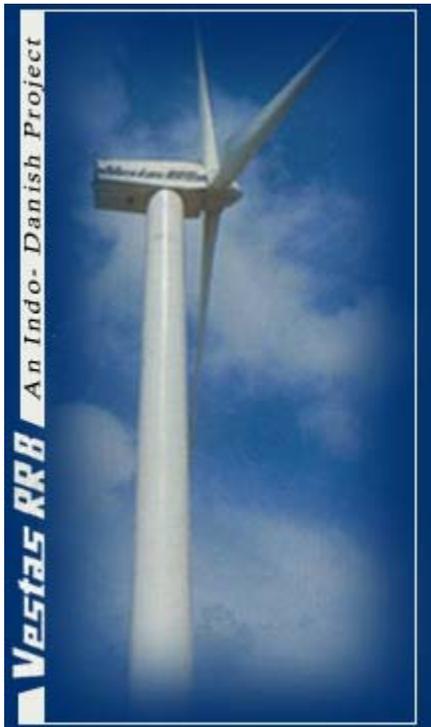




On-Site Wind Power Technology



Presented By:





Extensive Research

- Started in June with 14 Potential Options
- Meet with 8 Vendors in Los Angeles in Early June
- Entered Negotiations with a Financial Partner to make a bulk purchase of 250MW over 5 years

	Manufacturer	WTG name	Nameplate (kW)	Rotor Dia. (m)	Hub H. (m)	Control	Country of Manufact.
1	Enercon	E53	800	53	73	var. speed	Germany Brasil
2	Vestas	V52	850	52	74	pitch	Italy
3	Gamesa	G52	850	52	74	pitch	Spain/US
4	Vestas RBB	V47	600	47	63	pitch	India
5	Fuhrlander	FL 600	600	50	75	pitch	Germany
6	Enertech	E48	600	48	65	pitch Turbowind design	US
7	Ecotecnia	48	750	48	55	stall	Spain
8	Conergy	900	900	54	70	var. speed Permanent Magn	Germany
9	Unisan	750	750	50	70	var. speed Permanent Magn	Korea
10	Goldwind	750	750	49	60	stall	China
11	AAER	A-1000	1000	58	70	Pitch	Canada
12	Americas Wind Energy	AWE 52-750	750	52	75	Var. Speed Lagerwey	Canada
13	Norwind	750/48	750	48	65	Pitch	Denmark
14	Nordic Windpower	N1000	1000	59	70	Pitch	USA



The Original Short List

Created in Early August 2007

- Fuhrlaender
- Vestas RRB
- Enercon
- AWE
- Norwin



Selection Criteria

1. Manufacturing capacity
2. Technology with no major design flaws
3. Business relationship
4. Desire to be a long term supplier to the US market



Fuhrländer FL 600kW

- Manufacturing Capacity – Fuhrländer has plenty, European Component suppliers require bulk purchase, possibility of US Manufacturing a plus
- Business Relationship – Strong long term family owned company with US partners.
- Design Flaw – Rotor Connected Directly to Gearbox has caused problems in other wind turbines

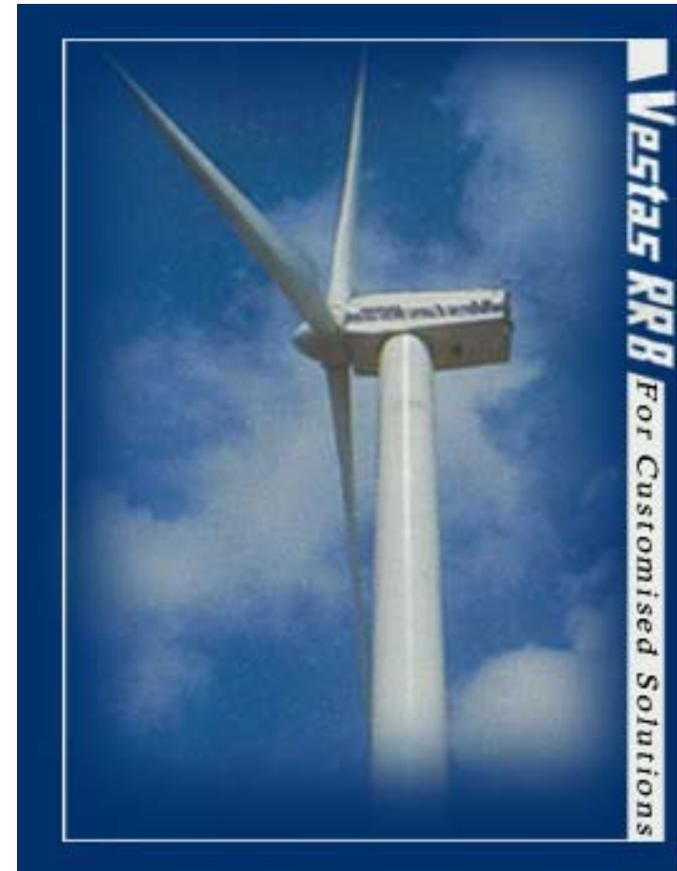


Vestas RRB India LTD

VRRB47 600kW



- Manufacturing Capacity – Expanding facilities in India based on a recent \$55 million investment from Merrill Lynch
- Business Relationship – Via US Distributor, 2 year Warranty available within 7 months..
- Design – None, technology is based on most installed wind turbine worldwide





Enercon E53 850kW

- Manufacturing Capacity – Have spare manufacturing capacity in Brazil
- Business Relationship – As conversations progressed, Enercon eventually returned to its long term position that it is not interested in supplying the US market
- Design – None, perfect technology for population dense regions with noise reducing blade tips, and PM Generator design.



Americas Wind Energy

AWE54 900kW



- Manufacturing Capacity – Virtually manufactured in Toronto, capacity is slow based on long term German bearing suppliers.
- Business Relationship – AWE in Toronto has removed removed US middle men making relationship less cumbersome, company is traded on NYSE
- Design – New power electronics had some problems in Nova Scotia, but have since been rectified.





Norwin NA LTD

N47 750kW

- Manufacturing Capacity – Small manufacturing facility in Denmark, capacity is limited and lead times are over 1 year.
- Business Relationship – Norwin sells directly and through regional brokers. The company has a long standing strong track record.
- Design – Pitch system is Active Stall which is significantly less efficient than active pitch. The rotor diameter is designed for high wind sites and may produce less in HNCC's modest wind regime.





SED's Recommendation

1. **Vestas RRB** - Delivery of wind turbine in First Quarter 2008. Contingent upon SED's due diligence of the wind turbine, and satisfactory business arrangement purchase can be made within two weeks.
2. **AWE** – Good technology, solid business backing, no major design flaws, turbine purchased prior to December 1st would be delivered in November-December of 2008.



Available, Expensive, Long Lead Times

- Fuhrlander
- Norwin



New to the Market

- Elocon, Enertech, Turbowinds 600kW
- Conergy 900kW
- Unison 750kW



Available Turbines

100kW to 500kW

(Not Remanufactured)

- Northern Power 100kW
 - Readily Available, American Manufactured
 - 2007 Model is expensive and unproductive, Model B is expected to decrease cost and increase production for 2008
- Norwin 225kW
 - Available through distributors in US and Canada
 - Costs more than \$3/Watt installed
- WES/Lagerway 250kW
 - Available through Dutch and Canadian distributor, will not be made for 60Hz until 2008





Available Turbines Greater than 1MW

Tier 1

- GE
- Vestas
- Siemens

Tier 2

- Suzlon
- Gamesa
- Mitsubishi
- Nordex

Tier 3

- DeWind
- Clipper
- Fuhrlaender
- Ecotecnia
- Vensys



On Site Wind Power Average Market- Assumptions New York



- Analysis was performed using 100kW, 600kW, 900kW, and 1500kW wind turbines
- Total installed cost for the project will be \$465,000, \$1,600,000, \$2,200,000, and \$4,000,000
- Wind speeds for the analysis are representative of sites within 6.5 m/s wind speed measured at 50m.
- Unlevered return was used as if your facility would pay for the total installed cost of the turbine upfront.
(Creative financing or 3rd party ownership has potential to make the economics more attractive.)
- The cost for electricity is \$0.09 / kWh, not including any demand charges. This value will inflate with CPI at 3%.
- Insurance, operations and maintenance costs inflate at 3%.



On Site Wind Power Average Market New York

	<i>100kW</i>	<i>600kW</i>	<i>900kW</i>	<i>1500kW</i>
<i>Annual Energy Production</i>	220,000	1,200,000	2,200,000	3,750,000
<i>Installed Cost After Incentive</i>	\$381,000	\$1,412,000	\$1,984,000	\$3,692,000
Current				
<i>Internal Rate of Return</i>	3%	4%	5%	5%
<i>Payback Period</i>	17 Years	16 Years	15 Years	15 Years
<i>Lifetime Savings</i>	\$200,000	\$900,000	\$2,300,000	\$3,500,000
With Net Metering				
<i>Internal Rate of Return</i>	8%	9%	10%	10%
<i>Payback Period</i>	12 Years	11 Years	10 Years	10 Years
<i>Lifetime Savings</i>	\$400,000	\$2,000,000	\$4,000,000	\$6,000,000



On Site Wind Power Progressive Market- Assumptions Massachusetts

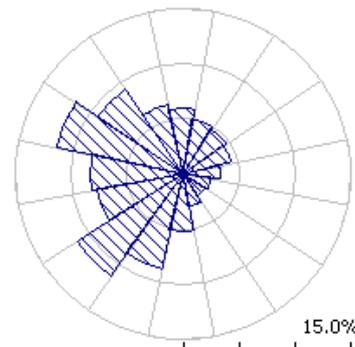
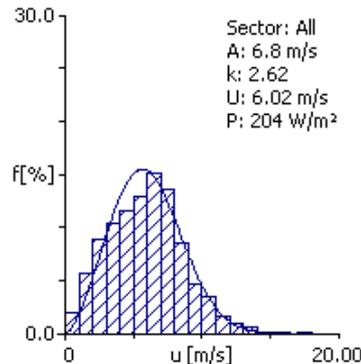
- Analysis assumed 100kW, 600kW, 900kW and 1.5MW wind turbines
- Total Installed Cost for the project will be \$465,000, \$1,600,000, \$2,200,000 and \$4,000,000 respectively.
- Wind speeds for the analysis are representative of sites with wind speeds approximately 6.25m/s measured at 50m.
- The MTC will buy down \$225,000 dollars for the 100kW and \$400,000 for the 600kW, 900kW and 1.5MW project .
- Unlevered return was used as if your facility would pay for the total installed cost of the turbine upfront.
(Creative financing or 3rd party ownership has potential to make the economics more attractive.)
- The cost for electricity is 0.15 \$/ kWh not including any demand charges this value will inflate with CPI at 3%.
- The project will receive value for the creation of Renewable Energy Credits at \$0.03/kWh
- Insurance, operations and maintenance costs inflate at 3%.





On Site Wind Power Progressive Market Massachusetts

	100kW	600kW	900kW	1500kW
Annual Energy Production	180,000	1,000,000	1,950,000	3,300,000
Installed Cost After Incentive	\$240,000	\$1,350,000	\$1,850,000	\$3,600,000
Internal Rate of Return	13%	15-17%	14-16%	14-16%
Payback Period	8-10 Years	7-9 Years	6-8 Years	6-8 Years
Lifetime Savings	\$700,000	\$4,000,000	\$5,500,000	\$7,500,000





Operations and Maintenance

Annual Operational Costs	Quantity	Rate	Total
Host Site Services			
Facilities representative training	2	\$0	\$0
Communication management	1	\$0	\$0
SED Services			
Scheduled O&M services (2/yr.)	1	\$10,000	\$10,000
Remote Monitoring Services	1	\$3,900	\$3,900
Unscheduled Maintenance (T&M estimates)	2	\$3,500	\$7,000
Replacement parts and on-site storage fees	1	\$1,000	\$1,000
Owner Costs (Escrow or Reserve Fund Non-Escalating)			
Capital Reserve – Major failures	1	\$9,000	\$9,000
Capital Reserve – Major Scheduled Maintenances	1	\$1,000	\$1,000
Total			\$31,900

- Single Turbine Average should be levelized as 25-35\$/MWhr



Thanks for your time and consideration!



Kevin M. Schulte

Founder/Owner

Director of Business Development

**Sustainable Energy
Developments, Inc.**

www.sed-net.com