Australian Energy Market Commission
Level 5 201 Elizabeth Street Sydney NSW 2000
PO Box A2449 Sydney South NSW 1235
P — 02 8296 7800
F — 02 8296 7899
E — aemc@aemc.gov.au
ABN 49 236 270 144
www.aemc.gov.au

Dr Martin Parkinson
Secretary
Department of Climate Change
GPO Box 854
Canberra ACT 2601

4 December 2008

Dear Dr Parkinson

Carbon Pollution Reduction Scheme and National Electricity Market (NEM) risks

I refer to your letter of 2 December 2008 requesting qualitative advice on the energy security implications of potential outcomes on CPRS policy design. I note that that the policy options you set out are not an agreed set of policy positions from Government. I note that you have also requested advice on this matter from NEMMCO and the Australian Energy Regulator.

Scope

The advice in this letter focuses on the NEM. We do not comment on matters relating to Western Australia or the Northern Territory, or matters relating to gas markets. Our views in respect of the NEM, however, extend more widely than the specific issue of the reliability of electricity supplies. The Australian Energy Market Commission (AEMC) is required under the National Electricity Law (NEL) to have regard to the National Electricity Objective (NEO) in undertaking any of its functions. The NEO highlights the joint goals of efficiency, security and reliability – and this is the perspective we bring to this advice. We have interpreted your letter as seeking advice in respect of three separate issues:

- First, how the cited potential outcomes on CPRS policy design might incrementally alter the risk of unserved energy in the NEM due of a shortfall of generation capacity;
- Second, how conditional financial assistance to existing carbon-intensive generators might impact on reliability and efficiency in the NEM, assuming that any conditions take the forms outlined; and
- Third, what contribution the current AEMC review of energy market frameworks might make to the ongoing mitigation of any perceived reliability risks in the NEM.

Context

The advice in this letter needs to be understood in context. The NEM works to a desired annual average reliability standard of 0.002% of un-served energy. This requires adequate generation capacity to be in place, and sufficient transmission capacity, to match supply and demand at times of highest demand under a range of credible contingencies. A shortfall in generation capacity is one potential cause of un-served energy.

An important barometer of the market's performance against this standard (in terms of available reserves of generation capacity) is the annual Statement of Opportunties (SOO) published by

NEMMCO. The 2008 SOO highlighted tight reserve levels in Victoria, South Australia and Tasmania. While NEMMCO concluded that the position was not sufficient to warrant exercising its ability to intervene in the market to procure additional reserves for this Summer, the situation was tight enough to require the question to be asked. We understand that this situation is likely to continue for a further two years before planned new generation investment in Victoria is delivered.

Another barometer of the prevailing tight supply situation is the pre-CPRS recommendation of the Reliability Panel to increase the maximum market price from $10,000 to $12,5000 per MWh with effect from July 2010 as a means of ensuring that the required market investment in new generation capacity consistent with the 0.002% standard is economically viable.

In summary, therefore, the background to an assessment of incremental changes to reliability risks is a 'business-as-usual' risk which is relatively high by historic standards in the NEM.

Issue 1 – Policy options and NEM risks

We make the following observations about the generic risks relating to reliability in the context of CPRS. This draws on qualitative analysis undertaken jointly by the AEMC, AER and NEMMCO at the request of the Ministerial Council on Energy (MCE). We then reflect on how these risks might be conditioned by the policy outcomes on CPRS design cited in your letter.

- Reliability risks would be exacerbated if policy triggered early exit of existing plant. This is because it creates an exposure to the risk of replacement plant not being there in time. There are significant time lags involved in building new generation capacity. A minimum of three years for the most straightforward project. The risk is heightened, other things being equal, if reserves are already tight as is the case in Victoria and South Australia;

- Exit decisions will be driven by expectations of profitable operation given the returns required by investors – and the willingness of investors to provide finance (both debt and equity) at those expected returns. A carbon price will increase absolute costs for all fossil-fuel generators, and increase relative costs for the more carbon-intensive fossil-fuel generators. These factors will reduce future profitability of carbon-intensive generators, and therefore the value of the underlying assets.

- Prices in spot and contract markets for wholesale electricity are important determinants of profitability. If generation capacity is scarce, then we would expect this to be reflected in higher prices. Other things being equal, this would be expected to deter early exit. However, there is a risk that acute and rapid financial distress might trigger unexpected outcomes associated with the availability (as opposed to the price) of finance. While this could be characterized as capital market failure, such an outcome cannot be ruled out in the current global environment in credit markets;

- There is also a 'Business-as-Usual' risk of technical failure at a unit of an existing plant. If the plant type has only a short term future as a result of the CPRS (e.g. it is brown coal), then investment is unlikely to be forthcoming to get it back into service. Further, the credit crunch makes it even less likely for such investment to be viable. The risk of technical failure at a unit increases if the unit is being required to vary its output more frequently, rather than run base-load.

In this context, we make the following comments about the policy options:

- A carbon price of $20 rising to $35 by 2020 is unlikely to trigger a rapid shift in the merit order. This is more consistent with a smooth transition of new investment into the market – and the exit of older, carbon-intensive plant. Hence the risk of acute financial distress, and unexpected operational outcomes resulting from any subsequent 'work out', is reduced relative to scenarios with higher initial carbon prices.

- The risk of acute and rapid financial distress is significantly reduced by an exogenous contribution to capital of $3.9 billion, targeting on the most carbon-intensive plant. It is also worth noting that the plant that would benefit most are in the regions where existing reserves are tightest;

- The risk of technical failure remains – as does the expectation that significant new remedial investment in coal-fired generation plant would not be financially viable. However, the risk of technical failure is reduced if plant can continue to operate base-load. This risk will not be addressed by CPRS policy (or the AEMC review of energy market frameworks).

We think that the risk of reserve shortfall due to early exit of existing capacity is alleviated by a lower carbon price, but at a $20 carbon price, the risk is still evident. Absent further measures, a $20 carbon price would imply a significant financial impairment of the most carbon-intensive generators – and this could trigger financial distress, with uncertain outcomes in the current global environment in financial markets. Clearly, if the current 'tightness' in credit markets was short-lived, then this risk would be reduced further. However, measures to provide additional financial assistance to generators of the form and quantum contemplated in your letter would reduce significantly the risk of immediate, acute financial distress – and, therefore, any consequential operational impacts such as the withdrawal of physical capacity.

Issue 2 – Conditionality

We make the following observations about financial assistance and the potential for conditions to be attached to such assistance.

- We strongly support the principle of allowing energy markets to operate without distortion. We understand that the primary rationale for assistance is to address perceptions of sovereign risk that might otherwise distort investment in the long term. Conditionality is not required for this purpose, and as you note might potentially detract from its effectiveness against this primary purpose;

- We see value in keeping the rules for remunerating services in the NEM within the Rules. This is consistent with good regulatory practice, and removes any risk of unintended interactions. Conditional assistance can be interpreted as remunerating a sub-set of generators for providing a 'service' to the market. In this context, we view conditionality as problematic in principle.

- However, the conditions described appear to represent minimal distortions to the efficient operation of the NEM. Neither of the models you cite would appear to distort the (carbon-adjusted) costs of production, and therefore the ability of the market to dispatch the (carbon-adjusted) least-cost generation remains intact. It also appears to be consistent with efficient longer-term decision making. In a well-functioning market, efficient entry will occur when the long-run marginal cost of the entrant is lower than the short-run marginal cost of the marginal incumbent. Conditions which do not distort the short-run marginal cost of incumbents do not, consequently, distort this broad dynamic for new entry.

- The 'light touch' conditions discussed in the letter would not appear to detract from the ability of generators to count any assistance as a contribution to capital – which would appear to be required to be consistent with the primary rationale for assistance. It should be noted, however, that this requires expert accounting advice to be confirmed.

- As a general principle, the market should operate with minimal intervention by the system operator – and with any interventions by the system operator being transparent and predictable. A regime of conditionality which required NEMMCO to exercise discretion will potentially muddy these waters somewhat.

We think, therefore, that conditional assistance of the form contemplated in your letter would provide negligible additional benefits in respect of mitigating risks associated with reliability (relative to unconditional assistance), but would also represent a relatively immaterial distortion to the efficient operation of the NEM.

Issue 3 – AEMC review of energy market frameworks

On the relationship between the AEMC's current review of energy market frameworks and the potential policy outcomes on CPRS design, we make the following points.

- The AEMC review will provide advice to MCE Ministers in September 2009. The AEMC does not have the ability to give effect to its recommendations directly.

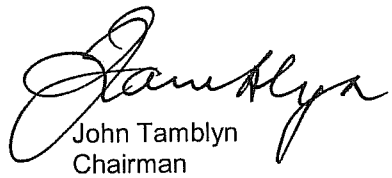
- The Review is examining the question of whether the current energy market frameworks are capable of supporting the NEO, given the behavioural changes in the market driven by CPRS and RET. The final form of the CPRS will influence what 'credible yet demanding' scenarios the NEM Rules will need to be resilient to. In this sense, the Review complements and supports the delivery of CPRS policy – as it is intended to do.

- The Review is considering, among other matters, the ability of energy market frameworks to support reliability in the short and long-term. To the extent that we identify a material issue – and a solution that can be delivered through amending energy market frameworks – then we will provide recommendations for change. For example, we will be considering the range of tools available to NEMMCO to intervene in the short term if there is a reserve shortfall.

We note that the AEMC review is unlikely to deliver actual change to energy market frameworks until late 2009 at the earliest. We also note that the focus of the review is on the long term resilience of energy market frameworks to broad adjustments in behaviour driven by the CPRS and 20% RET – and not the short-term management of specific risks. However, in terms of scope, it is important to note that the review is examining the robustness of the current regime of short-term intervention by NEMMCO in the presence of reserve shortfalls. This encompasses NEMMCO's powers of direction, and its ability to contract for additional reserves with 9 months of any perceived material reserve shortfall.

I hope this is helpful. I have provided this advice on the basis that it will be published. I would encourage you to do so.

Yours sincerely



John Tamblyn
Chairman