA believes that DSP options will emerge when customers truly feel that there is a cost reflective pricing regime available to them. Without this, there is very little prospect of a widespread pursuit of innovative DSP options.

Question 9

What are considered the relevant market conditions to facilitate and promote consumer take up of cost effective DSP?

The market conditions to facilitate and promote consumer take up of cost effective DSP will reward customers for exercising choice in relation to their demand. Current retail pricing and tariffs remain opaque to all but the most sophisticated of customers.

Once customers can see a connection between saving energy and saving costs within a reasonable time period, they will have a price incentive that will promote consumer take up of cost effective DSP.

Question 11

What market conditions (technologies, processes, tariff structures, information etc) are needed, that are not currently employed in the electricity market, to make other DSP options available to consumers?

Technology is needed to enable practical and effective DSP. Unfortunately current smart meters are being implemented in a "dumb way" and do not provide price information to the consumer nor are they able to control appliances on the customer's behalf. Showcase applications are needed to show the way forward and deliver real benefits to consumers. "In home" or "in business" displays will also assist customers to make decisions as part of a practical and effective DSP framework.

Expansion of smart meters to include a "soft fusing" arrangement to enable customers load to be limited to an agreed maximum demand (tariff or contract) should be considered. However the service must not be exclusively assigned to the networks. Any rights in a DSP scheme must be assigned to customers by default and not conferred to networks or retailers. However third parties may then seek to have those rights re-assigned for an agreed price.

Before effective and practical DSR arrangements are implemented a public education campaign would be required to give customers the basic information on changes they will see, likely benefits and to seek widespread community and industry buy-in.

To encourage a greater demand side response in the market large customers could be compelled to submit into the spot electricity markets (this could also be facilitated by retailers) to provide demand side response and incidentally deal with perceptions of situational market power.

Question 12

Do you consider retail tariffs currently reflect the costs to a retailer of supplying consumers with electricity?

Recent examination of retail price tariffs reveals that these are opaque to end users. With the unit-cost of energy increasing and the cost to deliver it via transmission and distribution increasing it may be difficult to prove that an effective demand response will provide price reductions to end users and hence discourage DSR.

Whilst the current retail tariffs may reflect the way retailers are charged for transmission, the charges are not reflective of the fixed and variable (losses) costs of a network. To an average domestic consumer the energy component represents only about 25% of the cost. Therefore it is dominated by network charges, cost of renewables and retailing costs.

It must be noted that the costs of transmission and distribution to retailers do not reflect the value of the network use (they are charged on a variable basis when most of the actual costs are fixed).

Question 13

Are any changes needed to retail price regulation to facilitate and promote take up of DSP?

While customers remained shielded from volatile electricity prices their incentive to use DSR as a risk management option is suppressed. Full retail price de-regulation remains an elusive but critical goal in many States due to the political risks associated with this.

As a bare minimum, retail billing should provide information on the breakdown of electricity costs into fixed and variable charges. **Question 14**

Do the charges to retailers for use of transmission networks reflect the value of that use?

They do not, as detailed above.

Question 15

Do the charges to retailers for use of distribution networks reflect the value of that use?

See answer to Question 14.

Question 16

Do all consumer groups, including vulnerable consumers benefit from having cost reflective prices in place? If not, are any special provisions required to protect certain classes of consumers?

The design of an effective demand side response schemes must primarily focus on customer benefits. The needs of vulnerable customers should not serve to distort a potential scheme, and should be managed outside of a scheme by appropriate subsidies where warranted.

Question 17

To what extent do consumers understand the how they can reduce their electricity bill? What information do consumers need in order to increase their understanding of how they can reduce and manage their electricity consumption and hence bills?

IPRA believes that electricity pricing arrangements are deliberately opaque and discourage consumers from fully understanding how their charges arise.

Question 19

Could better information be provided to consumers regarding the actual consumption of individual appliances and pieces of

equipment? If so, what information could be provided and in what form?

IPRA believes that a precondition to the establishment of a practical and effected DSR framework is a public awareness campaign to educate consumers on their use of electricity and how their use is likely to influence their total costs. IPRA simply notes that in the future, usage at an appliance level may be possible, however without cost reflective pricing arrangements, this information is trivial.

Question 20

Are retailer and distributor business models supportive of DSP?

No.

Distribution business models

As regulated businesses earning a fixed return on a regulated asset base, distribution businesses are incentivised to commit capital to expand their networks. The Smart Meter rollout in Victoria has occurred ahead of an effective DSR and cost reflective pricing framework. These new meters which at present provide no extra DSR capability, provide an increase in return to distribution businesses through a higher RAB yet do not provide real benefit to customers at present.

Retail business models

Retail businesses derive a profit though the sale of retail electricity at a premium to the purchase of wholesale electricity. It is difficult to see the drivers for a retail business to support measures that lead to a reduction in overall electricity sales, an increase in wholesale electricity costs and an overly regulated retail pricing framework.

Question 24

Are there specific issues associated with investment in infrastructure needed for consumers to take up DSP opportunities?

IPRA believes the greatest single advance toward a practical and effective DSR framework is to develop cost reflective pricing for customers. This action alone would allow customers to exercise choice in relation to their consumption and the anticipated cost of that consumption.

Once this foundation principle is established and available to all customers or a proportion of customers who choose to “opt-in”, infrastructure and device should follow to support the choices. To focus on the infrastructure ahead of the pricing reforms is literally to put the “cart before the horse.”

Question 29

Do current technology, metering and control devices support DSP? If not, why not, and what are considered some of the issues?

Current technology, metering and control devices reflect the immaturity of a practical and effective DSR framework.