



12 May 2005

Wind Energy Policy Working Group,  
c/- Office of Energy Planning and Conservation,  
GPO Box 936  
HOBART TAS 7001

By email to [rdgworkgroup@dier.tas.gov.au](mailto:rdgworkgroup@dier.tas.gov.au)

The NGF welcomes the opportunity to comment on the discussion paper, "Integrating Wind Farms into the National Electricity Market".

Whilst the NGF is broadly supportive of the recommendations of the above paper, it highlights the need for further discussion in most areas. In particular, work needs to be done to achieve closer consensus on the issues of managing network flows and provision of non-confidential wind-farm models.

The NGF is working closely with NEMMCO in the review of the Technical Standards and has provided representation and input to the consultation process being run by the Australian Greenhouse Office in relation to wind forecasting.

More detailed specific comment on the five critical areas highlighted in the Policy Group paper, is attached.

Sincerely,

John Boshier  
Executive Director

## **NGF SUBMISSION TO MCE ON WEPWG PAPER**

The National Generators' Forum, (NGF) welcomes the opportunity to provide comment on the Wind Energy Policy Working Group, (WEPWG) report dated March 2005, to the Ministerial Council on Energy's Standing Committee of Officials on "Integrating Wind Farms into the National Electricity Market".

The report identified a number of matters arising from the increasing penetration of wind energy. The NGF considers the following five of these to be urgent:

1. A review of the technical standards for connection;
2. Disclosure of appropriate information in relation to plant dispatch and availability;
3. Cost recovery of Regulation Frequency Control Ancillary Services (FCAS);
4. Provision of public wind farm models to permit power system modelling, and;
5. Managing the impact of intermittent generation on network flows.

These are addressed in turn.

### **Technical Standards**

The NGF recognises that there are areas of the Code in relation to technical standards, (particularly in Schedule S5.2 ) which are difficult to interpret in relation to wind generation plant. As such, the NGF supports a review of the Code drafting to remove anomalies, ambiguities and inconsistencies and allow the technical standards to apply uniformly to all generation technologies.

However the NGF, is concerned that the technical standards review might lead to a retrospective requirement to comply with a standard above the existing performance standard, which is registered with NEMMCO under the current Code provisions. The NGF wishes to note that the risk of retrospective regulatory changes would create a serious disincentive for investment in the Australian energy market. The NGF has sought and received assurances that the 'grandfathering' principle will be retained throughout the proposed technical standards review. However, in order to formalise this position, it suggests that the Code/Rules will need to be amended. The NGF is finalising its recommended approach to grandfathering of performance standards and will be progressing this issue directly with NEMMCO in the near future.

As part of the process of Code Technical Standards review, the NGF suggests that the objective of each of the clauses in Schedule 5.2 be identified in terms of the required power system impact, without reference to the specific plant type. This would assist the (re)drafting of subsequent clauses in general rather than technology-specific terms.

The NGF supports the development of minimum, negotiated and automatic standards, whilst remaining concerned about the uncertain basis for negotiation. The NGF supports the principle that the minimum standard should be adopted, unless there is a demonstrated need at the time of the connection application, for a higher standard, this should lead to lower overall costs to consumers. We note in this context that compulsory supply of services, despite its superficial attraction, may prove economically inefficient and add to the total cost of supply.

The NGF also seeks a clear and justifiable separation between services which must be provided as a condition of connection, and those which may be provided under commercial arrangements with either NEMMCO or the NSP. An example of this is the requirement to be able to respond to frequency deviations with the actual provision of the service being managed on a commercial basis within the ancillary services market).

The NGF also agrees with the WETAG that some provisions may be overly prescriptive and consequently result in excessively onerous technical performance requirements.

### **Information Disclosure**

The NGF agrees that information regarding wind generation forecasts must be made available to market participants to facilitate market transparency and efficient plant commitment outcomes. Such data publication requirements are a pre-requisite for the ongoing operation of the NEM, with its market design based on de-centralised commitment. It looks forward to working with NEMMCO, through the established Code change processes to develop Code changes to support the release of predispach, STPASA, MTPASA, 'next day publication' and actual dispatch data from significant non-scheduled generation in the same manner as currently released for scheduled generation.

### **Cost recovery of Regulation FCAS Costs**

The NGF supports the requirement that all market generation plant with aggregate capacity larger than 30MW in size at a given connection point, must participate in regulation FCAS causer pays arrangements.

This is facilitated by the current requirement for the installation of appropriate operational metering for generating units or generating systems that are larger than 30MW in size – a position supported by the NGF on the grounds of facilitating NEMMCO's ability to centrally dispatch the power system. However, the current ambiguity over FCAS participation based on metering criteria alone should be removed.

The NGF looks forward to working with NEMMCO to establish the most appropriate and efficient method of determining the causer pays factors for non-scheduled generation.

### **Provision of Non-Confidential Wind farm models**

The NGF understands that appropriate models are required to represent the dynamic performance of wind farms at their connection points, so that the power system security implications of large scale wind developments may be assessed. We also support the code/rules requirement of such models being made publicly available.

The NGF also recognises the concerns expressed by wind developers in relation to the intellectual property issues associated with detailed wind turbine models, ie representation of individual wind turbine dynamic performance. However we believe that a clear connection-point-based requirement for generation system models should be defined which would:

- provide the plant response information required to assess power system performance;
- support the ability of new entrant generators to model the power system, thereby supporting market efficiency and the long term interests of customers, and;
- providing a level playing field between developers of conventional plant and newer technologies such as wind farms.

The NGF considers that further discussion is required with wind developers and with Network Service Providers to ensure that appropriate model verification regimes can be developed.

Once the above mechanisms have been agreed, the NGF would support clarification of the regulatory requirements and the development of an appropriate set of Code changes, if required.

### **Managing Network Flows**

The NGF agrees that some form of ‘semi-dispatch’ of wind generation plant will be required at times, to manage network flows in an efficient manner. The NGF supports the concept that the dispatch engine could optimise the wind farm’s output utilising an offer price nominated by the wind farm (in a similar way to offer prices submitted by scheduled generators). Then, when network constraints are binding, dispatch targets of maximum generation could be sent to all significant generation, on an economic basis.

We would highlight that the current market design allows scheduled generators to offer negative price offers (ie. Generators can offer to pay to continue to be dispatched). This design principle recognises that some scheduled plants can face significant costs in offloading - ranging from higher auxiliary fuel costs, through to opportunity costs associated with forced de-commitments and long lead times before the plants can be re-started. By allowing generators to effectively offer to pay to stay committed, the dispatch engine can appropriately determine the least cost solution to resolving “minimum generation” problems.

The NGF considers that the semi-dispatch principle discussed in the WETAG paper allows this principle to be extended to include non-scheduled plants in the economic resolution of minimum generation problems (either locally in the case of specific intra-regional network constraints, or more generally in the case of region-wide excess generation problems). We would note that the costs to wind-farms of curtailing their output may be lower than the costs of forced de-commitment of scheduled plant. Facilitating an economic trade-off through the dispatch engine as proposed by WETAG will allow participants to adjust their offers over time to take account of their perceived costs at any time – which is far preferable to an imposed regulatory solution which would tend to allocate capacity on a more-heavy handed basis. In the absence of nodal pricing, the offloading is likely to be determined by pro-rata offloading according to capacity. Such an outcome is entirely consistent with the technological neutrality principle under the Code.

It is however unrealistic to ignore the variability of wind. Assigning output targets to wind generators, (even on the basis of reasonably accurate persistence-based forecasts) does not ensure that the wind will persist. Whilst run-back schemes or

maximum output limits can be used to limit transmission circuit loading, they do not ensure full utilisation of transmission investments. That is, in the event that the wind farm output is reduced due to falling off of wind output, some 'allocated' transmission capacity will remain unused. The materiality of any reduced utilisation of transmission capacity as a consequence of large-scale wind generation, is currently under review.

As wind generation increases there may need to be new market mechanisms instituted to counteract this under-utilisation of network capability. For example, the active control over network flow within a dispatch interval could be contemplated. This could be regarded as a new form of Network Control Ancillary Service. Tools such as the Generation Dispatch Limiter developed by ElectraNet SA to manage wind farm output in real time within dynamic network ratings appear to offer some scope to improve utilisation of network capacity, and should be appropriately considered from a market management perspective.

The NGF view is that, whilst notice should be given to potential wind developers that wind farms will, to some extent need to participate in central dispatch, the mechanism for this is not yet developed. Further work is required in this area taking cognizance of:

1. future developments in wind forecasting;
2. future developments in wind turbine/farm control technology;
3. the impact of geographical diversity on wind farm variability and
4. the impact of the dispatch regime on network investment.

While this work progresses, the NGF suggests that the MCE supports the principle of participation by any future wind farm in central dispatch and requires any wind farm developed from now on to be subject to any requirements subsequently imposed as a result of this review.

### **Other Issues**

The NGF agrees that other issues such as the deemed contribution of wind farms to system reserves, the connection application process and the treatment of contingency FCAS can be dealt with under existing market consultation processes.

However, acknowledging the broad range of actions recommended by the WETAG, the NGF considers there would be some value in an overall project timetable, allocating responsibility and timeframes, to ensure an integrated approach to addressing these issues.

### **Wind Forecasting**

The NGF recognises that the WETAG did not consider wind forecasting as this issue is being managed by the AGO, however the NGF believes that this matter is critical for the efficient and effective management of the market and wishes to express its support to the continued work by the AGO.

The NGF believes that a centralised forecasting regime will be able to draw on a wider range of inputs than an individual generator and is therefore most likely to provide a more accurate forecast.