



Submission to the AEMC Review of Energy Market Arrangements for Electric Vehicles – *Draft Advice*

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1. Responses to Consultation Questions in the Draft Advice

Question 1 – EVs and Pricing

Do you agree that efficient EV charging behaviour should be incentivised through network pricing signals? If so, what arrangements are necessary to implement these pricing signals?

Yes, efficient charging behaviour should be incentivised through network pricing signals. As an aggregator and manager of EV charging load, Better Place seeks pricing structures such as “Time of use” and “Critical Peak Pricing” which offer us a means of lowering the average cost of the kWh we consume by shifting this consumption into lower-priced time periods.

The following regulatory changes are necessary to implement these pricing signals:

A. Direct distributors to develop and offer ‘Critical peak’ network tariffs

By ‘Critical peak pricing’ (CPP) we mean:

“... a specific ToU price structure, whereby for most of the time, simple ToU tariffs apply (i.e. peak, shoulder and off-peak), except for certain days during the year when demand is exceptionally high (generally very hot or cold days) when (sometimes much) higher prices are imposed. The critical price can occur for a limited number of days, or when the system/market meets certain conditions. CPP intends to strengthen the real-time price link between the wholesale and retail electricity markets to strongly encourage electricity users to shift load from critical peak periods where possible, which in turn will reduce demand during periods of system stress, and avoid electricity shortages (i.e. black outs).”¹

Such pricing structures offer EV drivers and EV charging aggregators like Better Place a benefit for not charging during periods of peak demand, while providing the distributor a mechanism to limit load coming on to their network during super-peak periods.

The benefit to distributors of using CPP structures on EV charging load will amplify as vehicles capable of more rapid rates of charging at home are launched in the market. Cars from Ford and Nissan capable of 32 amp single phase charging (6.6 kW) are due for launch in Australia in 2013. Renault and Mercedes have models capable of 32 amp 3 phase (20 kW) charging due for launch in 2013-14. These vehicles can draw a load as big as an average house.

B. Removing barriers to competition in the market for metering services to small customers

The meter is like the cash register in the electricity market. Metering configurations are the method by which a pricing structure is applied to a load or to a generation source. Global competition in the metering hardware industry has brought to market a large range of low-cost, very flexible and high-performance meters. However, small customers are barred from accessing many of these by the regulatory regime in Australia which entrenches a monopoly in metering for the local distributor. As a result, a customer seeking to separately meter their EV charging load to enable it to be exposed to a cost-effective pricing structure is limited to whatever the distributor in their area elects to offer.

¹ Jarvinen, J., et al *Electric Vehicles in the NEM: Energy Market and Policy Implications*, AGL Applied Economic and Policy Research, Working Paper No.27, October 2011. Page 13.

In our experience, Australian distributors offer a very limited range of metering configurations for small customers. Distributors claim that supporting a bigger range of metering options costs them too much to manage and is not required of them under the National Electricity Rules.

This is precisely the wrong outcome and does not promote an economically efficient electricity market. Rather than distributor-imposed limits on meter choices, we need more competitors in the metering services market who are competing to offer a greater range of metering configurations which are tailored to the different customer segments. More choice in meters, allows more flexible pricing and energy services offerings, which both:

- A. Lowers costs and improves service-levels for customers; and
- B. Strengthens the cost-reflectivity of network services and retail products, which drives load to periods when there is available network and generation capacity, rather than periods of peak demand.

Today's consumers are already voting with their feet and choosing combinations of electricity products factoring in features such as grid-supplied electricity, solar panel leasing, 3 phase connections, meter data platforms, appliances on time-switches, and dual fuel heating and cooling systems. With the arrival of new products such as electric cars, air-conditioners capable of remote cycling, and home-energy management systems with smart power points we can expect this trend to continue, further diversifying the ways that consumers use electricity over next decade.

To keep pace and ensure the NEO is achieved, we need a metering services market that is competitive and responsive.

What specific barriers to competition in the metering services market need to be removed?

- I. **End distributors' monopoly on metering in Victoria** - In Victoria, the Advanced Metering Infrastructure legislation directly prevents any other metering provider other than the local distributor from offering metering services to premises consuming less than 160 MWh per annum until 2014. This ban on competition should be removed as soon as possible.
- II. **Unbundling of metering charges from network tariffs in NSW and Queensland** – the AER should direct distributors in these states to offer small customers network tariffs which do not bundle the cost of metering services in with DUOS. This will allow a consumer to choose an alternative metering provider and not pay twice for their metering services.
- III. **Allow accredited metering providers to act as the Responsible Person for a metering installation** – In the NEM right now the compliance functions of the Responsible Person (RP) role are routinely delegated by the LNSP or Retailer to the Metering Provider who are functionally responsible for the installation, maintenance and compliance testing programs for the metering assets. Given this is how the market is operating, there seems no reason not to formally allow accredited Metering Providers to take on the Responsible Person role directly.
- IV. **Allow customers to select their metering provider** – The current market design has the Retailer or the Distributor procuring metering services from an accredited Metering Provider on behalf of the consumer. We see no reason why a customer seeking a specific metering configuration should not be allowed to directly procure their own metering services from an

accredited Provider. This market design change would stimulate greater focus on consumer needs rather than supplier needs.

Question 2 - Controlled charging

Do you have any suggestions on how to improve the method for valuing non-firm benefits and improving the negotiation process among multiple parties so that the diverse benefits of controlled charging are captured?

We shall provide more detail in our response to the Power of Choice Review Draft Report. However, in broad terms, we argue that the LNSP (as the monopoly service provider) should be provided with a clearer financial incentive for contracting with providers of demand-side services and be subject to close oversight by an independent umpire such as the AER in these contractual negotiations.

Question 3 - Vehicle to Grid

Should clause 7.3.1(a)(7) of the NER be amended to reflect the current early status of V2G? Should interval meters be required to have bi-directional capability?

It would be premature to define *any* electric vehicle charging equipment installation as one “where bi-directional active energy flows could occur”. No electric vehicle on the market or any planned for launch in the Australian market have this feature. The additional cost in vehicle electronics of equipping cars to supply electricity from their batteries to a premises is not insignificant and, as a result, this is certainly not a focus for the mainstream car makers who will drive sales of electric cars in this country for the next five years.

At this point, imposing a compulsory requirement on any consumer who installs electric vehicle charging equipment to also install a bi-directional meter seems unduly heavy-handed. If a customer is seeking this type of connection and meter, then they should have the right to secure it at their cost from their LNSP and any accredited Metering Provider.

Question 4 - Identifying a large load (including an EV)

1. Should any loads above a threshold (eg. 15 amps) be identified to the DNSP? Could the Wiring Rules (AS/NZS 3000:2007) provide the basis for determining the maximum demand at a premise and provide the means by which an electrical contractor can notify a DNSP of a new or altered installation affecting maximum demand at that premise?

2. If there are no requirements to identify particular appliances, should there be a total load threshold above which identification to a DNSP is required?

Currently, ‘Service and Installation Rules’ in each state require electricians to notify the DNSP when *any increase* to the maximum demand of a premises is planned and therefore an increase in the capacity of the connection is required. Our observation is that distributors approach to pricing these increases in the capacity of small customer connections does not reflect sound economic principles.

There is *no cost penalty* for a homeowner who wishes to upgrade from say a 40 amp connection to an 80 amp connection to accommodate large new air conditioner and filter for his new pool. His neighbour in an identical home next door who is perfectly content with his existing 40 amp connection pays the same DUOS tariff and therefore effectively cross-subsidises the upgrading homeowner.

Rather than introducing a requirement for distributors to be notified about the presence of new *appliance* loads above a specific size, we would recommend that regulators examine more carefully what cost-recovery mechanism could be introduced for those *premises* seeking increases to the size of their grid connection. Consumers need to be incentivised to manage their load within their existing connection size if possible. In Victoria we understand the deemed average connection size required under the legislation governing the licensing of distributors is 40 amps per home. However, we understand almost all new homes and homes undergoing major renovations are granted connection sizes of 80 amps or more *at the same price as a standard connection*. This pricing approach does not encourage consumers to be efficient in their use of network services and reforms are warranted.

Question 5 - Changing the definition of connection point and supply point

Do you agree that changing the definition of connection point and supply point in the NER should facilitate separate metering of loads (or generation)?

Does the creation of this new definition produce any unintended consequences? Please provide reasons.

Yes. We support this recommendation.

We have not identified any unintended consequences.

Question 6 - Parent/child metering arrangements

Do you agree that our proposals address existing issues with parent/child metering arrangements? If so, how should these arrangements be specified in the NER? Please provide reasons.

Yes, we agree with these proposals.

We suggest that a new section on parent/child metering arrangements be added to *Chapter 7 - Metering* in the National Electricity Rules.

Question 7 - Multi element meters

Do you agree that having one Responsible Person for multi element meters is the efficient solution?

Are there any other issues with multi element meters that we should address?

Yes. We support this recommendation.

Question 8 - Metering in embedded networks

Do you agree that our recommendations address existing uncertainties with respect to metering in embedded networks? Please provide reasons.

We broadly support these recommendations.

However, an important matter is not fully addressed in the Draft Advice regarding metering in embedded networks: it is the process by which a new downstream connection point/supply point in an embedded network *is created*. Right now, the incumbent retailer (who is the FRMP for the upstream meter) and the LSNP (as the only party able to issue a NMI for the downstream connection point/supply point) both have the power to block the creation of any new downstream connection point. It is not appropriate that they hold this blocking power.

Consider the example of a resident in a body corporate apartment building who parks their car in the basement carpark which is currently supplied with electricity for lighting and services under a traditional connection point. The body corporate is the customer at that connection point and its retailer is the FRMP. The resident purchases an EV and obtains the consent of their body corporate to install an electric vehicle charger at their parking spot and to establish a new downstream connection point/supply point so they (the resident) can be billed for this load. But, this new connection point/supply point cannot be established unless the body corporate's retailer authorises this change to the upstream connection point for which they are the FRMP and the LNSP is prepared to issue a NMI for the new downstream connection point/supply point.

There are a range of reasons why this consent may be withheld by the retailer and the LNSP. It may be due to competitive reasons. It may simply be driven by a desire to avoid the administrative costs involved in facilitating the change. Regardless, our view is that this blocking power is not appropriate and should be addressed in the changes to the Rules proposed here. If the existing customer at the site where the embedded network is proposed has given their explicit, informed consent, then the site's retailer and LNSP should not have the power to block the establishment of a new downstream connection point/supply point. In the case of the LNSP, they should also have a positive obligation to issue the new NMI within a pre-defined, reasonable time period.

Question 9 - Two (or more) FRMPs at a connection point

1. Do you agree that our recommendations will enable two or more FRMPs to operate effectively at a connection point? Please provide reasons

2. In the event that one FRMP wishes to disconnect a consumer, do you agree that a FRMP should have the power to disconnect the consumer's total load, which includes the load from the other FRMP? Or do you think that each part of the load should be able to be disconnected independent of the other FRMP?

Yes, we agree with these recommendations.

With regard to disconnections powers, we agree with the AEMC's position that both FRMP should have the power to disconnect the consumers' total load in accordance with the stringent consumer protections in the relevant regulation. Obtaining explicit informed customer consent should be the foundation on which this power should rest. Any two retailers sharing a connection point should be under the same obligation to inform the customer that their continued enjoyment of the services provided via this shared connection point requires that they meet their financial obligations to the two retailers under the terms of their electricity supply contract. The customer must be informed that if they do not meet their financial obligations to one of their two retailers, then that retailer has the power to disconnect the entire premises.

If a consumer does not wish to consent to these arrangements, it is important they are informed that they have the right to request the installation of separate disconnection equipment for each retailer at their own additional cost.

Question 10 - Sale of electricity and the bundled service provider

Do you consider the AER should be required to specify how it will determine whether a bundled service provider is selling a good or service that constitutes a legal sale of electricity, for example, through a guideline?

Yes, we agreed that a guideline from the AER on this issue would be valuable. We expect that as the market for 'bundled electricity services' develops over the next decade, businesses like Better Place will experiment and test different product and feature combinations. Clear guidance from the regulator on how it shall determine if a specific bundled product includes electricity as 'primary' vs 'incidental' component would help immensely.

Question 11 EVs and retail exemptions framework

Do you agree that the AER should review its retail exemptions framework to clarify the status of EV charging at commercial EV charging stations where onselling occurs? Please provide reasons.

Yes, we agree with this recommendation. This approach best aligns with the current approach to regulation of onselling.

2. Appendix - Profile of Better Place

Better Place is the world's leading electric car charge network company and has raised over US\$750M in equity financing in the last 3 years from investors including HSBC, GE, Morgan Stanley and UBS AG. The company works with all parts of the transportation ecosystem, including automakers, battery suppliers, energy companies, and the public sector and therefore has a detailed and up-to-date knowledge of global developments in this rapidly moving space.

To accelerate the mass adoption of electric cars, Better Place is building an intelligent network of plug-in charge spots at private homes, corporate and public car parks, which will provide most of the energy required. For extended range we will also deploy battery switch stations that allow the driver to swap their depleted battery for a full one in under five minutes and, where applicable, high-voltage quick charge outlets.

For more information visit www.betterplace.com.au