

1.8 mW Wind Generating Turbine - Sensitivity Working Copy
Town of Wellfleet - 3/20/10 - Draft - Data Subject To Revision

Turn-Key Project Cost	\$5,185,000	MRET grant, year 1 =	\$0
NSTAR Interconnect	\$115,000		
Total Cost	\$5,300,000	Bond Interest @ 4.500%	Period (yrs) 15
	Energy Rate \$0.1396	/Kwh (starting value)	Change from baseline: 0%
	REC Sales \$0.032500	/Kwh (starting value)	Long term REC Sales: \$0.0200
	Energy Rate \$0.1237	/Kwh EX Transition (starting value)	
	*15 Year Bond		**Other

Year	Energy Revenue	Rate ¢/kWh ex Transition	Transition Rate ¢/kWh	----- RECs ----- Sales	Rate ¢/kwh	Gross Revenue	Principal & Interest	Insurance	O & M	Costs	Net Revenue	Cumulative Revenue	2010 \$ Cum. R¢
	\$0	12.37	1.59	\$0	3.25	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1	\$0	12.37	1.59	\$0	3.25	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	\$441,766	12.64	1.59	\$50,440	3.25	\$492,206	\$496,500	\$23,577	\$0	\$14,800	-\$42,671	-\$42,671	-\$41,
3	\$703,748	12.92	1.59	\$145,500	3.00	\$849,248	\$496,500	\$24,096	\$0	\$15,126	\$313,527	\$270,855	\$258,
4	\$711,602	13.20	1.47	\$145,500	3.00	\$857,102	\$496,500	\$24,626	\$75,000	\$15,458	\$245,518	\$516,373	\$488,
5	\$719,759	13.50	1.35	\$133,375	2.75	\$853,134	\$496,500	\$25,168	\$77,025	\$15,798	\$238,643	\$755,016	\$707,
6	\$728,227	13.79	1.22	\$133,375	2.75	\$861,602	\$496,500	\$25,721	\$79,105	\$16,146	\$244,130	\$999,146	\$926,
7	\$737,011	14.10	1.10	\$121,250	2.50	\$858,261	\$496,500	\$26,287	\$97,061	\$5,352	\$233,060	\$1,232,206	\$1,130,
8	\$746,118	14.41	0.98	\$121,250	2.50	\$867,368	\$496,500	\$26,865	\$99,682	\$5,469	\$238,851	\$1,471,057	\$1,335,
9	\$755,557	14.72	0.86	\$109,125	2.25	\$864,682	\$496,500	\$27,456	\$102,374	\$5,590	\$232,762	\$1,703,820	\$1,531,
10	\$765,334	15.05	0.73	\$109,125	2.25	\$874,459	\$496,500	\$28,061	\$105,138	\$5,713	\$239,048	\$1,942,867	\$1,727,
11	\$775,456	15.38	0.61	\$97,000	2.00	\$872,456	\$496,500	\$28,678	\$107,976	\$5,838	\$233,464	\$2,176,331	\$1,915,
12	\$785,932	15.72	0.49	\$97,000	2.00	\$882,932	\$496,500	\$29,309	\$110,892	\$5,967	\$240,264	\$2,416,596	\$2,104,
13	\$796,768	16.06	0.37	\$97,000	2.00	\$893,768	\$496,500	\$29,954	\$113,886	\$6,098	\$247,331	\$2,663,926	\$2,295,
14	\$807,974	16.41	0.24	\$97,000	2.00	\$904,974	\$496,500	\$30,613	\$116,961	\$6,232	\$254,668	\$2,918,595	\$2,487,
15	\$819,556	16.78	0.12	\$97,000	2.00	\$916,556	\$496,500	\$31,286	\$120,119	\$6,369	\$262,282	\$3,180,877	\$2,680,
16	\$831,524	17.14	0.00	\$97,000	2.00	\$928,524	\$496,500	\$31,974	\$123,362	\$6,510	\$270,178	\$3,451,055	\$2,875,
17	\$849,818	17.52	0.00	\$97,000	2.00	\$946,818	\$0	\$32,678	\$126,693	\$6,653	\$780,795	\$4,231,850	\$3,426,
18	\$868,514	17.91	0.00	\$97,000	2.00	\$965,514	\$0	\$33,397	\$130,113	\$6,799	\$795,205	\$5,027,055	\$3,976,
19	\$887,621	18.30	0.00	\$97,000	2.00	\$984,621	\$0	\$34,131	\$133,626	\$6,949	\$809,915	\$5,836,969	\$4,523,
20	\$907,149	18.70	0.00	\$97,000	2.00	\$1,004,149	\$0	\$34,882	\$137,234	\$7,102	\$824,931	\$6,661,900	\$5,069,
21	\$927,106	19.12	0.00	\$97,000	2.00	\$1,024,106	\$0	\$35,650	\$140,940	\$7,258	\$840,259	\$7,502,159	\$5,612,
22	\$947,502	19.54	0.00	\$97,000	2.00	\$1,044,502	\$0	\$36,434	\$144,745	\$7,418	\$855,906	\$8,358,064	\$6,154,

Notes: 4850000 Kwh/yr Based on 80% Availability (P90)

FirstYear Availability	64%	
Energy Inflation Rate	2.20%	* Cape Cod Five 1/21/10
General Inflation Rate	2.20%	REC sales variable by year
Constant Dollars Deflator	2.20%	Based on net metering
Vestas Service Contract @ 2.7% yearly increment, years 4-11 (+20%, yr 7-11)		G-1 Rate Class @ 13.96 cents/kwh
** Other Costs: Environmental monitoring - \$10,000/yr (5 yrs); Town administration - \$4,800		
	General inflation adjust	102.20%
	Assessed valuation	\$2,329,108,470

\$16,514,294	\$2,232,940	\$18,746,981	\$7,447,500	\$620,842	\$2,141,930	\$178,645	\$8,358,064	\$8,358,064	\$6,154,
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2010 \$'s

Adjust

Factor

2010 \$'s Adjust Factor	2010 \$'s Net	2010 Gross	2010 Bond	2010 O&M	2010 \$s REC	2010 \$s Ins	2010 Other	NPV @7%	Principal Bal	Principal Pay	Interest Pay
1	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,300,000	\$353,333	\$238,500
0.978473581	-\$41,753	\$481,610	\$485,812	\$0	\$49,354	\$23,069	\$14,481	-\$39,880	\$4,946,667	\$353,333	\$222,600
0.957410549	\$300,174	\$813,079	\$475,354	\$0	\$139,303	\$23,069	\$14,481	\$273,846	\$4,593,333	\$353,333	\$206,700
0.936800929	\$230,001	\$802,934	\$465,122	\$70,260	\$136,305	\$23,069	\$14,481	\$200,416	\$4,240,000	\$353,333	\$190,800
0.91663496	\$218,749	\$782,013	\$455,109	\$70,604	\$122,256	\$23,069	\$14,481	\$182,060	\$3,886,667	\$353,333	\$174,900
0.896903092	\$218,961	\$772,773	\$445,312	\$70,949	\$119,624	\$23,069	\$14,481	\$174,061	\$3,533,333	\$353,333	\$159,000
0.87759598	\$204,533	\$753,206	\$435,726	\$85,181	\$106,409	\$23,069	\$4,697	\$155,298	\$3,180,000	\$353,333	\$143,100
0.858704481	\$205,103	\$744,813	\$426,347	\$85,597	\$104,118	\$23,069	\$4,697	\$148,745	\$2,826,667	\$353,333	\$127,200
0.840219649	\$195,571	\$726,523	\$417,169	\$86,016	\$91,689	\$23,069	\$4,697	\$135,470	\$2,473,333	\$353,333	\$111,300
0.822132729	\$196,529	\$718,921	\$408,189	\$86,437	\$89,715	\$23,069	\$4,697	\$130,026	\$2,120,000	\$353,333	\$95,400
0.804435156	\$187,806	\$701,834	\$399,402	\$86,860	\$78,030	\$23,069	\$4,697	\$118,681	\$1,766,667	\$353,333	\$79,500
0.787118548	\$189,117	\$694,972	\$390,804	\$87,285	\$76,350	\$23,069	\$4,697	\$114,148	\$1,413,333	\$353,333	\$63,600
0.770174704	\$190,488	\$688,358	\$382,392	\$87,712	\$74,707	\$23,069	\$4,697	\$109,818	\$1,060,000	\$353,333	\$47,700
0.753595601	\$191,917	\$681,984	\$374,160	\$88,141	\$73,099	\$23,069	\$4,697	\$105,678	\$706,667	\$353,333	\$31,800
0.737373386	\$193,400	\$675,844	\$366,106	\$88,572	\$71,525	\$23,069	\$4,697	\$101,718	\$353,333	\$353,333	\$15,900
0.721500378	\$194,934	\$669,931	\$358,225	\$89,006	\$69,986	\$23,069	\$4,697	\$97,925	\$0	\$0	\$0
0.705969059	\$551,217	\$668,424	\$0	\$89,441	\$68,479	\$23,069	\$4,697	\$264,482	\$0	\$0	\$0
0.690772073	\$549,305	\$666,950	\$0	\$89,879	\$67,005	\$23,069	\$4,697	\$251,741	\$0	\$0	\$0
0.675902224	\$547,423	\$665,508	\$0	\$90,318	\$65,563	\$23,069	\$4,697	\$239,624	\$0	\$0	\$0
0.66135247	\$545,570	\$664,096	\$0	\$90,760	\$64,151	\$23,069	\$4,697	\$228,100	\$0	\$0	\$0
0.64711592	\$543,745	\$662,715	\$0	\$91,204	\$62,770	\$23,069	\$4,697	\$217,139	\$0	\$0	\$0
0.633185831	\$541,947	\$661,364	\$0	\$91,650	\$61,419	\$23,069	\$4,697	\$206,712	\$0	\$0	\$0
	\$6,154,736	\$14,697,852	\$6,285,230	\$1,625,873	\$1,791,857	\$484,459	\$147,554	\$3,415,809		\$5,300,000.00	\$1,908,000

1.8Mw Turbine 20.5 Years - 2010 Dollars

Gross Revenue	\$14,697,852
MRET Grant	\$0
Turn-Key Cost + Interest	\$6,285,230
Insurance	\$484,459
O & M	\$1,625,873
Env. Monitoring & Admin	\$147,554
Total Cost	\$8,543,116

Net Revenue (2010 Dollars)	\$6,154,736
Average Revenue (20.5 yrs)	\$300,231

Average Return on Investment	5.7%
Net Present Value @ 7%	\$3,415,809
Maximum tax funding required	\$41,753
(Avg \$4/yr for 2 years, per \$500,000 assessment)	

Notes:

- Assumes \$0 grant funding
- 13.96 Cents per KWh energy starting value
- Energy Inflation 2.2%
- General Inflation 2.2%
- Bond interest rate 4.5%
- Service Contract, inflated at 2.7%
 - \$75,000 yrs 4 - 6; + 20% yrs 7 - 22
- Constant Dollars Deflator 2.2%
- Energy output = 4.85 mWh / year
- All data is subject to revision
- Interconnect costs are provisional
- Assessed valuation = \$2,329,108,470

