



EMBASSY OF AUSTRALIA
WASHINGTON DC

AMBASSADOR

6 January 2012

Mr Steven Polunsky
Director
Texas Senate Committee on Business and Commerce
The Texas Senate
PO Box 12068
SHB 370
Austin, TX 78711

Dear Mr Polunsky,

I am responding to your request for information about lessons learned in placing electric generation facilities along Australia's coast as a result of drought.

In Australia's experience, drought reduced the generating ability of both hydro and coal-fired plants that relied on fresh water. This reduced generating ability affected the electricity market in terms of system security and price.

Impacts of reduced water availability in Australia

The drought did not lead to an energy shortage, but a capacity shortage. Australia had a sufficient number of power stations and turbines, however some of them could not operate, or were severely restricted, due to water shortages. The impact varied from generator to generator, and between technologies. Hydro power stations were most affected, followed by fresh water-cooled coal-fired power stations. Gas and air or seawater-cooled coal power stations were not affected at all.

The primary impact of reduced water availability was on the price of electricity. Electricity previously provided by cheaper generators, such as freshwater dependent thermal and hydro generators, was being provided by generators with a higher cost base, such as gas-fired generation.

Lessons learned

Australia had a number of responses to the impacts of the drought on electricity generation. Within the National Electricity Market (NEM), there was a slight switch towards higher cost generation, predominantly gas-fired generation. In addition, some generators in the NEM began retrofitting existing plants to improve water use efficiency and/or source alternative water supplies, such as sea water, lower quality water or treated water.

A key factor in the market's ability to respond to the drought was the availability of timely and relevant information. It was important that information, including on water allocations and planned government actions to supply alternative water supplies, was made available to all market participants and potential investors as soon as possible. This information was an important investment signal to industry, both in terms of new generation and retro-fitting existing plants.

Recognising that the drought impact on bulk electricity supplies was subject to changing weather and electricity demand conditions, the National Electricity Market Management Company ((NEMMCO), now Australian Energy Market Operator (AEMO)) was asked to provide quarterly updates referred to as the Drought Scenarios Investigation reports.

The Drought Scenarios Investigation reports were started in 2007 and analysed annual unserved energy (USE) data for each region for each month and compared this with the previous quarter to assess the supply reliability of the NEM. USE is defined as the amount of electricity demand that may not be met by the generation capacity of the system in a specific region. The Australian Energy Market Commission sets a Reliability Standard that no more than 0.002 per cent of each region's energy demand should be unserved due to supply shortfalls. The Drought Scenarios Investigation report required generators to provide supply information for three scenarios across a two year study period, the three scenarios were: low rainfall, short term average rainfall and long term average rainfall.

The Australian Government's view on electricity market reform is that the market remains the primary mechanism for responding to changes in the supply/demand balance and energy constraint issues, including those arising from the drought.

In addition to the comments above, I am also including the following documents:

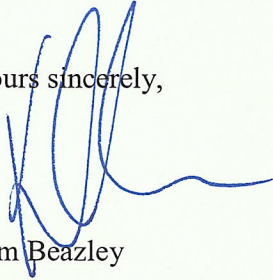
1. Water and the Electricity Generation Industry: Implications of Use, by Alan Smart and Adam Aspinall. This report was produced by the National Water Commission and the Australian Government Department of Resources, Energy and Tourism. The report was produced as a result of the drought, its impact on generation and ongoing water reform. The report examined the impact of changed water availability on the electricity generation industry with consideration of future water management options and needs for planning and investment strategies for the industry.
2. Potential Drought Impact on Electricity Supplies in the NEM. In December 2006, the former NEMMCO (now AEMO) was tasked by the former Ministerial Council on Energy (now the Standing Council on Energy and Resources) Standing Committee of Officials with preparing this report. Its purpose was to provide information to market participants.
3. AEMO Energy Adequacy Assessment Projection (EAAP) September 2011 Report. In 2010, AEMO's quarterly Energy Adequacy Assessment Projection (EAAP) reports replaced the Drought Scenarios Investigation reports. As was the case with the drought reports, the EAAP is a projection of AEMO's assessment of energy availability that accounts for energy constraints for each month over a 24 month period. The energy availability is measured in USE for each NEM region, as USE is the key indicator of energy adequacy in the NEM. Further detail, as

well as historical EAAP's can be accessed at the following website:
<http://www.aemo.com.au/electricityops/eaap.html>.

4. Chapter 8 on Hydro Energy from the July 2010 Australian Bureau of Agriculture and Resources Economics and Sciences (ABARES) Report on "Australian Energy Resource Assessment".

I hope the information provided will be of assistance to you as your committee assesses the impact of current and anticipated drought conditions on electric generation capacity in Texas.

Yours sincerely,



Kim Beazley