

This submission aims to address the issues for discussion identified in '*Discussion Paper 1: Australia's Future Infrastructure Requirements*'.

1. What Infrastructure is being considered?

AGEA believes that Infrastructure Australia needs to examine the current state of the national electricity generation and transmission infrastructure. This needs to occur in light of the capability of that infrastructure to generate and deliver emissions free and low emissions electricity in line with the targets yet to be set in the Commonwealth's Carbon Pollution Reduction Scheme (CPRS) , possible future targets and the 20% Renewable Energy Target (RET).

2. Why is this Infrastructure Important?

The Australian Government has been in negotiation with other national governments as a member of the Conference of Parties leading up to the Kyoto Protocol for many years. Australia has ratified the Protocol and has a current commitment to reduce its emissions to eight per cent above 1990 emissions levels by 2012, the end of the first commitment period. Australia is in negotiations with other national governments to reduce emissions further in line with increasing scientific evidence of the need to do so on a global basis.

Electricity generation is Australia's single largest source of greenhouse gas emissions and the capacity to generate and deliver clean energy is one of our greatest national challenges in meeting future reduction targets.

3. What are the Problems?

At present the national generation infrastructure stock is currently dominated by fossil fuel generation, particularly coal. The generation and transmission infrastructure is necessarily located in accordance with the location of the fossil fuel resources.

Australia's renewable energy sources are not necessarily located in the same areas and in some cases are located significant distances from current transmission infrastructure. Incremental additions of infrastructure to accommodate new generation projects may not produce the most cost effective overall response to this problem. An examination of the existing infrastructure in light of the large sources of renewable energy, in particular geothermal energy sources and the relatively low cost over time of producing electricity from geothermal sources needs to be conducted.

4. What are the Impacts of These Problems?

The current impact of these problems is that little or no investment will occur in transmission infrastructure to deliver electricity from geothermal sources. This may mean that higher cost, imported technologies will be deployed under current policy measures including the RET in areas where the transmission infrastructure currently exists. This will place additional stress on the current transmission system and may mean that zero or low emissions technologies are constrained off and unable to access the market.

5. How did the Problem come about?

The issue of climate change has relatively recently been understood and the national generation and transmission infrastructure predate this development by decades.

6. How might these problems be addressed?

AGEA believes that the required changes to the operation of the National Electricity Market (NEM) and the rules relating to the investment in and ownership of transmission assets and the dispatch of zero and low emissions generation technologies will be highlighted in the Australian Energy Market's (AEMC's) review of the capability of the existing infrastructure to accommodate the CPRS and the RET.

AGEA believes that such an outcome is vital from this process if the national goals of the CPRS and the RET are to be met.

AGEA is keen to meet with Infrastructure Australia to discuss detailed changes to the operation of the NEM and rules relating to transmission infrastructure and to flesh out the transmission grid connection cost estimates that have been produced by a number of our member companies.