



Small Wind Turbine Industry

Discussion paper – the industry and issues

Victorian Small Wind meeting- April 27 2010

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About me – TWTC Pty Ltd



Director - TWTC Pty Ltd

- TWTC has experience with largest installed base of 1 kw – 100 kw wind turbines in the Oceania region. We install in Rural and Commercial locations.
- Installations in:
 - New Zealand
 - Tonga
 - French Polynesia
 - Samoa
 - Now Australia (from early 2010)
- 17 Staff and growing
- 100% Australian and New Zealand owned
- Exclusive supplier of renewable energy to CRT and Farmlands members in NZ
- Australian operation initially focussed on working with a Stock and Station agent in the NSW rural sector

Director - Wise Wind

- Wise Wind is the exclusive ANZ agent for Power Predictor Wind anemometer and solar device
- Over 18,000 power predictors now sold worldwide

Agenda



- SWT industry
- Foundations for sustainable industry growth
 - Public perception
 - Government policy
 - Industry standards
- SWT industry group

Small Wind Industry



- Includes turbines of less than 100 kW capacity
 - Types
 - Horizontal axis
 - Vertical axis
 - Uses
 - Grid connect
 - RAPS
 - Pumping and other dedicated uses
 - Customers
 - Individuals Rural
 - Individuals – Metro
 - Government/Council
 - Corporates
 - Other
- Industry Participants
 - Manufacturers
 - Distributors
 - Designers
 - Installers

The global industry: *Embryonic and growing*



| 2008 U.S. Sales | 2008 Global Sales |
|-------------------------|--------------------------|
| 17.3 MW | 38.7 MW |
| 78% growth over 2007 | 53% growth over 2007 |
| 10,500 units | 19,000 units |
| US\$77 million in sales | US\$156 million in sales |
| US installed systems | UK installed systems |
| 28,000 Grid (est 2008) | 11,500 Grid (est 2008) |

- 30 fold growth expected in next 5 years
- UK estimates
 - 450,000 viable small wind sites
 - 6% of electricity from small wind by 2050
- Over 220 manufacturers of small wind turbines
- \$160m of VC investment in renewable energy manufacturers between 2007 and 2009

Australia – on the starting blocks



- Size
 - Estimated 500 (!) grid connected Small Wind systems - Rec registry shows 226
 - possibly double that in RAPS
- Much interest...but up to now been too hard

Number of new Wind SGU claiming RECs

| | State | | | | | | Grand Total |
|--------------------|-----------|-----------|-----------|-----------|-----------|-----------|-------------|
| | NSW | QLD | SA | TAS | VIC | WA | |
| 2007 | 3 | 11 | 2 | | 1 | 1 | 18 |
| 2008 | 15 | 5 | 11 | 1 | 7 | 5 | 44 |
| 2009 | 13 | 6 | 9 | 9 | 7 | 11 | 55 |
| Grand Total | 31 | 22 | 22 | 10 | 15 | 17 | 117 |

Source: Rec Registry

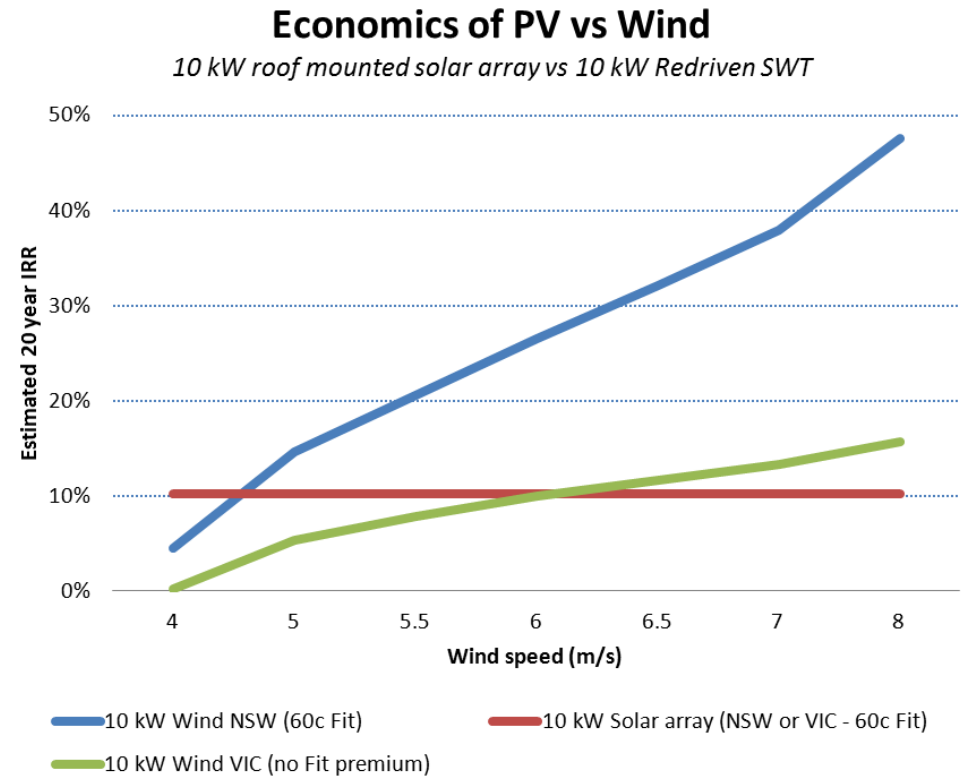
Australia – opportunity for growth



Australia potential

- Legislative requirement
 - MRET 20% by 2020 and floor price on RECs expected by January 1
 - CPRS post election?
- Moral obligation
 - 8th richest country per head
 - 5th dirtiest electricity in the world (behind India, Bangladesh, Botswana and Cambodia)
- Opportunity for SW growth
 - Vast areas of 5 – 7 m/s wind resource
 - Most Coastal
 - Inland plains
 - Limited urban

Small Wind can be very economic



Source: TWTC estimates

Foundations for sustainable industry growth

- Public perception
- Government policy
- Industry standards



Public perception



- We need to avoid and mitigate installation failures as in the long term we will be defined our grumpy customers
 - Inappropriately sited SWT
 - Noise issues
 - Turbine / blade failures
- In the short term
 - Media focus on large wind noise issues will affect us
 - ATA media doing a great job but our industry needs clear industry policies and voices

Government policy



- Federal Government
 - RECS policy toward small wind
 - 5 year deeming
 - 25 mW capacity for small wind
 - Incentives?
 - RECs market stability
 - CPRS
- COAG and States
 - FiT
 - National?
 - State submissions?
 - National metering standards
 - Regulations for distributors/ retailers
 - Planning policy
- Local Government
 - Local renewables targets
 - Clear approval processes - Local plans to clarify criteria for SWT

Industry standards and accreditation



- System Design
 - Site evaluation
 - Customer Information
 - Wind estimation
 - Turbine performance
 - Installation costs
 - Maintenance estimates
 - Noise assessment
- Installation
 - Safety
 - Standards
- Ongoing Safety
 - Monitoring
 - Preventive Maintenance

SWT group



- Purpose:
 - To establish foundations for sustainable SWT industry growth in Australia
 - Public perception
 - Government policy
 - Industry Standards
- Questions
 - What sort of a body?
 - Independent industry group?
 - CEC group?
 - SEAWA group?
 - ATA affiliation?
 - Other industry body?
- Funding required
 - What for?
 - Public perception
 - Government lobbying
 - Development of Training and accreditation standards
 - How much?
 - Where from?
 - Federal government?
 - Members?
 - Sponsors – Equipment manufacturers/distributors

Proposed next steps – to develop an SWT group



- Get industry support and foundation finances
 - Registrations of interest
 - \$100 per involved staff member Voluntary foundation fee
 - Seek foundation sponsors
- Get to work
 - Formalise structure
 - Develop and work on:
 - Public perception
 - Government lobbying
 - Development of Training and accreditation standards
- SWT group launch
 - Target ATRAA Alice Springs 04 August - 07 August 2010?

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