

INTRODUCTION

ActewAGL welcomes the opportunity to comment on the Issues Paper, *Energy Market Arrangements for Electric and Natural Gas Vehicles*, issued by the Australian Energy Market Commission (AEMC) on 18 January 2012.

ActewAGL is a multi-utility business formed in 2000 as two partnerships, ActewAGL Distribution and ActewAGL Retail. ActewAGL Distribution owns and operates the electricity network in the Australian Capital Territory (ACT) and the gas networks in the ACT, Queanbeyan region and the Shoalhaven. ActewAGL Distribution also operates and maintains the ACT water and sewerage networks under contract to the owner of the network, ACTEW Corporation Limited. ActewAGL Retail purchases and retails electricity and gas services in the ACT and throughout the Capital Region (including Goulburn, Yass, Young, Nowra and Bega) and manages customer service and marketing.

BACKGROUND

In July 2009, Better Place Australia (BPA) and ActewAGL jointly announced the selection of Canberra as the site of BPA's first city-wide deployment of electric vehicle (EV) infrastructure in Australia. Since that time, ActewAGL and BPA have worked collaboratively to plan the infrastructure deployment. In June 2011, ActewAGL Retail and BPA executed an agreement for ActewAGL Retail to supply BPA's EV vehicle charging network in Canberra with renewable energy over a ten year period. In addition, it should be noted that ActewAGL Retail has made a small investment in BPA during BPA's seed funding round in November 2009.

It is also relevant to note that ActewAGL currently owns and operates a small number of Compressed Natural Gas (CNG) refuelling stations in the ACT and New South Wales (NSW). These refuelling stations currently supply CNG to a number of individual and fleet customers.

ActewAGL's interest and participation in the alternative transport fuel market is prompted by its desire as a good corporate citizen to facilitate the uptake of environmentally responsible solutions and by the business opportunities presented by such developments.

Given the active participation by ActewAGL in facilitating the deployment of both electric and CNG powered vehicles, ActewAGL is uniquely placed to provide advice on the costs and risks associated with the impact of such vehicles on electricity and natural gas networks and on market participants.

While ActewAGL notes that the AEMC's objective¹ is to advise the Ministerial Council on Energy (MCE) on how energy market frameworks can support the adoption of EVs and NGVs in the most economically efficient manner, it remains ActewAGL's strong view that regulation should only be introduced where there is clear evidence of market failure and such support should be provided in a manner that does not prejudice network

¹ AEMC Issues Paper, *Energy Market Arrangements for Electric and Natural Gas Vehicles*, page 2.

security and/or reliability or introduce additional costs to network providers.

NETWORK IMPACT

Management of Load

ActewAGL acknowledges the need for the management of the anticipated future load created through the widespread use of electric vehicles. ActewAGL agrees that the arrival of an EV at the residential home in the evening may often coincide with a network's peak load and so it is beneficial to network operators to be able to manage the manner and timing of the charging of the EVs.

It is ActewAGL's view that the impact of significant EV-related load will vary across distribution networks according to the particular characteristics of the various networks. ActewAGL believes that the satisfactory management of the EV-related load within the ACT can be achieved through a combination of factors, including:

- the application of time of use tariff structures that offer customers incentive through prices to charge their vehicles in off peak hours and in particular, overnight, thereby shifting the EV load to times with greater capacity;
- the capacity for provision of EV charging management by service providers like BPA; and/or
- management of EV charging by network providers through smart network (and smart meter) infrastructure.

ActewAGL notes that interval meters programmed as time-of-use meters are currently installed in all new premises and as replacement meters in the ACT. Customers may also specifically request the installation of a time-of-use meter. This provides access to time-of-use tariffs to customers with EVs, encouraging optimal use of the network as customers manage their consumption so as to minimise their costs.

ActewAGL has recently extended its controlled domestic off-peak tariffs to also apply to EVs.

Metering

The metering of the EV charging stations within a residential setting to meet the requirements of charging management service providers requires careful consideration in order to achieve a solution that:

- is scalable;
- is consistent with reasonable network operations and requirements; and
- does not impose an undue cost burden on the network provider, the individual customer or the EV service provider.

Having considered this matter in terms of the proposed EV deployment in the ACT, it remains ActewAGL's view that no single solution can be imposed given the diversity of household metering configurations commonly

deployed within distribution networks. The optimal metering solution is dependent on a range of factors including the existing customer switchboard configuration, the number of other appliances (such as solar PV installations) metered at the residence and the overall household load. Such elements will determine whether the EV relevant load requires a second meter, whether a dual element meter can be utilised or whether an alternate metering configuration represents the most suitable solution.

It is ActewAGL’s view that while a number of solutions may be available to EV customers, any non-standard costs incurred by electricity network operators in accommodating EV infrastructure should be at the cost of the EV infrastructure service provider and/or the EV customer, as opposed to the network operators recovering these costs from the general consumer base through higher Network Charges.

Electricity Market Regulatory Arrangements

ActewAGL considers that EV loads can be managed (thorough the variety of measures noted previously) and on this basis does not consider that specific regulation is required at this time. It is ActewAGL’s view that in the absence of clear evidence of a problem associated with the introduction of EVs and justification that additional regulation will be beneficial, it is appropriate to implement a policy of minimal interference in the market.

SUMMARY

ActewAGL’s view on the potential costs and benefits of EVs in regard to electricity networks and markets can be summarised as is noted in the table below:

Costs that EVs may introduce	Potential network benefits of EVs
<p>The potential network related costs of the introduction of EVs include the following:</p> <ul style="list-style-type: none"> • network management of load; • metering infrastructure; • settlement with customers and / or EV infrastructure providers. 	<p>The potential network benefits of the introduction of EVs include the following:</p> <ul style="list-style-type: none"> • provision of a discretionary load that can be managed to avoid network peaks and even load demand; • provision of a sizeable load (over time) that can better utilise capacity in the network.