

TO: Independent Competition and Regulatory Commission
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Submission on a pricing model for a premium feed-in tariff

I strongly support the adoption of electric vehicles fuelled with electricity from renewable sources as a key strategy for significantly reducing carbon emissions and dependence on fossil fuels in the ACT and nationally.

ACT Electricity Feed-in Act

I support the purpose and aims of the *Electricity Feed-in (Renewable Energy Premium) Act 2008*:

The purpose of the Act is to provide the mechanisms required to encourage the uptake of renewable energy electricity generation.

Specifically, it aims to:

- *promote the generation of electricity from renewable energy sources*
- *reduce the ACT's contribution to human-induced climate change*
- *diversify the ACT's energy supply*
- *reduce the ACT's vulnerability to long-term price volatility in relation to fossil fuels.*

In developing a model for determining the premium rate for the feed-in tariff beyond 30 June 2010, I strongly encourage the Commission to take full account of the introduction of mass-produced battery electric vehicles to the ACT from 2011-2012.

Battery electric vehicles (BEVs) create a significant new class of demand for electricity generated from renewable sources:

- BEVs provide their own storage for variable-supply electrical energy sources (typically 10-35kWh per vehicle);
- the high energy efficiency of BEVs (typically 5-7 km/kWh) results in lower sensitivity to premium pricing for renewable energy (at 50c/kWh BEV direct energy costs are in the order of 5-10 cents per km, compared to 10-25 cents per km for liquid-fuelled vehicles)
- BEVs have demand-supply patterns that are (generally) complementary to other major uses of electricity for residential and commercial purposes;
- BEVs can operate as renewable energy generators when connected to the grid (Vehicle-To-Grid, 'V2G'), providing greater flexibility in the management of renewable electricity supply to residential and commercial consumers.

On 24 July 2009 Better Place Australia announced that Canberra had been chosen as the site for its first city-wide rollout of electric vehicle infrastructure in Australia. The rollout will be undertaken in partnership with ActewAGL, and is scheduled for completion by 2012. The Better Place model is based on the acquisition and supply of renewable energy to achieve zero emissions at both the vehicle 'point-of-use' and the energy source.

Other suppliers are also entering the EV infrastructure/services market, and it is anticipated that this will enable increasingly rapid transition to battery electric vehicle fleets on a large scale within the next few years

It is expected that over 40 new BEV models will be available globally by 2012, with 10 or more of these being available in Australia. Limited production BEVs are already available from Australian suppliers, and Mitsubishi Australia expects to release the first mass-production BEV in Australia in mid-2010.

While the initial purchase price of BEVs is currently high (reflecting the high cost of batteries), BEVs are already close to price-neutral with conventional fossil-fuelled vehicles on a whole-of-life cost basis.

Battery exchange systems such as those adopted by Better Place Australia and Renault remove the battery cost from the initial vehicle purchase, and amortise it over the life of the vehicle. Early indications are that this approach could make BEVs directly price competitive with conventional fossil-fuelled vehicles as early as 2012.

In March 2009 the ACT vehicle fleet was comprised of 208,496 passenger vehicles and 22,882 light commercial vehicles. Growth rate is around 2.3% per annum, resulting in projected fleet sizes of 240,000 passenger vehicles and 26,300 light commercial vehicles by 2015.

While it is difficult to predict accurately, it is conceivable that the ACT BEV fleet could be in the order of 3,000-5,000 passenger vehicles and 300-500 light commercial vehicles by 2015. This would create additional new demand for renewable energy in the order of 10,000,000 kWh per annum, roughly equivalent to the output of 3,000 rooftop solar PV generators (typically 1.5kW-2.0kW) – more than 3 times the ACT's current installed capacity (905 generators at September 2009).

I recommend that:

1. comprehensive modelling of the effects of battery electric vehicles on the demand and supply for electricity produced from renewable sources be undertaken as a key input to the development of a model *for determining the 'premium rate' for the feed-in tariff to apply for the period 1 July 2010 to 30 June 2011, and a mechanism to adjust the rate for the following four years;*
2. if comprehensive modelling of BEV impacts cannot be undertaken within the timeframe of the current investigation, the existing pricing model for the premium rate feed-in tariff should be maintained for a further 12 months (1 July 2010 – 30 June 2011).

Other initiatives to reduce emissions in the ACT

I note the other initiatives to reduce carbon emissions in the ACT and nationally.

I strongly support the adoption of electric vehicles fuelled with electricity from renewable sources as a key strategy for significantly reducing carbon emissions and dependence on fossil fuels, both in the ACT and nationally.

It is estimated that the substitution of battery electric vehicles fuelled with electricity from renewable sources for conventional fossil-fuelled vehicles could achieve the following benefits:

- annual reduction in CO2 emissions: 5,000-7,000 tonnes per 1,000 vehicles
- annual reduction in fossil fuel consumption: 1.5-2.5 million litres per 1,000 vehicles

By 2015 this could equate to:

- annual reduction in ACT CO2 emissions: 17,000-35,000 tonnes
- annual reduction in ACT fossil fuel consumption: 5-10 million litres

By 2020 this could equate to:

- annual reduction in ACT CO2 emissions: 100,000-200,000 tonnes
- annual reduction in ACT fossil fuel consumption: 30-60 million litres

I will review the Commission's Draft Report when it is released in late January 2010, and expect to make a further submission in response to the Draft Report.

I am available to meet with the Commission to provide further input if required.

Sincerely,

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