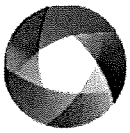

COAG
Energy Council
Senior Committee
of Officials

Mr Matt Zema
Managing Director and Chief Executive Officer
Australian Energy Market Operator
GPO Box 2008
MELBOURNE VICTORIA 3001

Mr John Pierce
Chair
Australian Energy Market Commission
PO Box A2449
SYDNEY SOUTH NSW 1235

MODELLING OF CARBON EMISSION REDUCTION SCENARIOS IN THE NATIONAL ELECTRICITY MARKET

Dear Mr Zema and Mr Pierce

I am writing to you in my capacity as the Chair of the Senior Committee of Officials (SCO) on behalf of the COAG Energy Council (the Council).

The Council discussed the interactions between energy and climate change policies in the National Electricity Market (NEM) during its meetings in 2015. The Council recognised the significant implications Australia's carbon reduction policies may have for the NEM and that the successful integration of carbon emissions policy and energy policy will be critical to meeting Australia's emissions reduction targets in the most efficient manner.

At its 4 December 2015 meeting, the Council agreed to task the Australian Energy Market Commission (AEMC) and the Australian Energy Market Operator (AEMO) with modelling the effect of carbon abatement mechanisms on the electricity sector. This is intended to assist the Council in future policy deliberations. This letter sets out the proposed terms for this work.

Secretariat
GPO Box 9839
Canberra ACT 2601
Telephone: (02) 6243 7788
energycouncil@industry.gov.au

I understand that a Power System Issues Technical Advisory Group has been established by AEMO, including representatives from SCO, the AEMC and industry groups, to advise on ongoing power system security matters associated with the changing generation mix in the NEM. The SCO welcomes this initiative given the Council's strong interest in ensuring market systems continue to keep pace with energy technology and policy changes. The SCO welcomes your consideration of how this group could be employed to further refine and advance the modelling tasks detailed below.

Task 1: Scenario modelling – NEM resilience

The modelling should reflect the firm commitment by the Australian Government, with the support of all NEM jurisdictions, that Australia will reduce its emissions by at least 26 to 28 per cent compared with 2005 levels by 2030.

While carbon reduction targets are set at the national level on an economy wide basis, the Council has agreed that the contribution of the electricity sector be consistent with national targets, while acknowledging that it may be economically efficient for the electricity generation sector to make a greater than pro-rata contribution. To clarify this, SCO officials have agreed that a 28 per cent reduction from 2005 levels by 2030 is an appropriate constraint for the AEMC to adopt for its modelling purposes and for AEMO to use in its ongoing forecasting and planning processes. Noting this is the high end of the national target range and may be subject to future upward revision as international agreements develop over time, AEMC may also model higher levels of abatement in the NEM in order to test the sensitivity of the modelling results and to strengthen the modelling of power system security and reliability to be conducted under Task 2.

The Council understands that AEMO has already commenced work on its forecasting and planning processes for 2016 and will base those on achieving the target 28 per cent abatement using AEMO's existing modelling tools.

The AEMC is requested to develop a series of scenarios setting out alternative pathways for achieving a 28 per cent emission reduction target in the NEM, including:

- least cost abatement;
- staged generator exit, whereby generators withdraw from the market on the

Secretariat
GPO Box 9839
Canberra ACT 2601
Telephone: (02) 6243 7788
energycouncil@industry.gov.au

basis of their emissions intensity or publicly notified retirement dates; and

- accelerated deployment of renewable energy, whereby solar and wind energy is pushed into the market by economic or policy drivers.

The output of this modelling is a report to SCO outlining a number of pathways to achieve the 28 per cent emission reduction target in the NEM. The approaches should be assessed and considered in terms of their impacts on efficient outcomes and their ability to ensure that:

- wholesale markets continue to provide appropriate incentives to ensure supply and demand balances across the NEM;
- wholesale markets are liquid and provide opportunities for long term contracting by market participants; and
- appropriate frameworks and incentives are in place for network investment and investment in energy storage.

Outcomes from this modelling are also required to allow AEMO to test the operational power system security and reliability implications of each of the scenarios. The AEMC and AEMO will need to co-ordinate on the specification of the relevant information; however it is expected to include such things as a range of plant mix and location, dispatch outcomes, investment and retirement profiles (task 2 outlined below).

Task 2: Power system security and reliability testing

This task, to be undertaken by AEMO and drawing upon its routine planning work and the work of the AEMC in the first task, is to provide robust stress testing of market rules and systems, as they apply to the generation and transmission sectors for power system security and reliability. This is intended to ensure that AEMO, AEMC, AER and the Council are able to identify the developments required to ensure the NEM continues to function and contribute efficiently in the broader economy wide transition to a low emissions future including in relation to current national emission reduction targets. Of particular concern is the performance of the NEM in ensuring that:

- services, such as system inertia and frequency control, remain adequate to meet appropriate standards; and
- network and interregional constraints do not impede secure and efficient national market operation.

Secretariat
GPO Box 9839
Canberra ACT 2601
Telephone: (02) 6243 7788
energycouncil@industry.gov.au

This phase of the work will be undertaken using the AEMC's modelling from the first phase and used to identify rule changes that could aid in ensuring power system security and reliability under the range of abatement paths developed in Task 1. In doing so, and based on the scenarios developed in Task 1, it may be appropriate to test scenarios in which the NEM contributes a higher than pro-rata contribution to the national emission reduction effort.

SCO understands that Task 2 will be done in parallel and in conjunction with AEMO's normal functions of preparing information to the market based on its scenarios such as:

- the National Electricity Forecasting Report (NEFR);
- the Electricity Statement of Opportunities (ESOO); and
- the National Transmission Development Plan (NTNDP).

The Council requests an interim progress report on this task by mid-2016 and the final report by the end of 2016.

Yours sincerely

Dr Steven Kennedy
Chair
COAG Energy Council Senior Committee of Officials
18 February 2016

Secretariat
GPO Box 9839
Canberra ACT 2601
Telephone: (02) 6243 7788
energycouncil@industry.gov.au