Response to questions on notice and transcript amendment recommendations to the Senate Select Committee Inquiry into the performance and management of electricity network companies

4 March 2015

Purpose

As Victorian electricity distributors, Ausnet Services, CitiPower, Jemena Electricity Networks and Powercor Australia are appreciative of the opportunity to respond to the questions taken on notice and transcript Senate Select Committee Inquiry hearing into the performance and management of electricity network companies (the **Inquiry**).

Our response detailed below is supplementary to our combined Victorian DB submission and the evidence we presented to the Inquiry at the Melbourne hearing. The questions on notice, as identified from the transcript, summarised as follows:

- Quantifying typical electricity network line losses
- Clarification regarding South Australian network's relative efficiency in comparison to other states
- Clarification regarding carbon tax estimates referred to in the Vic DB submission

We also recommend a number of amendments to the hearing transcript, which are noted as marked up changes in Attachment 1.

We trust these answers meet your requirements and would be pleased to provide any further detail as you see fit.

Quantifying typical electricity network line losses

A report[1] commissioned by the former Federal Department of Resources, Energy and Tourism's in May 2013 provides the following estimates of typical transmission and distribution network line losses in Australia:

"The Australian weighted average of transmission losses average for 2006-07 to 2011-12 is 2.7% of electricity inputs, which is approximately 5,800 GWh (20.8 PJ). Losses ranged from 2.9% in Queensland to 1.1% in the Northern Territory.

For distribution networks, the Australian weighted average loss for 2008-09 to 2010-11 was 5.4% of inputs, which is approximately 9,300 GWh p.a. (33.6 PJ). Losses for individual networks ranged from 3.7% to 9.1%."

Victorian distribution network losses typically range from around 3% to 8% of total electricity sales - highly urban networks are at the lower end of this range, while highly rural networks are at the upper end.

[1] Energy efficiency opportunities in electricity networks, Energeia - http://ris.dpmc.gov.au/files/2013/07/EEO-to-energy-networks-attachment-1-RIS.pdf

Clarification regarding South Australian network's relative efficiency comparison to other states

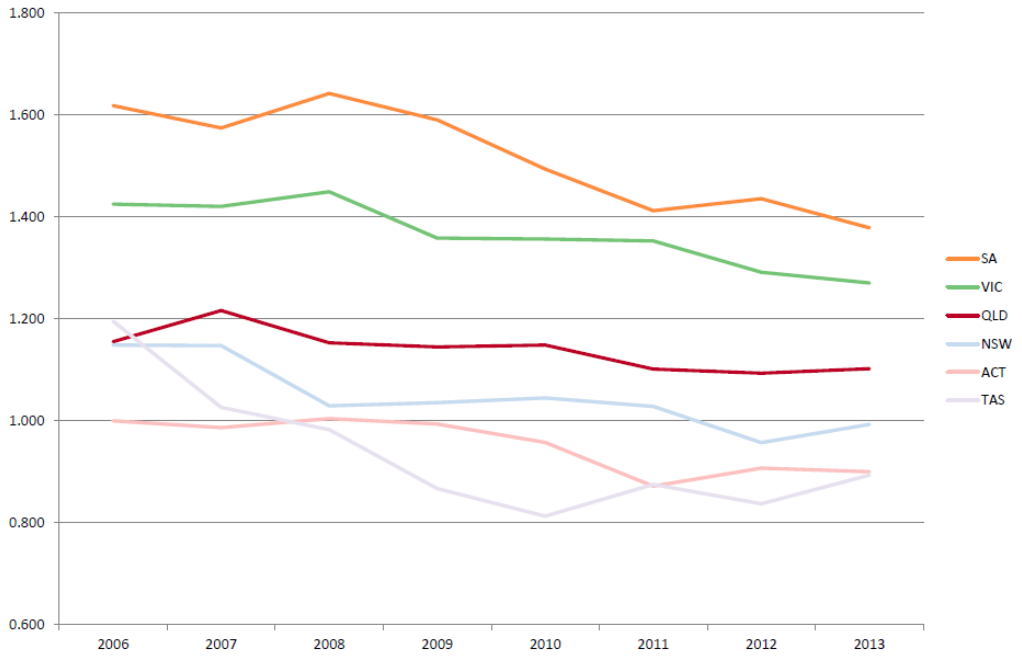
The following observation made in our opening statement was queried by Senator Ruston at the hearing: "… nonetheless the Victorian distributors and the South Australians remain the most efficient networks."

While we are obviously best placed to comment on the relative performance of Victorian networks, as owners and operators of these assets, our views regarding South Australian networks are based upon state-wide multilateral total factor productivity analysis undertaken by the Australian Energy Regulator (AER) and recent pricing analysis by Ernst and Young (EY).

The AER recently analysed the relative efficiency of distribution networks throughout Australia[2]. This analysis takes into account key characteristics of each distributor, and how their productivity compares at the aggregate level and for the outputs they deliver to consumers.

Figure 1 shows the state-wide results from the AER applying the multilateral total factor productivity (MTFP) benchmarking technique. Figure X does indicate that both Victoria and South Australia have a higher level of productivity, hence are more economically efficient, than other states based upon the factors analysed.

Figure 1 – State-wide multilateral total factor productivity



Source: AER

[2] Electricity distribution network service providers: Annual benchmarking report, AER - http://www.aer.gov.au/sites/default/files/2014%20Annual%20distribution%20benchmarking%20report%20-%20November%202014_0_0.pdf

Figures 2 and 3 provide other indicators of efficient performance by Victorian and South Australian electricity distribution networks in comparison to other states, in recent analysis undertaken by EY[3].

Figure 2 highlights recent electricity network bill estimates for Victoria and South Australia that are much lower than Queensland and New South Wales.

Figure 2 – Typical annual retail residential electricity bill ($ per year, nominal terms)

	Government-owned		Privately-owned	
	NSW 1996-97 to 2012-13	Qld 1996-97 to 2012-13	Victoria 1996 to 2013	SA 1998-99 to 2010-11
Current electricity bill	$1,925	$1,547	$1,495	$1,481
Electricity bill in 1996/1998	$745	$615	$752	$821
Increase in electricity bill	$1,180	$932	$743	$660
Current network bill	$1,069	$836	$595	$636
Network bill in 1996/1998	$343	$217	$368	$501
Increase in network bill	$726	$619	$227	$135

Source: EY

Figure 3 below, shows that Victoria and South Australia, have also demonstrated efficiency relative to New South Wales and Queensland, by decreasing their network charges in real terms over the period between the late 1990s and the early parts of the current decade.

Figure 3 – Long term change in average annual residential electricity prices (%)

	Government-owned		Privately-owned	
	NSW 1996-97 to 2012-13	Qld 1996-97 to 2012-13	Victoria 1996 to 2013	SA 1998-99 to 2010-11
Retail electricity prices	+83%	+57%	+28%	+23%
Network prices	+122%	+140%	-18%	-17%
Non-network costs plus other costs*	+51%	+11%	+72%	+86%

Source: EY

[3] Electricity network services: Long-term trends in prices and costs, EY - https://www.nsw.gov.au/sites/default/files/miscellaneous/electricity_network_services.pdf

Clarification regarding carbon tax estimates referred to in the Vic DB submission

The Oakley Greenwood (OG) '*Causes of residential electricity bill changes in Victoria, 1995 to 2014*' report included with our submission to the Inquiry calculates the amount of carbon tax included for the most common tariff (single rate without off peak electric water heating), and average annual consumption (4000 kWh), in Victoria. The following excerpt from the report describes the methodology used by Oakley Greenwood (pg 18 Appendix A.3) to estimate the carbon tax amount:

"The carbon price first came into effect in July 2012. For the 2012 calendar year, the cost of the carbon price in an average residential bill is based on the sum of total emissions in the Victorian region between 1 July 2012 and 31 December 2012, multiplied by the applicable carbon price of $23 per tonne. This total dollar figure (converted to $2014) was then divided through by the total amount of energy sent out in the Victorian region across the entire year (adjusted for an estimate of losses). This average per-MWh carbon cost has been multiplied by the average residential consumption used throughout other parts of this assignment. A similar process has been adopted for 2013 and 2014, except that for 2014, the impact of the carbon price ceases as at 30 June, 2014. The annual carbon price was then applied to the average residential consumption used throughout the remainder of this assignment. Total emissions have been derived from published AEMO data (http://www.aemo.com.au/Electricity/Settlements/Carbon-Dioxide-Equivalent-Intensity-Index), namely, the Carbon Dioxide Equivalent Intensity Index (CDEII), which combines sent-out metering data with publicly available generator emission and efficiency data to provide a National Electricity Market-wide Carbon Dioxide Equivalent Intensity Index. It is calculated on a daily basis under a formal framework contained within the National Electricity Rules."

The Federal Government's public reference to an average family being better off by $550 in 2014-15 due to the carbon tax removal is not comparable to the OG 2014 carbon tax estimate of $62. As we understand it the Federal Government's estimate is based on Treasury forecasts done in 2011, hence accounts for:

- carbon tax price impacts on an extensive list household expenditure items[4] – while the OG analysis specifically estimates electricity sector carbon tax impacts only
- carbon tax impacts for a full year - while the OG analysis reflects 6 months of carbon tax given the removal of the carbon tax in July 2014
- national average levels of residential electricity consumption – while the OG analysis reflects a much lower typical household electricity consumption in Victoria (due to water heating being served predominantly by gas, unlike other states)

[4] The impact of a carbon price on household expenditure as modelled by Treasury for the Clean Energy Future Package announced on 10 July 2011 by the Government, Department of Treasury - http://archive.treasury.gov.au/documents/2118/PDF/Modelling_carbon_price_household.pdf