

Wind Energy for Power Generation

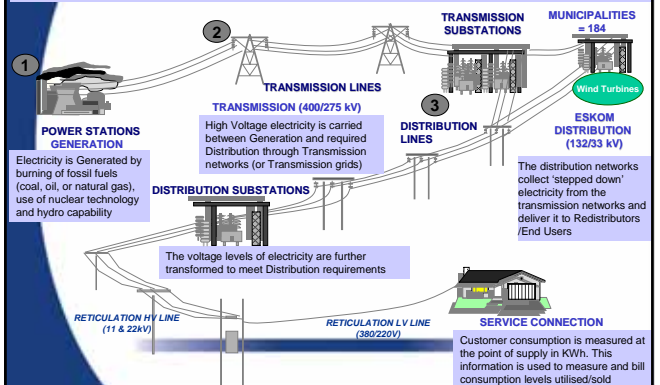
Presented by
Morore Mashao, Pr. Eng
Generation Divisional Client Office

Courtesy of
Ian Smit, Pr. Eng
Corporate Support Services – Research
Innovation Department



Industry overview

Electricity is produced, transported and delivered to end users. The functional outputs of these activities are managed by Generation, Transmission and Distribution Business Divisions.

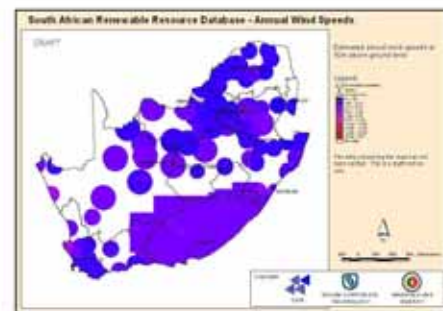


Wind Energy Facts

- Wind is a mature technology immediately accessible and off the shelf.
- Short lead times (typically a year).
- Construction within a year – modular components.
- Towers can potentially be manufactured locally.
- Operating and maintenance costs are low typically less than 2% of CoC.
- Self dispatching.
- No fuel input costs are applicable.
- No by-products or environmental pollution during its operation.
- No negative impact on the environment.
- Safe to operate.
- Land use minimal with normal activities continuing around generators – power stations without a fence.
- Rehabilitation costs minimal.

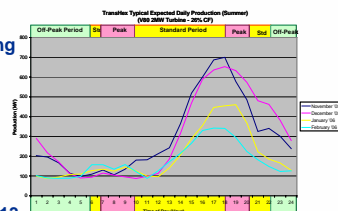


Wind Resource



West Coast Timelines

- EIA 12-months.
- First units on site within 12 months.
- Erection and commissioning 12 to 18 months.
- On line end of 2009 / beginning 2010.
- 228GWh / year at 26% utilization.
- Cumulative 912 GWh by 2013.
- Summer – evening peak production.



Source R&S



Technology

- 2MW Class
- 60m-80m Towers
- 40m-50m Blades
- 15m X 15m X2m Foundation
- Access Roads
- Underground Cables
- Substation
- Transmission Line



Budget

- CAPEX R 1.1 Billion
- O&M Anticipated R 23 Million per annum
- Fuel Costs R 0 per annum



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- Roads
- Lines
- U/G Cables
- Substation

Foundation



Blades, Nacelle & Tower section

Tower Sections

Johnson 550t
Only Hydraulic Mobile Crane in SA
with 80m reach @ 60ton



50 ton lift

Nacelle

- Life span ~ 20 years ~ 120 000 hours vs car engine of 4000-6000 hours
- Small units operational for ~ 40 yrs
- Scheduled maintenance (Grease & Oil)
- Complex Control equipment



V66
62.5 ton lift
60m high

Skaapvlei Landscape



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Thank You



"Something to Blow you Away"

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