FLINDERS
POWER

Flinders Operating Services Pty Ltd
168 Greenhill Road
Parkside SA 5063

GPO Box 2535
Adelaide SA 5001
Australia

Telephone (+61) 8 8372 8600
Facsimile (+61) 8 8372 8610
Adelaide Office

6 July 2007

Dr John Tamblyn
Chairman
Australian Energy Market Commission
Level 16, 1 Margaret Street
Sydney NSW 2000

Email: submissions@aemc.gov.au

Dear Dr Tamblyn

RE: RULE CHANGE PROPOSAL - CENTRAL DISPATCH AND INTEGRATION OF WIND AND OTHER INTERMITTENT GENERATION

Flinders Power would like to take the opportunity to offer its comments on the above Rule change proposal submitted by NEMMCO.

Summary

Flinders Power supports the intent of this Rule change, in better integrating intermittent forms of generation into the market management and dispatch processes of the NEM.

However, Flinders believes the new arrangements, if applied as proposed, would fall well short of their stated objectives, owing to the broad ranging exemptions proposed.

Flinders Power believes consistent application of the new arrangements across new and existing large non-scheduled generators alike would better meet the NEM objective, and deliver a solution that is more effective, efficient and even handed.

In order to respect the technical capability of existing plant, specific targeted exemption for technical reasons should be available, as required, to cater for any instances where compliance with the new requirements of semi-dispatch would be impractical or impossible, consistent with the principle of grandfathering.

ACN 094 130 837
ABN 36 094 130 837

Background

In April 2004, the Ministerial Council on Energy (MCE) agreed to establish a project to consider issues concerning the entry of renewable energy generation (particularly intermittent and non-scheduled generation such as wind) into the NEM. This followed earlier investigations by NEMMCO, which culminated in the release of an information paper in March 2003 which identified a range of potential issues associated with the increased uptake of large scale intermittent generation in the NEM, including network management.

Following the decision of the MCE, the Standing Committee of Officials (SCO) established a Wind Energy Policy Working Group (WEPWG) to progress this project. The WEPWG in turn requested NEMMCO in late 2004 to establish a Wind Energy Technical Advisory Group (WETAG) consisting of industry participants to advise on the technical and policy issues raised by the increasing penetration of wind generation in the NEM.

One of the urgent matters identified in the final report of the WETAG of 12 January 2005 was the need to manage the impact of intermittent generation on network flows. In consulting on the report, the WEPWG noted that:

> Situations can arise with significant amounts of non-scheduled generation where the central dispatch process cannot prevent the operational limits of the network becoming infringed by controlling the output of scheduled generators alone. Accordingly, it is considered that the current concept of non-scheduled generation under the Code is not sustainable and that some form of dispatch control of wind farms will be required.[1]

Accordingly, the WETAG Report recommended further investigation by the WEPWG of the cost of control systems and the feasibility of a 'semi-dispatch' model for wind farms when network constraints are binding. It was noted that a potential semi-dispatch approach would be for dispatch targets of maximum generation to be sent to the significant non-scheduled plant when network constraints are binding where the dispatch engine has optimised 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).

WETAG considered this matter urgent, based on the rapid rise of intermittent generation foreshadowed for South Australia. It also found that large amounts of intermittent non-scheduled generation are incompatible with the optimised central dispatch process in the NEM, in part because the operational security limits of the network may be infringed.

WETAG noted that the process of managing non-scheduled generation within network limits could not be managed through the central dispatch process unless some specific dispatch obligations were placed on non-scheduled plant. However, it was also noted at that time that

[1] *Integrating Wind Farms into the National Electricity Market: Discussion Paper,* Wind Energy Policy Working Group, Ministerial Council on Energy Standing Committee of Officials, March 2005, page iii.

some Network Service Providers (NSPs) were requiring the installation of generation control solutions through connection agreements for wind farms, including the capability to limit their output on request from the NSP to manage local network flows. However, such arrangements were not required by the (then) Code nor coordinated with the central dispatch process and therefore not reflected in market forecast processes managed by NEMMCO. It was also noted that differing arrangements may be adopted at different locations across the NEM.[2]

The WETAG went on to outline the concept of 'semi-dispatch', and noted that its members supported an approach whereby significant non-scheduled generators would only be required to install appropriate control facilities at the time when the network loading issues become material in their network area. On this basis, with an appropriate notice period, non-scheduled generators would have to comply with an obligation to install control facilities and participate in the semi-dispatch arrangements.[3]

Accordingly, NEMMCO was then requested by the SCO in August 2005 to develop a more detailed description of the semi-dispatch arrangements proposed in the WETAG report. NEMMCO convened a panel of industry representatives known as the Wind Energy Industry Reference Group (WEIRG) to assist in this task, and provided initial advice in 2005 confirming the feasibility of the concept. With the support of the WEPWG, NEMMCO then proceeded to develop detailed Rule change proposals and supporting procedures necessary to implement the semi-dispatch arrangements proposed.

Proposal

The proposed Rule seeks to enhance power system security by requiring that significant intermittent generators (such as wind farms) participate in the central dispatch and PASA processes, and limit their output at times when that output would otherwise violate secure network limits. It is stated that these arrangements will provide for greater control over significant intermittent generation in the NEM, while reducing reliance on local NSP control schemes and intervention, and should also enable operating margins on affected network limits to be reduced.

The NEM dispatch engine provides for the centralised optimisation of generation and power flows across the interconnected NEM, while managing system security within the power system. The proposal effectively integrates significant intermittent generation into this common central dispatch framework in terms of the structure of dispatch offers, the optimal dispatch of those offers and the control of generation through network constraint equations.

---

[2] *Integrating Wind Farms into the NEM,* Wind Energy technical Advisory Group Report to the Wind Energy Policy Working Group, 12 January 2005, pp13-14.
[3] ibid, p15.

Non-scheduled generation is exempted from control by NEMMCO's central dispatch, and therefore effectively has firm network access and dispatch priority over all other generation. Consequently a number of network control and market efficiency issues have emerged for the NEM under present arrangements, given the number of large intermittent generators presently operating as non-scheduled. These issues include an increased risk of violating secure network limits, reduced market efficiency due to higher than necessary network operating margins, and reduced market efficiency due to increased market intervention.

These issues are exacerbated by the regional concentration of wind farms, as acknowledged in the proposal, noting the significant clustering of plant in areas such as South Australia, which has already achieved a proportion of installed wind capacity considered high even by international standards.

These issues would effectively be addressed by incorporating significant intermittent non-scheduled generation into the central dispatch process through the proposed semi-dispatch arrangements. This concept provides a transparent and efficient solution which enables the central dispatch engine to manage network flows within limits, allows operating margins to be relaxed and avoids the need for frequent intervention outside normal market processes. The intent and design of these arrangements is therefore supported.

However, NEMMCO has proposed that a complete, unconditional and ongoing exemption from the proposed semi-dispatch Rules should be granted to all generators that are registered, or have a connection agreement in place, by the time the Rules take effect. Despite the clear intent of semi-dispatch since its conception, both existing and emerging wind farms would therefore effectively be carved out of these arrangements in perpetuity, irrespective of their ability to actually comply with the requirements.

It is noted for example that a number of existing significant wind farm generators in South Australia are already required under their connection agreements to install appropriate remote control equipment to enable their generating output to be limited by the NSP as necessary in order to manage local network flows within limits.

However, such an arrangement is not co-ordinated with the central dispatch process managed by NEMMCO. It therefore falls outside the centralised dispatch optimisation and system security management processes of the NEM, and is not transparent to the wider market.

As noted in the proposal, good regulatory practice would seem to dictate that the means of rationing network capacity should be undertaken on a common basis across the NEM, preferably through the central dispatch process, supported by common NEM-wide arrangements for the dispatch of such plant, rather than having different arrangements in place at different locations of the NEM.[4]

---

[4] *Semi-Dispatch of Significant Intermittent Generation: Request for Rule Change*, NEMMCO, 23 April 2007, p18.

By excluding existing wind farms from semi-dispatch, the proposal fails to deliver its stated aim:

> "If the Central Dispatch process does not manage the dispatch from all significant generating plant (both scheduled and non-scheduled generation) that can materially affect network loadings and transfer limits then the network may become overloaded or its technical envelope infringed and hence the power system operates in an insecure state.
>
> This issue may be exacerbated where the non-scheduled generation involved is of an intermittent nature, given the greater short-term variability of its uncontrolled output compared with non-intermittent generation and hence the greater risk of violating network limits that are binding or close to binding.
>
> The increasing short-term variability of uncontrolled wind farm output may translate into a greater risk of violating existing secure network limits (particularly in relatively remote areas with limited local network capacity) and hence place further pressure on NEMMCO to increase network operating margins in order to maintain local network flows within limits. This wind farm clustering trend has already been observed in South Australia (in the south-east area and on the Eyre Peninsula) and may continue with the future establishment of substantial wind farm capacity planned for the northern area of South Australia.
>
> If the above issues are not addressed on a NEM-wide basis then the ability of NEMMCO to maintain power system security in an economically efficient manner may deteriorate over time as the levels of non-scheduled intermittent generation in the NEM increase."[5] (emphasis added)

From a market management, efficiency and transparency perspective, the semi-dispatch arrangements should be applied consistently across all large non-scheduled generation sources.

Appropriate exemption where compliance is not possible for existing plant on technical grounds should also be available, consistent with the established principle of grandfathering. An appropriate lead time would also provide adequate transitional for existing plant to comply with the new requirements including, where necessary, migration from local NSP network control arrangements.

There is no need for a heavy-handed blanket exemption which carves out all non-scheduled generators that could effectively participate in semi-dispatch and undermines the clear purpose and intent of these arrangements.

[5] *Semi-Dispatch of Significant Intermittent Generation: Request for Rule Change*, NEMMCO, 23 April 2007, p6.

FLINDERS
POWER

Conclusion

While acknowledging the purpose and intent of this proposal, Flinders Power is unable to support this Rule change in its present form.

Flinders Power agrees with both the clear need for and intent of this proposal, but believes that the Rule fails to achieve its stated aim and falls well short of the NEM objective due to the blunt blanket carve out approach proposed.

The Rule should be amended to apply consistently across all large non-scheduled generation sources, with appropriate transitional timeframes and exemption available on technical grounds to preserve the principle of grandfathering. This approach should at the very least capture those generators with dispatch control mechanisms in place under their licensing conditions or connection agreements with their NSP, and bring these arrangements transparently within the dispatch process.

Should you have any queries in relation to the above submission, please feel free to contact me on 08 8372 8726 or Simon Appleby on 08 8372 8706.

Yours sincerely

Reza Evans
Manager
Energy Policy & Regulation