Renewable Energy Industry: Trends in Australia and Overseas

Roaring40

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Roaring

Introducing Roaring 40s
 Climate Change and Renewable

Energy

Renewable Energy ~ Australia v The World

Conclusions



Introducing Roaring 40s

- Roaring 40s is a Joint Venture (50/50) between Hydro Tasmania and China Light and Power (CLP Group)
- Launched in November 2005
- Renewable Energy Project Developer and Asset Manager
- New business vehicle enabling overseas investment and partnership







Roaring 40s Vision

- Roaring 40s Vision -

To be the leading Renewable Energy Developer in Asia and Oceania





Climate Change and Renewable Energy



Climate Change

The earth is getting hotter with the 1990s being the hottest decade on record...





Greenhouse Gas Emissions

The CO₂ concentration in the earths atmosphere has increased by 31% since the industrial revolution





Climate Change

- There is new and stronger evidence that most of the warming observed over the last 50 years is attributable to human activities – IPCC
- The majority of the world's nations have recognised this need to combat global warming through participation in mechanisms like the Kyoto Protocol and partnerships like the G8 and AP6
- To avoid hazardous climate change, global CO2 emissions need to be reduced by as much as 50% by 2050, compared to 1990 levels – EU, 2005



Potential Impacts of Global Warming





Weather-related mortality Infectious diseases Air-quality respiratory illnesses

Rooring

Agriculture



Crop yields Irrigation demands

Water resources



Water supply Water quality Competition for water

coastal areas



Erosion of beaches Inundation of coastal lands additional costs to protect coastal communities



Source: GRID Arendal

Global Response

Existing commitments

- Kyoto Protocol Sets emissions reduction targets for signatory countries
 - ✓ 163 countries have ratified, accepted or approved the protocol
- AP6 Partnership between six Asia Pacific countries includes a Renewable Energy and Distributed Generation Taskforces
- G8 The worlds eight richest countries plan of action includes improving energy efficiency and financing cleaner energy



Global Response - Kyoto



Kyoto Protocol status

Ratified Signed only Not signatory No data





Global Response

Current World Energy Mix



However, significant difference in future outlook....



Global Response







Global Energy Trends – 2035



Source – Pew Centre for Climate Change

Roaring

Renewable Energy ~ Australia v The World



Australia v World RE Targets

Targeted % of Electricity Production



Roaring40s

Australian RE Market

- Australia's renewable energy industry has grown rapidly since 2000 driven primarily by the introduction of MRET
- Wind has been the fastest growing technology in Australia

Growth of Renewable Energy in Australia (excluding hydro)



Roaring 40s Contribution

Woolnorth Bluff Point

37 Turbines – 65 MW

Operational

Woolnorth Studland Bay
 ◆ 25 Turbines – 75 MW

Currently under construction

Cathedral Rocks ↔ 33 Turbines – 66 MW

Operational



Australian Market

- MRET was an effective stimulant for the RE market however, MRET now fully subscribed
- Due to demand growth, intended 2% RE target now is only 0.5%

✤ Lack of financial incentives has meant...

- 160 MW Heemskirk (Tas) wind farm suspended
 117 MW Waterloo (SA) wind farm suspended
- 140 MW Musselroe (Tas) wind farm uncertain

Overall, more then 500 MW of development potential effectively stalled



Predicted Australian Investment

Under the current policy environment, investment will dry up significantly by 2020

Predicted RE investment under current policy environment



China's Current Position

- Uses 13% of the worlds energy demands
- Produces 15% of the worlds GHG emissions (2nd behind the US)
- Has 7 of the worlds 10 most polluted cities

Only 3% of energy demands are met by RE (2003)



Renewable Energy in China

Predicted RE Growth in China until 2020

Roaring



AGY

China Policy Incentives

The Renewable Energy Law

- Development of RE is the preferential area for energy development
 - RE target of 15% by 2020
- Feed In Tariffs
 - Preferential scheduling
 - Supportive transmission infrastructure
- Banks encouraged to support RE projects
- CDM applicable



Roaring 40s China Projects





Roaring 40s China ProjectsShuangliao 49.3 MW Jilin province (NE from Beijing) Currently under construction Operational October 2006







Roaring 40s China Projects





Roaring 40s is targeting 1,000 MW by 2010



Roaring 40s ~ Other Markets New Zealand

- Okura wind farm, 120 MW stage 1 and 2 approved (Hawke's Bay)
- Targeting 300 MW

India Target of 400 MW by 2010 Supported by ambitious State RE targets Roaring 40s is pursing a number of opportunities Mumbai office opening soon



Conclusions

Rooring

- Climate change is real overwhelming acceptance that action is needed now
- Response will require a mix of solutions
- Renewable energy is the world's fastest growing and most sustainable, carbon free energy source
- Australian RE industry has stalled Federal Government needs to rethink RE policy
 - Roaring 40s successfully growing new markets in China, India and New Zealand



Questions.....

EMM