



Ms Anne Lane  
Chair  
Conference of Leaders of Religious Institutes NSW  
PO Box 259  
ROSEBERY NSW 1445

Dear Ms Lane

I refer to your letter to the Deputy Prime Minister, the Hon Barnaby Joyce MP, about the electricity blackout in South Australia on 28 September 2016. The Deputy Prime Minister has forwarded your letter to the Minister for the Environment and Energy, the Hon Josh Frydenberg MP, seeking his advice. The Minister has passed your letter to me for reply.

Based on the best available information, the Australian Energy Market Operator (AEMO) concluded in their interim report on 19 October that the blackout was caused by extreme weather. This resulted in five system faults on the SA transmission system and the loss of three transmission lines. The transmission faults started a cascading event that resulted in all remaining customers and generators losing power.

While the blackout was caused by extreme weather as noted in your letter and above, it has highlighted the importance of energy security. The Australian Government is working with state and territory governments to maintain and prioritise energy security, while meeting national commitments to reduce emissions.

Renewable energy will play an important role in the transition to a lower emissions economy. The electricity sector accounts for around a third of Australia's emissions. As such, it will not be possible to meet Australia's national climate targets without reducing emissions from the electricity sector. Around 14 per cent of our energy is currently sourced from renewable generation, and the Australian Government has put in place a legislated target of 23.5 per cent of renewables by 2020. However, increasing the share of intermittent renewable generation (such as solar panels and wind turbines) in our generation mix poses two significant challenges for energy security.

Firstly, intermittent generation sources do not generate electricity consistently. In South Australia, for example, wind output varied between supplying 80 per cent of demand on one day in July to less than one per cent only a month earlier.

Secondly, unlike hydro, gas and coal (generally known as baseload generation), intermittent generation does not generate a consistent quality of generation. Wind and solar are presently limited in their ability to resist rapid changes in frequency or respond to sudden large changes in electricity supply or consumption. Baseload generators help maintain system security by ensuring the frequency of the system is maintained at the necessary 50 hertz, and by producing sufficient inertia to enable the system to cope with sudden shocks.

In an independent report prepared for the Council of Australian Governments Energy Council (the Council), the Australian Energy Market Operator (AEMO) identified four primary challenges to maintaining power system security with an increasing share of intermittent generation, including:

- frequency control;
- management of extreme power system conditions;
- visibility of the power system; and,
- system strength.

If these challenges are not addressed, the risk of blackouts may increase as the share of intermittent generation rises. These issues are currently most acute in South Australia due to its high reliance on wind and solar.

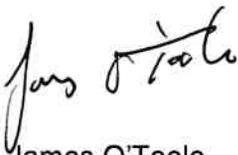
In recent months, the Council, which Minister Frydenberg chairs, has met twice to consider how to respond to the challenges of the transition of the electricity sector. At the August 2016 meeting, ministers agreed a number of reforms for the gas market to improve pricing, liquidity and the transparency in the gas market. These reforms are important given the role gas can play as a transition fuel – providing the flexibility to balance intermittent generation, and with at least 50 per cent fewer emissions than coal. The Council also initiated work to investigate the impact of state-based renewable energy targets on the National Electricity Market, and to consider the appropriateness of the current regulations governing interconnector investment.

Following the South Australian blackout, Minister Frydenberg called an extraordinary meeting of the Council on 7 October 2016. At that meeting, ministers agreed their primary responsibility is to energy security, energy stability and energy affordability. To help deliver on this responsibility, the Council agreed to the development of a blueprint for energy security across the National Electricity Market, led by Dr Alan Finkel AO, Australia's Chief Scientist.

**The blueprint will draw upon work being undertaken by the AEMO, the Australian Energy Market Commission, the Australian Energy Regulator and other expert bodies. It is intended to set out a path to meeting Australia's climate change goals, while ensuring energy security and the affordability of the system are maintained during the transition.**

Thank you for writing on this matter.

Yours sincerely



James O'Toole  
Assistant Secretary  
Electricity Branch

18 November 2016