



TXU
ABN 96 071 611 017
Level 33, 385 Bourke Street
Melbourne Vic 3000
Tel: 03 8628 1000
Fax: 03 8628 0904

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

By email: rdgworkgroup@dier.tas.gov.au

Submission on Integrating Wind Farms into the National Electricity Market

TXU operates the Torrens Island Power Station, a large slow-start gas generator in South Australia, is a significant energy retailer in the NEM, and is an off-taker of Wind Farm output. As such, we are pleased to have the opportunity to comment on the Wind Energy Policy Working Group ("WEPWG") discussion paper on Integrating Wind Farms into the National Electricity Market ("NEM").

We support this review by the WEPWG, and believe that it is timely to address policy issues related to Wind Energy. The NEM has been specifically designed to provide price signals for the provision of energy and ancillary services through a decentralised market mechanism. Overall the market design has been successful in facilitating investment and delivering operational efficiencies in power system operation.

For historic reasons, existing market arrangements were designed around scheduled generators, and little emphasis was placed on incorporating non-scheduled plant into the market design. With increasing levels of Wind Energy penetration now being experienced in the NEM, it is key to bring non-scheduled generation into the existing arrangements. The WETAG recommendations broadly support this principle, but we believe fail to go far enough in some areas. The recent report by ESIPC on the potential impacts of increased Wind penetration in South Australia has further clarified the urgency to integrate Wind Farms into existing market arrangements.

TXU believes the key issues to be addressed in relation to the WEPWG discussion paper, and the integration of Wind Farms into the NEM more generally are:

- We support the suggested Technical Standard Review process, but believe regulatory risk needs to be minimised by ensuring that non-wind generators with

existing registered performance standards are not required to meet any increases in technical standards;

- Non-scheduled generators > 30MW should be included in the dispatch process to resolve network congestion or more general excess generation conditions (referred to as “semi-dispatch” by WETAG);
- Wind Farm plant models should be mandatory, available to the public, and subject to a verification process to be developed by industry in conjunction with NEMMCO;
- Data publication requirements recommended by WETAG are appropriate and should be quickly progressed. We urge WEPWG to ensure that the NEMMCO code change proposal currently before NECA is efficiently progressed through the NECA/AEMC transition process;
- Generators greater than 30MW should be required to participate in the regulation FCAS causer pays arrangements to ensure the integrity of the current regulation market design, and to provide an incentive for wind developers to reduce sub 5 minute variability where economic;
- The issue labelled “optimising shared connection assets” is an outcome of the decentralised NEM model, and is not a Wind Farm specific issue. Policy action on this point would not be appropriate from the WEPWG, and;
- Accurate wind energy forecasts are urgently required to improve market efficiency now, and allow market mechanisms to support high levels of wind energy penetration in the future. We encourage the WEPWG to support a pragmatic and speedy approach to achieving enhanced forecasting capability.

Our views on some of these issues are expanded upon below.

1. Significant non-scheduled generators should be subject to semi-dispatch

It is becoming clear, following analysis performed by WETAG and ESIPC that from time to time Wind Farms will play a part in network constraints, or become involved in excess generation conditions¹. Consistent with our preference to incorporate non-scheduled generators into existing market mechanisms, we support use of the NEM dispatch process to resolve such constraints. A semi-dispatch mechanism can be easily implemented,

¹ Excess generation conditions are market events in which more plant wishes to stay committed in the power system than are required to meet system demand. This can result in negative market prices, as generators offer to pay to continue to be dispatched.

which would incorporate non-scheduled plants into dispatch to a degree that would allow the resolution of constraints, without significantly increasing the overheads of participation for wind developers.

Our preferred mechanism would involve Wind Farms nominating a price at which they would be willing to off-load if a constraint came into play. Such a nomination could be made on an irregular basis, and would not require the Wind Farm operator to participate in the full generator offer process – thereby keeping the NEM administrative burden to a minimum.

If a constraint involving a Wind Farm bound, the dispatch engine could allocate the constrained network capacity among generators involved using the Wind Farms nominated off-loading price, other generator offers, and if necessary the NEM bid tie-breaking rules. The level of capacity allocated to the Wind Farm would then be telemetered to the Wind Farm as a “maximum allowable output” signal, which the Farm would be required to limit its output to. Under non-constrained conditions the “maximum allowable output” signal would remain at the maximum capacity of the Wind Farm – allowing the Farm to freely vary its output in line with changes in wind strength.

We are disappointed that the WETAG report recommends further reviews into Wind Farm control technology capability before implementing semi-dispatch. This appears to run against the usual NEM design philosophy of technological neutrality. In addition, many NSP’s currently require Wind Farms to install automatic run-back schemes, which already impose requirements for automatic off-loading capabilities on the Farms in order to manage system security. On this basis, we do not support further technological reviews, which will only prolong uncertainty in the Wind Farm investment environment. Rather we recommend that the WEPWG implement a “semi-dispatch” policy as early as possible.

2. Public dynamic models of Wind Farms should be mandated

Currently scheduled plant is required to provide plant models to NEMMCO for dynamic system modelling. These models are made publicly available, as part of the NEM access regime. Wind Farms should be brought within this framework.

We support the development of a verification process for Wind Farm models to be developed jointly by NEMMCO and industry.

3. Data publication is urgently required

We support the data publication recommendations made by WETAG. NEMMCO has commenced code change proceedings to bring these recommendations into operation. Given that a lack of data transparency on non-scheduled generation is already causing

operational forecasting problems in the NEM due to recent increases in Wind Farm penetration, we urge the MCE (through the WEPWG) to ensure that the transition from NECA to the AEMC does not lead to unnecessary delay in the processing of this code/rule change.

4. Generators > 30MW should participate in regulation FCAS causer pays regime

In line with our general principle that all significant plants should be incorporated into existing market arrangements, we strongly support the recommendation that non-scheduled plants greater than 30MW are incorporated into the regulation FCAS causer pays regime. This is an important reform, as it ensures that Wind developers face the incentive to minimise their contribution to system regulation requirements, where this is cost effective.

5. Changes to generator connection arrangements should be avoided in this review

The WETAG report discussed the optimisation of shared network assets. Some WETAG members advocated a centrally planned approach to development of connection assets.

We strongly resist this proposal, as it is inconsistent with the decentralised planning model that is at the centre of the NEM market design and is faced by all NEM generators. As such this issue is not a Wind Energy specific issue and should not be considered as part of this process. Any modifications to this policy will have wide ramifications on the development of the NEM, and may require modifications to other aspects of the market design to ensure the decentralised market model can continue to operate efficiently.

6. Accurate wind forecasts essential for maintaining system security

As noted previously, data transparency and lack of forecasting capability are currently impacting on the efficient operation of the NEM due to the moderate existing penetration of wind energy in South Australia. This impact has already resulted in demand forecast errors of over 200MW, which causes inefficient commitment of scheduled generators, and demand reduction schemes.

As indicated in the ESIPC report, if wind penetration levels greater than 500MW occur in South Australia, advanced wind forecasting systems will be required not only to support efficient market operations, but to ensure the maintenance of system reliability. Under high wind penetration scenarios foreshadowed in the ESIPC report, very large deviations in Wind Farm outputs are possible under some weather outcomes. In order to manage these situations in SA, particularly in low demand situations when a large proportion of intermediate plant could be de-committed, it will be important to have a system in place to

forecast such large wind variances so that plant commitment decisions can be made in advance of these events.

We encourage the WEPWG to ensure that a pragmatic and timely approach is taken to the development of an appropriate wind forecasting system. At a recent Australian Greenhouse Office (“AGO”) forum on forecasting requirements, greater engagement of NEMMCO into the AGO project on forecasting was widely supported by a range of industry sectors. TXU is supportive of a greater project management role for NEMMCO in this area.

Please contact me on (03) 8628 1130 should you wish to further discuss our views on these matters.

Yours sincerely

Mark Frewin
Regulatory Manager