

29 June 2006

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Dear Dr Tamblyn

TECHNICAL STANDARDS FOR WIND GENERATION

I apologise for the lateness of this submission caused by the end of year workload at the ESIPC. I hope the information is still able to be taken into account in your deliberations.

The ESIPC (Planning Council) undertook a large amount of modelling on the impact of wind generation on the power system and the market through 2003 to 2005. The culmination of that work was a report to the Essential Services Commission of South Australia. The questions put to the Planning Council by the South Australian Minister for Energy and ESCOSA sought advice as to the level of wind generation which could be installed in South Australia without serious detrimental impacts. The Planning Council considers that limits on the quantity of wind generation which can be allowed to connect to the market are not consistent with the aim of providing open access and allowing competition to determine what investment proceeds. The work of the Planning Council then focussed on what provisions for access and operation were required to maintain open access and minimise barriers to entry whilst maintaining system security, power quality and market efficiency.

The provisions recommended by the Planning Council included a need for better technical standards. The technical standards in the Rules have some shortcomings generally but in respect to our work on wind generation the main concerns were:

- ◆ the application of the standards to asynchronous, intermittent and non-scheduled generators;
- ◆ the fault ride-through provisions; and
- ◆ the reactive power capability.

The Planning Council recommendations with respect to technical standards were generally less stringent than those which now apply to wind generators seeking to connect in the Irish Republic, in Alberta Canada, in northern Germany, in the UK and the FERC requirements in the US. We would also advise the AEMC that the combined capacity of wind farms operating in South Australia and those committed and under construction is 642 MW. A further 100 MW actually hold licences. Whilst the Planning Council do not expect more wind farms to proceed in the short term and without some form of additional financial support, these standards do need to adequately deal with applications around the 800 MW and 1,000 MW levels analysed in our report. The overnight and weekend demand in South Australia is typically 1,000 MW and the annual average 1,449 MW. At the levels of wind generation to which these Rules would apply, South Australia would be at, or close to, world leadership in terms of the concentration of wind energy in the power system.

The Planning Council is disappointed with several of the Rule changes proposed with respect to wind generation but notes that the changes go far wider than simply extending the current standards to cover wind. In fact the vast majority of the proposed Rule changes are not related specifically to wind generation and aspects of these raise concerns.

Wind generation issues

The Planning Council is concerned that the proposed changes to:

- ◆ the voltage fault ride-through provisions are complex and, critically, that the definition of continuous uninterrupted operation is a step back from that accepted in the case before the National Electricity Tribunal. The new definition proposed is difficult to interpret and would appear to jeopardise the enforcement of the whole standard.
- ◆ the ability to respond to a frequency disturbance introduces an exemption to the need to comply if the rate of change of frequency exceeds a given value. This effectively lowers the standard without justification of the adequacy of the actual rate of change proposed. The criteria on which compliance is negotiated between the minimum and automatic standard also appears unclear; and
- ◆ the failure of the changes to properly deal with the need for reactive power and voltage control in the power system.

General connection issues

The Planning Council has a range of more general concerns with the proposed changes to the connection process and the ongoing application of technical standards as follows:

The changes treat the negotiation of a connection agreement and the registration of performance standards as stand alone processes. The Planning Council strongly recommends against this approach. The negotiation of the connection agreement is paramount and results in a binding commercial contract which the Rules should respect. The registration of the performance standards should be a simple transcription of the technical standards in the negotiated connection agreement and NEMMCO should be actively engaged

much earlier in the process to ensure any their issues are being dealt with during the negotiation process rather than in a separate and subsequent process.

The Rules already provide for NEMMCO to be involved in the process at both the enquiry and connection application stages and part of those negotiations. Those provisions, refined if necessary, should be relied upon rather than introducing new provisions for the “assessment” and “acceptance” of performance standards.

We also note that requirements for registration are proposed to be extended by provisions requiring applicants to satisfy NEMMCO that they can meet their performance standards. The Rules already provide for commissioning and testing to verify that the provisions in the connection agreement are being met.

The provisions to alter performance standards also introduce a range of issues and again appear to diminish the importance of the connection agreement. The provisions could also be seen as providing the wrong accountabilities on generator models. The Planning Council considers that appropriate models need to be used in the negotiation of the connection agreement and clearly should be used in the assessment of the impact of the new generation on the power system. Rather than seeking to specify the requirements of complex technical models and trying to enforce compliance with these model requirements, the Rules ought to hold connection applicants accountable for the performance of the plant when constructed and that its performance on commissioning is in accordance with the model and other information supplied as part of the connection application process.

The value of having realistic automatic access standards is that they can reduce the cost and time taken to negotiate standards where good commercially available plant is available to meet those standards. The Rule changes proposed in a number of instances introduce a level of complexity and costly analysis into setting the automatic standard by requiring a contingency assessment. It would lower the barriers to entry if clear and realistic automatic access standards were offered and provide an incentive for potential new entrants to actually offer to that standard. The concept of negotiating to a level “as close as practicable to the automatic level” while appropriate in principle appears open to interpretation and difficult to administer.

The section on reactive power provides that reactive plant at the site is part of the “generating system”. We think that is already provided for in the definition of “generating system” and that the Rules throughout should consistently accept that any technical standard provision should apply at the connection point and hence allow scope to use a range of other plant to be used to ensure compliance.

The introduction of new requirements on connection applicants not to impact on reliability of supply is not solely an issue for technical standards and the negotiation of new connections. The Planning Council agrees that technical characteristics of a proposed new generator should not degrade system security and stability, nor should it reduce the underlying network capability. The operation of all generators in the market is, however, subject to constraints and the congestion pricing and management regime. The access regime should therefore allow

connection where technically adequate and rely upon the market operating arrangements to provide appropriate risks and incentives on the locational decisions of potential new entrants. The AEMC is reviewing the congestion management regime in a separate review and the scope of these proposed Rule changes should be restricted, at least until that work is completed.

I apologise again for the lateness and brevity of this submission. I would be happy to elaborate on any of the areas highlighted if that would be useful. Please feel free to call myself or Craig Oakeshott to discuss.

Yours sincerely

David Swift
CHIEF EXECUTIVE