



Hydro Tasmania
the renewable energy business

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Australian Energy Market Commission
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Australia Square NSW 1215

Emailed: submissions@aemc.gov.au

Technical Standards

Hydro Tasmania would like to thank the AEMC for the opportunity to assist the Commission in its review of the National Electricity Rules, (NER) in relation to NEMMCO's request to make a series of changes to the Rules relating to the technical standards that apply to generation in the National Electricity Market (NEM), particularly wind generation.

We give broad support to the processes of:

- (a) Removing editorial inconsistencies from the Rules,
- (b) Clarifying ambiguities arising from the use of terms which are technically inappropriate when applied to wind farms and
- (c) Clarifying the framework for negotiating access by new generators.

We note that these NEMMCO proposals include several aspects beyond those which are specifically wind plant related. Consequently, whilst in general terms the above changes are understood and supported by Hydro Tasmania, we have some concerns regarding the scope of the proposals extending beyond the original terms of reference,

Hydro Tasmania wishes to raise some concerns which it has in relation to the following aspects of this NEMMCO proposal:

- (a) Failure of the proposed Rules as drafted, to adequately recognise the current performance of existing generating units,
- (b) Prescriptive and often unrealistic technical standards for the connection of new generation, rather than performance definition in terms of system standards and market processes and
- (c) Lack of proper incentives on NEMMCO and TNSPs to limit the cost of generating unit/system tests under Clause 5.7.6 of the Rules.

These concerns are discussed in Attachment 1.

Hydro Tasmania's view is that the immediate changes to the Rules relating to the technical standards that apply to generation in the NEM, should be restricted to those needed to

facilitate the integration of large-scale non-scheduled and/or non-synchronous generating units.

In summary therefore, Hydro Tasmania suggests that:

- (a) The changes in relation to inconsistencies in wording and definition of terms or the use of terms which are technically inappropriate when applied to wind farms should be progressed as quickly as possible, subject to the usual market consultation process,
- (b) The proposals in relation to the clarification of the framework for negotiating access by new generators, should also be included in the current round of changes,
- (c) Where possible, the more detailed proposals relating to the technical performance of generating units should be replaced by less technically specific, system standard-focussed requirements. As foreshadowed by the Commission in its draft report relating to the review into the enforcement of and compliance with technical standards, consideration of this should be included in a subsequent wider review of the role of technical standards and their relation to compliance and system security,
- (d) Where possible a market-based approach should be used, for the provision of services required to support the network or achieve the power system operational standards, rather than a prescriptive set of obligations.

If you wish to discuss any aspect of this submission, please feel free to contact James Olivier on 03 6230 5498 or by email on james.olivier@hydro.com.au.

Yours sincerely



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ATTACHMENT 1

Grandfathering Technical Performance

The proposals strictly prevent any connection at a performance standard which is lower than the minimum access standard. This is true, even where the existing plant has performance below minimum and has operated in that way for many years.

Given that it is the intention to register performance standards as the actual unit or system performance at 1 June 2006, this restriction does not have significance for existing plant. Hydro Tasmania's concerns relate mainly to any future plant upgrades as in Clause 5.3.9 (c) of the Rules.

Clearly, where the cost of upgrading to minimum or higher is small, this may not be an issue. However, in some cases, the cost may not only be significant but also may achieve no material improvement in power system performance. Even if the TNSP and NEMMCO accept that this is so, the proposed Rules do not allow waiver of the restriction, [See Rules Clauses 5.3.4 A (a); 5.3.4.A (d); 5.3.7. A (d); 5.11.1 (l)].

Hydro Tasmania would prefer to have the ability to put a case for connection below the 'minimum' standard, where it can be demonstrated that the additional expenditure required would yield insufficient benefit in terms of system security or quality of supply impact.

Prescriptive Technical Standards

The above example is just one case of over prescription of the technical standards. Hydro Tasmania would prefer that the specific generating unit/system standards were replaced by a need to achieve system standards at the connection point, with the specific requirements of the current proposal being relegated to the role of guidelines.

Three examples of specific cases of over-prescriptive specification are given below:

Power System Stabiliser

Clause S5.2.5.13 (d) is quite prescriptive in its description of the technology which is required to meet the automatic standard. It would be better if the performance were specified, with descriptions of the technology included as a guideline, eg "two washout filters" and "not less than two lead-lag function blocks". Whilst this is not so specified for the minimum standard, part (f) of the same Clause tends to drive towards usage of the automatic standard.

Glossary Term – *adequately damped*

It is recognised that, in the general usage of the term, control systems need to be adequately damped. However, whilst the use of halving time to describe that performance seems appropriate (at least for a stated range of oscillation frequencies), the term 'damping ratio' is strictly applicable to second order systems. Whilst 2nd order approximations may be appropriate in some circumstances, such approximations should not be considered universally possible with acceptable outcomes.

Frequency Control

Clauses S5.2.5.11 (b) (2) (iii), S5.2.5.11 (b) (3) (iii) and S5.2.5.11 (e) taken together tend to force all plant towards the provision of what is a market service. This is inappropriate. In addition, the physical reality of some hydro plant, (Francis

turbines) means that this clause can only be complied with by severely degrading the dynamic response of the overall frequency control system.

Incentives for Limiting Testing Costs.

Hydro Tasmania's view is that the current and proposed Rules do not provide the proper incentives on NEMMCO and TNSPs to limit the cost of generating unit tests under Clause 5.7.6.

Whilst we accept that it is reasonable for NEMMCO and TNSPs to have the right to require a Generator to perform tests to verify models of plant performance, there should be some balance to this.

A suitable regime might be for the payment of costs to depend on the outcome of the test. For example, if the test parameters in question were simply unavailable, the apportionment of costs in the proposed clause 5.7.6 (h) would be reasonable. However, if NEMMCO or the TNSP were to challenge existing registered performance data but the analysis of the subsequent test results confirmed the accuracy of that data, then the costs should be borne by the party who required the tests. This would act as a restraint on requests for tests, since the requesting party would be exposed to the risk of paying for 'unnecessary' tests.

Other Anomalies

Unnecessary Provision

Clause S5.1.7 (d) empowers a TNSP and Generator to include provisions in their connection agreement. This is unnecessary, since even without this proposed clause, the connection agreement may include this together with a range of other mutually agreed arrangements.

Protection from System Disturbances

Clause S5.2.5.8 (a) (2) appears to place controllability obligations on generating plant, rather than deal with issues relating to protection of that plant from system disturbances. As such, it is more about providing a service to NEMMCO to assist secure operation of the power system under threatened or actual multiple contingency conditions. If this clause is required, it should be placed elsewhere in the Rules.

End of Hydro Tasmania's submission