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Ref: SCL response Econnect Report

Roena Hooper
Project Management Assistant

Office of Energy
8th Floor, 197 St George's Tce
PERTH WA 6000

Econnect's Draft Report "South West Interconnected System Maximising the Penetration of Intermittent Generation"

Dear Roena,

Stanwell Corporation Limited (Stanwell) welcomes the opportunity provided by the Office of Energy, Western Australia (OOE) to make a submission regarding the recently released report from Econnect "South West Interconnected System (SWIS) - Maximising the Penetration of Intermittent Generation in the SWIS".

Stanwell is a National Electricity Market registered electricity generator with an installed capacity of over 1600MW comprising coal, liquid fuel, hydro and wind generation facilities. Stanwell's wind portfolio is represented by 12 MW of installed capacity at Windy Hill in Far North Queensland which has been now operating for some 5 years and 21MW of installed capacity located at Toora in Victoria which was commissioned in 2003.

Additionally Stanwell in conjunction with Griffin Energy is currently constructing the Emu Downs wind farm which is located off the Brands Highway near Cataby. The output from this approximate \$180M investment has been contracted. We are currently following the relevant generation registration and reserve capacity market registration processes (have been allocated reserve capacity) and will have the wind farm fully operational in the Wholesale Electricity Market (WEM) by the end of 2006.

Stanwell's is considering further expanding its wind energy portfolio by establishing a large new wind project at Baynton in Victoria and has a number of other sites including in Western Australia under review.

Thank you for sending Econnect's draft report for our comment. This is certainly an interesting document that is of great importance to the renewable energy industry in Western Australia (and indeed Australia as a whole) bringing as it does reflections, experience and event responses from the UK and Europe where intermittent generation has a long history and in certain networks high levels of capacity penetration.

Stanwell has been aware of Econnect's presence in Australia for some time and of their being head officed at Hexham in UK from where they gathered considerable experience of wind generation throughout UK, Ireland and Western Europe. Commercialisation of wind generation is currently difficult in Australia and it is essential that electricity market regimes and network access requirements do not unnecessarily impede such developments. Its seems reasonable that Econnect's European experiences, where wind generation has a reasonable long history (at least compared with our Australian experience) and where some electricity markets have significant wind penetration, could assist in this regard.

We have attached our response. Thank you once again for the opportunity to provide comments to this document.

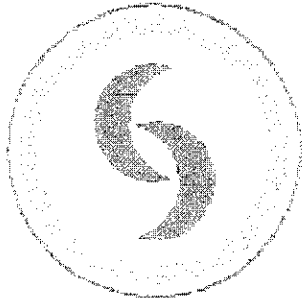
Please do not hesitate to contact Stuart Booker (07 033357541) or in Stuart's absence Phil Mead (07 3335 7406) should you require clarification or further information.

Yours faithfully



Gary Humphrys
Acting Chief Executive Officer
Stanwell Corporation Ltd

Att. Stanwell Comments on Econnect Report 1465 - Maximising the Penetration of Intermittent Generation in the South West Interconnected System



STANWELL
CORPORATION LIMITED

**MAXIMISING THE PENERATION OF INTERMITTENT GENERATION IN
THE SOUTH WEST INTERCONNECTED SYSTEM**

ECONNECT REPORT NO. 1465

COMMENTS PREPARED BY STANWELL CORPORATION LIMITED

18 JANUARY 2006

1. Context

Stanwell Corporation Limited (Stanwell) welcomes the opportunity to comment on the Draft Report prepared by Econnect, *Maximising the Penetration of Intermittent Generation in the South West Interconnected System* – (the Report) released by the Office of Energy WA on 8 December 2005.

As background, Stanwell is a National Electricity Market registered electricity generator with an installed capacity of over 1600MW comprising coal, liquid fuel, hydro and wind generation facilities. Stanwell's wind portfolio is represented by 12 MW of installed capacity at Windy Hill in Far North Queensland which has been now operating for some 5 years and 21MW of installed capacity located at Toora in Victoria which was commissioned in 2003.

Stanwell in conjunction with Griffin Energy is currently constructing the Emu Downs wind farm which is located off the Brands Highway near Cataby. The output from this approximately \$M180 investment has been contracted. We are currently following the relevant generation registration and reserve capacity market registration processes (having been allocated reserve capacity) and will have the wind farm fully operational in the Wholesale Electricity Market (WEM) by the end of 2006.

Stanwell's is considering further expanding its wind energy portfolio by establishing a large new wind project at Baynton in Victoria and has a number of other sites including in Western Australia under review. For these reasons, Stanwell is broadly supportive of the Western Australian Government's proposal to increase the use of renewable energy generation.

Stanwell looks forward to participating in any future discussions in resolving network issues caused by intermittent generation and as part of this process we intend to maintain on-going consultation with the Office of Energy WA.

2. Introduction

The Independent Market Operator ("IMO") in Western Australia has commissioned Econnect to prepare this report in apparent response to concerns that the West Australian Government's targeted volume of renewable generation may not be achieved.

This desk top review of the Econnect report has identified that:

- (i) the report focuses on market operation activities such as market rules and participation pricing issues and not structural changes to the market or to the technical performance required of intermittent plant in Western Australia,
- (ii) Econnect which was started off and is still head officed at Hexham in the UK is somewhat known to Stanwell through their Melbourne Office. Their considerable European wind energy knowledge and operational experience is displayed throughout their report via detailed referencing to regulatory regimes (technical and commercial) and actual incidents which have occurred throughout Western Europe, and
- (iii) the issues addressed and suggestions made are equally valid for the National Electricity Market ("NEM") and NEMMCO.

3. Comments on Report Recommendations

Priority 1 - Information

The recommendations (1 to 6) refer to the provision of information by network service providers and are supported.

Priority 2 – Network Stability

The recommendations (7 to 10) are endorsed with the following suggested changes:

- Recommendation 8 – change from “allow negotiated project specific requirements” to “require negotiated project specific requirements”.

Comment – this opportunity should be available to generators and customers when the negotiated position is reasonable and not immediately detrimental to the network or market.

- Recommendation 9 – change to “make existing conventional generators aware of the new requirements and their existing obligations and ensure in accord with good electrical industry practice that they can meet their existing obligations”

Comment - good industry practice is inserted because it is not always possible to prove by test all the requirements and in certain instances analysis or similar in accord with good electrical industry practice is the only available option for demonstrating compliance with obligations.

Priority 3 – Network Frequency Stability

The recommendations (11,12 and 13) refer to intermittent generation forecasting by the market manager or network service provider or third party, frequency control ancillary service and inertial control and are endorsed.

Comment - Econnect points out that wind turbines with a remote control turn down capability can provide frequency control especially at low loads when more traditional plant can be operating down at its turn down limit and that wind turbines with an over-frequency droop characteristic are contributing to high frequency inertial control and could be compensated for both.

Priority 4 – Geographical Diversity

The recommendations (14 and 15) are endorsed.

Comment –The recommendations suggest moving network charges for generators from a straight cost reflective view to a more benefit provided view.

Priority 5 – Energy Balancing and Reserve Capacity

Recommendations (16 and 17) are endorsed

Additional Recommendations

Recommendation (18) on Constraints and Recommendations (19 and 20) on Planning Controls are endorsed.

4. Additional Comments and Recommendations

Generation Forecasting

It is recommended that a more sophisticated intermittent generation forecasting capability be obtained and used to provide indications of issues such as short term intermittent generation output forecasts, range of likely short term output fluctuations and possibility of emergency wind speed trips for enhanced operations of the WEM. It is understood that the CSIRO is currently preparing a wind generation forecasting model for NEMMCO which is intended for use in the National Electricity Market and its suggested this may be of interest to IMO and the Office of Energy WA.

Review of Interim Technical Code

It is recommended that a similar review be undertaken of the Interim Technical Code to again identify reasonable changes which will maximise the penetration of intermittent generation.

Connection and Operation of Intermittent Generation

It is recommended that the IMO seek opportunity with NEMMCO for the joint development of those aspects of connection and operation of intermittent generation which are of mutual interest such as Frequency Control Ancillary Service (“FCAS”), forecasting and fault ride through.

Additional Frequency Control Ancillary Service

It is noted with interest that the Econnect Report comments (clause 3.1.2) that its only when intermittent energy penetration approaches levels of 20% or more that additional FCAS requirements become significant and start to impact market participants.

Voltage Support

The Report indicates that in certain applications wind farms are very beneficial in providing voltage support and VAR control for weaker networks. It is also understood that wind farms are capable of providing inertia support during network faults. Consideration could be given to the provision of some compensation or FCAS “credits” for this as to the extent that real and necessary benefits are provided.