



ACRE/ESAA Seminar

UNSW - 27 May 2002

**Network Issues associated with
distributed generation**

***Distributed Generator's
perspective***

27 May 2002

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Content

- **Industry drivers**
- **Recurrent problems**
 - ❖ Access to the Network
 - ❖ Fees and Charges
 - ❖ Other Issues
- **Where to from here**
 - ❖ AEA initiatives (Ready Reckoner, Guides)

Industry Drivers



■ Renewable Energy Bill

- ❖ 9,500 GWhr mandated by 2010
- ❖ 300-3000 new connections

■ Availability of embedded generation plant

- ❖ Greater efficiencies from combined cycle plants
- ❖ Technology for small units advancing rapidly

■ Ongoing industry frustration

- ❖ Support of AGO, DITR



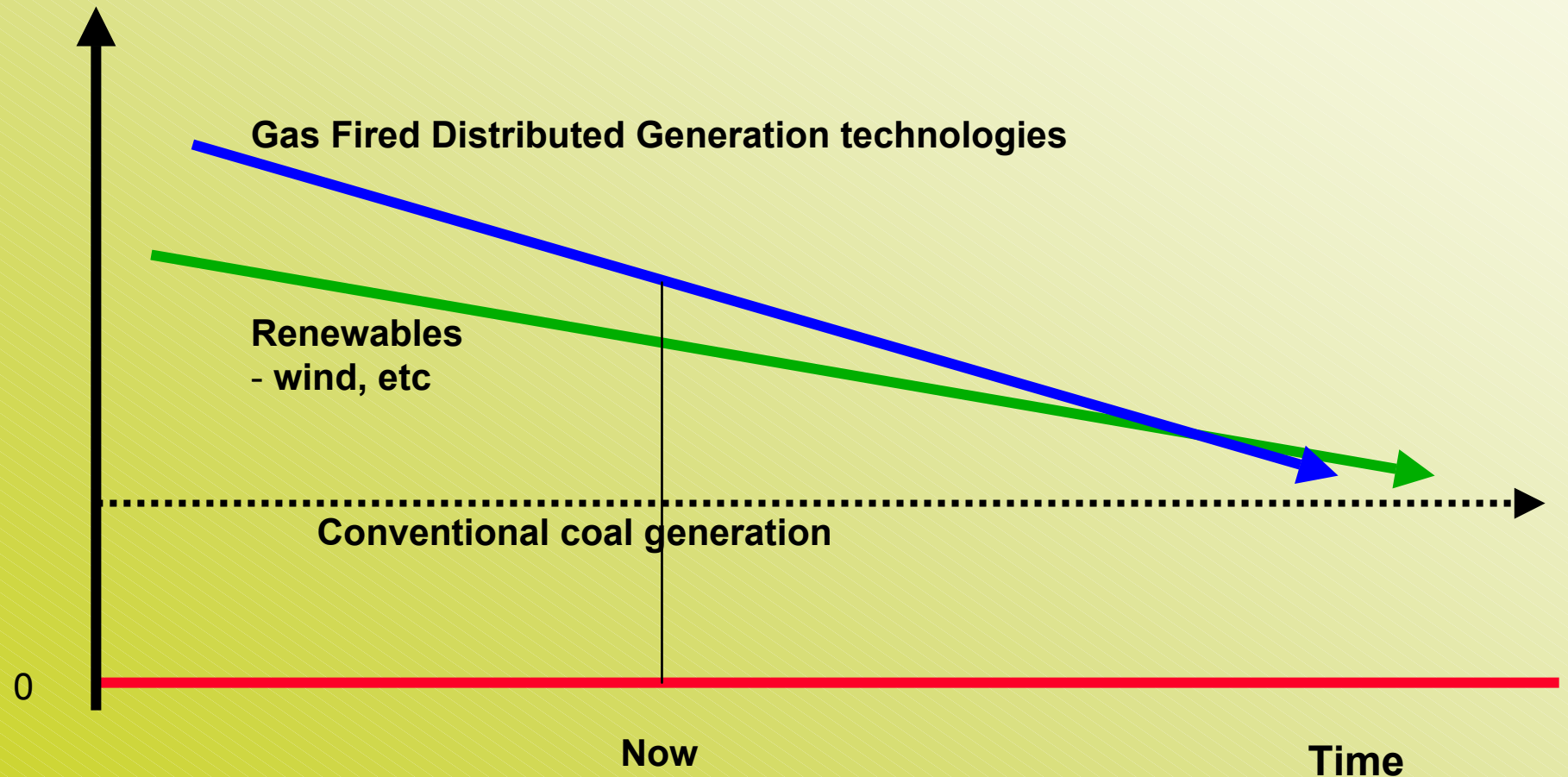
Codrington Wind Farm, Vic – Pacific Hydro

Falling unit costs of new technologies



Market access is a significant issue

Unit Costs (\$/MWh)



Getting Smaller...



Micro-turbine for commercial use



Fuel cell for domestic use



Micro cogeneration



Network Service Providers



- **Use monopoly position to extract economic rent**
- **Little understanding of:**
 - ❖ emerging market
 - ❖ obligations under the Code
- **Slow to process applications**
- **Shortage of staff, expertise & experience**
- **Little incentive to connect EMGEN**
- **Internal resources under pressure**
 - ❖ lots of tyre kickers





Toora Wind Farm

- **20 MW wind energy project**
 - ❖ connected to TXU's network at Toora
- **Stanwell to pay for significant augment'n costs**
- **ORG draft determination**
 - ❖ TXU's offer not consistent with Price Determination
 - ❖ TXU recovering costs already re-imbursed under prescribed services



Other examples

■ Leisure Centre

- ❖ Renewable resource can support 3MW+
- ❖ Project proceeding on basis of 2 x 1MW units and connected at 415 kV
- ❖ 3 MW would require connection at higher voltage, with connection costs \$700,000

■ Hospital

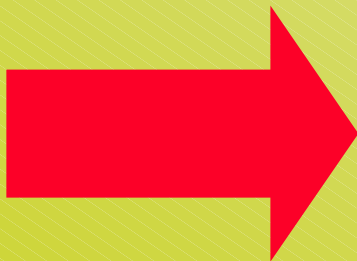
- ❖ 1MW plant
- ❖ Delays for additional protection equipment
- ❖ Supply interruptions each day due to onerous settings
- ❖ Protections decommissioned, settings revised

■ Gross metering

Where to from here for AEA?



- **Streamline access and connection process**
- **Identify market & network obligations & responsibilities for generators**
- **Support review of D portion of T&D review**
- **Identify traps for the unwary**
- **User Guides, Industry advice**



**Speedier and lower cost of connection
– more projects become viable**



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Cogeneration Ready Reckoner and User Guide

Ready Reckoner

The Cogeneration Ready Reckoner is provided in Zip file format for downloading. Save and open the Zip file on your hard-drive and run the "Setup" program to install the Ready Reckoner on your computer

[Click here to download the Ready Reckoner](#) (1717 KB)

Manual

The Ready Reckoner Manual, which is in PDF format (a free viewer is available from [Adobe](#)), can be downloaded separately. Many users will not need to download the manual.

[Click here to download the Ready Reckoner Manual](#) (2505 KB)

Report

A report has also been written that reviews the viability of cogeneration in Australia is also available.

[Click here to download the PDF report](#) (1370 KB)

Seminar Series Presentations

The presentations made at the AEA Seminar Series on the Cogeneration Ready Reckoner and User Guide can be downloaded here

[Introduction](#)

[SEDA Cogeneration Initiatives](#)

[Ready Reckoner](#)

[Assessment of Cogeneration](#)

www.ecogeneration.com.au/readyreckoner/readyreckoner.htm