



28 September 2007

Dr John Tamblyn,
Chairman
Australian Energy Market Commission
PO Box H166
Australia Square
NSW 1215



Dear John,

Supplementary submission on Central Dispatch and Integration of Wind and Other Intermittent Generation

Auswind is conscious of the late nature of this submission, however it is important that industry quantify the costs that it believes are involved in this rule change. These costs are not insignificant and will cause a number of wind projects to be unviable.

Since the submission in July, Auswind has merged with the Business Council of Sustainable Energy to form the Clean Energy Council. The newly formed organization represents a membership of over 350 businesses, covers all forms of renewable energy, gas fired energy and energy efficiency initiatives. The electricity production including gas, wind, hydro and bioenergy; and the spectrum of business in the low-emission energy and energy efficiency sectors including PV solar, solar hot water, biomass, geothermal and cogeneration.

We hope that this supplementary submission is helpful and can be considered. Please contact Kate Summers for further information on (03) 9615 6442.

Yours sincerely

(Signature withheld for publication)

For and on behalf of
Dominique La Fontaine
CEO
Clean Energy Council

Supplementary Submission – Clean Energy Council

The Clean Energy Council¹ (CEC) has significant concerns with the proposed rule change for the integration of renewable intermittent generation into the NEM market dispatch process via the “semi-scheduled” rule change.

Preparing this supplementary submission and following discussion with various stakeholders it is evident to us that the rule proposal would be more efficient and cost effective if it were simplified. Little evidence is provided that a substantial concern exists, and the problem that has been identified, in the South East of South Australia, will not be captured in this change.

The industry is concerned with the cost burden of implementing the rules as they are proposed, particularly concerning the content of a dispatch instruction. The rules create a significant barrier to entry by requiring development of facilities to manage a rare event, and for those facilities to be operational at all times. Larger, existing market participants, with the relevant facilities, are also favoured in the proposal.

NEMMCO’s proposal for a complicated and mandatory scheme does not examine the costs to participants and therefore is incomplete. Without an assessment of the implementation costs and an assessment of the materiality of the problem to be solved it is impossible to correctly assess the change against the market objective.

The proposed rules have included semi-scheduled generators into many of the chapter 4 obligations which has broadened the scope of the dispatch instruction and the semi-scheduling beyond that discussed in the WETAG and previously indicated to participants. It seems unfortunate that the rule proposal appears to have failed to re-examine chapter 4 in light of the intermittent energy source that it is endeavouring to control. CEC recommend simplifying the rules so that they are re-drafted (in areas) around intermittent generating units.

Cost of the proposed approach

The current proposal requires operational shift control of wind farms. To establish such a system, from start up for a company that currently does not have a full operational control room or market systems in place, we estimate a cost of at least: \$1Million upfront and \$1.2Million on an ongoing basis. These costs do not include lease of appropriate control room facilities which would increase the costs, nor the ongoing communications.

Cost of an alternative, simplified approach

CEC suggested the rules be altered to clarify the ability to run an automated bid/rebid system and limit the control requirement to active power only. The implementation costs for an automated system are estimated as being at least \$800k upfront and \$415k ongoing. These costs assume an increase to on-call personnel, a market analyst, the IT and market systems associated with managing the control and bidding of a wind farm.

Materiality

CEC is concerned that NEMMCO has not adequately justified the materiality of the constraint problem, nor demonstrated how this will be efficient for the market. The cost burden will make many distributed generation projects unviable, the 30 MW limit ought to be lifted to recognise the intermittency of the energy source. The reality of

¹ Auswind has now merged with the Business Council of Sustainable Energy to form the Clean Energy Council.

the mathematics that drives the dispatch engine means that many generators are unlikely to have a coefficient large enough to be included in a constraint equation, yet the obligation to bid and be in dispatch is not questioned. The requirement places an overhead for near or at zero dollar short run marginal cost energy that is questionable.

There is an implicit assumption in the NEMMCO papers that the current network flow limits and the quantity and amount of FCAS are “correct” and that any change from this is inefficient and will lead problems with both security and prices. For example NEMMCO has periodically reduced the amount of Regulation FCAS in a downward manner until it reached a problem period with hot water load increases. It then increased the amount for the duration of the hot water peak. Hence, the current figures have been built up from experience over a number years taking into account the history and experience in forecasting customer demand and thermal generator performance (including FCAS capability).

NEMMCO have indicated that increases in variable generation may constrain networks and potentially push them into insecure operating states, however the CEC does not believe that NEMMCO has demonstrated that the best option is to always have the ability to dispatch generation with a zero short-run marginal cost at a lower level and hence spill a non-storable fuel source (in the case of wind farms – spill wind). Other options such as using existing rules to manage access between participants, a larger operating margin on the network element or the dispatch of more FCAS were not evaluated to see if they would be more cost effective.

While the use of the wind forecasting system (AWEFS) is integral to the operation of the proposed semi-dispatch mechanism, no investigation has been undertaken on the possibility of the output from AWEFS being used to adjust network limits or FCAS requirements dynamically and allowing windfarms to continue to generate at their maximum capacity. This may prove to be a more economically attractive way of running the system in the long term

The obligation to bid, rebid along with the associated costs to ensure that the generator stays on occurs regardless of whether the generator is involved in a binding constraint equation. This will occur as a result of the price mechanisms in the market dispatch – it is not a function of a network security issue. This places the intermittent renewable energy into a situation where it must monitor and analyse the market regardless of the fact that it not competing to set the price but rather being a price taker.

One of the options considered by the working group early in the process was for the “semi-scheduled” status to only be triggered once the generator was “defined within any network constraint”. This meant that only generators whose control was likely to cause a material impact on the market outcomes would be semi-scheduled, and if an existing intermittent non-scheduled generator became a significant component of a constraint equation it would be given 12 months to develop the required systems and procedures to comply with semi-dispatch.

NEMMCO rejected this option as they didn’t believe that they would have the power to force a generator to re-apply for registration in a different category. CEC believes there is merit in re-considering this option as a means of ensuring that only generators that make a significant contribution to binding constraints bear the expenses of implementing the required systems. To avoid the issue about re-classification raised by NEMMCO, all large intermittent generators would be classified as semi-scheduled, but the key Rule clauses would only be triggered when

it has demonstrated that there is a demonstrable problem and the most economic way to manage the problem is via the dispatch system. In many cases, network solutions may be available to remove the constraint equation altogether.

Inclusion Size

The Auswind submission argued for consideration of the voltage level of the connection point be taken into account in the decision to require semi-scheduling. The CEC realise that there a number of large wind farms proposed with low voltage double circuit connections.

It may be that an increase to the proposed starting point of 30 MW would reduce the economies of scale concern associated with this rule. The technical standards for fault ride through in distribution areas used a cumulative affect (see clause S5.2.5.5 (c)(1)(ii)(A)), perhaps this is appropriate to address NEMMCO's concerns for the future. A cumulative rule would mean that when a particular volume has been reached within an area the project that causes the reversals of energy would wear the cost of being scheduled, this principal has been endorsed in the technical standards.

Whether or not a facility is required to be dispatched should depend on its potential impact on the network and market, not simply its size. The simplified proposal above would more efficiently determine whether a participant requires to go to the expense of developing these systems. Indeed, there has been talk of lifting the point at which any generator is required to be scheduled since many plant of that size do not impact the NEM as a whole.

While renewables are required to become a significant part of the energy system, as a matter of government policy there is no reason to impose unnecessary hurdles on intermittent generators. .

Externalities.

At a broader level as green house gas abatement policies operate independently of the NEM, the greater the cost imposed on delivering a renewable energy project the greater the cost of the abatement policies. These all contribute to end user cost under renewable energy targets. Although not directly related under the NEM objective this externality will drive up cost.

The rule change imposes an over-head by requiring a non-competing energy source (intermittent) to directly compete in the dispatch engine. The dispatch engine is designed to optimise value of trade through minimum cost dispatch. The fuel costs or short run marginal costs of electricity plant. Fundamentally requiring a free energy source (the wind) to compete at this level would appear contrary to common sense.

As we enter the era of a carbon constrained economy we will have to address the issue of carbon intensity figure in the NEM. So far in the last eight years of the NEM the carbon intensity factors per MW have been steadily climbing. The only significant adjustment to these figures has occurred when Tasmania joined the NEM.