TVP Stats Bulletin

U.S. DOE-EPRI Wind Turbine Verification Program

A joint program of the U.S. Department of Energy and the Electric Power Research Institute

Issue 15 August 2003

2nd Quarter 2003 *TVP STATS*

Kotzebue, AK: Kotzebue Electric Association **Atlantic Orient AOC 15/50:** T1-3 energized Jul-97; T4-10 energized May-99
Northern Power System NW100: T14 energized Aug-02

Turbine	Swept Area (m^2)	Apr-03 kWh	May-03 kWh	Jun-03 kWh	2nd Qtr-03 kWh	Quarter CF	Qtr kWh/m^2	YTD kWh
1	176.7	9,484	7,372	1,380	18,237	12.7%	103.2	41,728
2	176.7	10,047	6,778	4,462	21,287	14.8%	120.5	44,888
3	176.7	7,713	6,533	3,009	17,254	12.0%	97.6	39,871
4	176.7	6,030	4,392	4,776	15,197	10.5%	86.0	27,572
5	176.7	1,056	1,140	4,559	6,755	4.7%	38.2	6,755
6	176.7	10,095	6,898	4,227	21,220	14.7%	120.1	42,662
7	176.7	9,493	6,161	4,211	19,864	13.8%	112.4	43,471
8	176.7	6,927	5,987	3,927	16,841	11.7%	95.3	37,954
9	176.7	10,252	6,001	4,688	20,941	14.5%	118.5	47,082
10	176.7	3,968	7,432	5,006	16,406	11.4%	92.8	16,406
14	287.0	10,980	13,136	5,278	29,394	13.5%	102.4	52,132
Project Totals	2054.0	86,045	71,831	45,522	203,398	12.3%	99.0	400,522

Rating	66 kW	Apr-03 WS (m/s)	May-03 WS (m/s)	Jun-03 WS (m/s)	Qtr WS (m/s)
Mean hub height (26.5 m) WS		5.8	5.8	4.2	5.3

Buffalo Mountain, TN: Tennessee Valley Authority **Vestas V47:** Energized Sep-00, Full Commercial Operation Apr-01

Turbine	Swept Area (m^2)	Apr-03 kWh	May-03 kWh	Jun-03 kWh	2nd Qtr-03 kWh	Quarter CF	Qtr kWh/m^2	YTD kWh
1	1,735.6	152,558	125,460	72,578	350,596	24.3%	202.0	731,978
2	1,735.6	142,157	124,881	72,310	339,348	23.5%	195.5	708,309
3	1,735.6	133,770	127,875	63,929	325,574	22.6%	187.6	703,282
Project Totals	5,206.9	428,485	378,216	208,817	1,015,518	23.5%	195.0	2,143,569

Rating	660 kW	Apr-03 WS (m/s)	May-03 WS (m/s)	Jun-03 WS (m/s)	Qtr WS (m/s)
Mean (50 m) WS		7.8	6.9	5.7	6.8

Algona, IA: Cedar Falls (primary owner), Algona Municipal Utilities (host) **Zond Z-50:** Energized Sept-98

Turbine	Swept Area (m^2)	Apr-03 kWh	May-03 kWh	Jun-03 kWh	2nd Qtr-03 kWh	Quarter CF	Qtr kWh/m^2	YTD kWh
1	1,963.5	243,018	178,322	118,786	540,126	33.0%	275.1	1,289,643
2	1,963.5	234,175	181,551	128,376	544,102	33.2%	277.1	1,080,770
3	1,963.5	225,784	173,931	121,437	521,152	31.8%	265.4	1,233,229
Project Totals	5,890.5	702,977	533,804	368,599	1,605,380	32.7%	272.5	3,603,642

Rating	750 kW	Apr-03 WS (m/s)	May-03 WS (m/s)	Jun-03 WS (m/s)	Qtr WS (m/s)
Mean hub height (50 m) WS		8.4	7.5	6.3	7.4

Springview, NE: Nebraska Public Power District (primary owner), KBR (host) **Zond Z-50:** Energized Oct-98 *

Turbine	Swept Area (m^2)	Apr-03 kWh	May-03 kWh	Jun-03 kWh	2nd Qtr-03 kWh	Quarter CF	Qtr kWh/m^2	YTD kWh
1	1,963.5	240,567	213,240	161,420	615,227	37.6%	313.3	1,197,360
2	1,963.5	238,451	192,777	154,489	585,717	35.8%	298.3	1,216,105
Project Totals	3,927.0	479,018	406,017	315,909	1,200,944	36.7%	305.8	2,413,465

Rating	750 kW	Apr-03 WS (m/s)	May-03 WS (m/s)	Jun-03 WS (m/s)	Qtr WS (m/s)
Mean hub height (65 m) WS		8.3	7.6	6.7	7.5

Glenmore, WI: Wisconsin Public Service **Tacke 600e:** Energized Feb-98

Turbine	Swept Area (m^2)	Apr-03 kWh	May-03 kWh	Jun-03 kWh	2nd Qtr-03 kWh	Quarter CF	Qtr kWh/m^2	YTD kWh
1	1,661.9	6,682	94,991	50,996	152,669	11.7%	91.9	330,175
2	1,661.9	39,560	107,246	63,958	210,764	16.1%	126.8	533,810
Project Totals	3,323.8	46,242	202,237	114,954	363,433	13.9%	109.3	863,985

Rating	600 kW	Apr-03 WS (m/s)	May-03 WS (m/s)	Jun-03 WS (m/s)	Qtr WS (m/s)
Mean hub height (60 m) WS		N/A	N/A	N/A	N/A

2nd Quarter 2003 *TVP STATS*

Big Spring, TX: York Research (project owner), TXU (power purchaser)

Turbine	Swept Area (m^2)	Apr-03 kWh	May-03 kWh	Jun-03 kWh	2nd Qtr-03 kWh	Quarter CF	Qtr kWh/m^2	YTD kWh
1	1,735.6	231,028	73,520	92,717	397,265	27.6%	228.9	733,216
2	1,735.6	221,022	147,856	140,776	509,655	35.4%	293.6	1,026,475
3	1,735.6	217,200	146,138	129,350	492,688	34.2%	283.9	987,526
4	1,735.6	214,638	144,955	141,021	500,614	34.7%	288.4	1,007,302
5	1,735.6	218,696	145,737	139,948	504,381	35.0%	290.6	1,019,795
6	1,735.6	222,312	150,878	112,292	485,482	33.7%	279.7	1,021,809
7	1,735.6	216,881	141,904	135,117	493,902	34.3%	284.6	1,031,418
8	1,735.6	220,776	143,956	129,054	493,785	34.3%	284.5	1,010,818
9	1,735.6	203,741	94,180	133,301	431,222	29.9%	248.5	954,581
10	1,735.6	228,934	151,333	138,078	518,345	36.0%	298.6	1,073,003
11	1,735.6	226,178	143,670	28,677	398,524	27.6%	229.6	941,466
12	1,735.6	219,796	146,476	138,815	505,086	35.0%	291.0	1,035,077
13	1,735.6	219,708	142,699	140,733	503,140	34.9%	289.9	957,053
14	1,735.6	221,909	139,688	122,450	484,047	33.6%	278.9	994,104
15	1,735.6	195,251	141,960	125,576	462,787	32.1%	266.6	932,599
16	1,735.6	202,580	131,268	125,010	458,858	31.8%	264.4	940,869
17	1,735.6	200,957	142,175	126,454	469,587	32.6%	270.6	959,283
18	1,735.6	191,629	145,730	128,513	465,872	32.3%	268.4	967,634
19	1,735.6	136,389	146,954	124,462	407,805	28.3%	235.0	825,413
20	1,735.6	205,688	146,813	126,625	479,126	33.2%	276.1	988,477
21	1,735.6	209,115	144,471	129,160	482,746	33.5%	278.1	996,879
22	1,735.6	210,624	144,369	128,570	483,563	33.5%	278.6	976,622
23	1,735.6	207,957	149,005	136,080	493,042	34.2%	284.1	978,054
24	1,735.6	212,600	151,461	67,457	431,518	29.9%	248.6	933,605
25	1,735.6	204,866	150,104	131,908	486,878	33.8%	280.5	990,642
26	1,735.6	195,529	140,836	136,423	472,788	32.8%	272.4	979,392
27	1,735.6	245,245	170,490	149,750	565,486	39.2%	325.8	1,125,936
28	1,735.6	219,999	156,757	137,876	514,632	35.7%	296.5	1,030,272
29	1,735.6	216,751	153,166	138,453	508,370	35.3%	292.9	1,010,515
30	1,735.6	223,512	165,501	143,386	532,399	36.9%	306.7	1,059,780
31	1,735.6	234,853	160,689	121,985	517,528	35.9%	298.2	1,094,073
32	1,735.6	230,733	164,423	145,435	540,592	37.5%	311.5	1,069,480
33	1,735.6	198,614	157,779	132,222	488,615	33.9%	281.5	881,103
34	1,735.6	221,358	157,006	129,842	508,207	35.3%	292.8	1,020,533
35	1,735.6	225,818	157,786	130,730	514,334	35.7%	296.3	1,026,086
36	1,735.6	9,741	0	0	9,741	0.7%	5.6	163,504
37	1,735.6	227,191	154,026	93,251	474,468	32.9%	273.4	953,832
38	1,735.6	235,672	162,959	139,681	538,312	37.3%	310.2	618,865
39	1,735.6	111,743	0	0	111,743	7.8%	64.4	603,252
40	1,735.6	241,548	169,832	133,766	545,145	37.8%	314.1	1,106,158
41	1,735.6	248,462	173,049	152,209	573,720	39.8%	330.6	1,058,056
42	1,735.6	227,487	148,458	131,489	507,434	35.2%	292.4	1,008,982
V47s Totals	72,897.0	8,774,731	5,900,057	5,088,642	19,763,430	32.6%	271.1	40,093,538

Rating	660 kW	Apr-03 WS (m/s)	May-03 WS (m/s)	Jun-03 WS (m/s)	Qtr WS (m/s)
Mean hub height (65 m) WS		8.9	7.5	6.5	7.6

Turbine	Swept Area (m^2)	Apr-03 kWh	May-03 kWh	Jun-03 kWh	2nd Qtr-03 kWh	Quarter CF	Qtr kWh/m^2	YTD kWh
A	3422.6	486,742	288,215	260,000	1,034,956	28.7%	302.4	1,896,591
B	3422.6	443,243	235,273	244,957	923,473	25.6%	269.8	1,938,710
C	3422.6	505,912	336,088	292,111	1,134,111	31.5%	331.4	2,279,328
D	3422.6	468,169	309,222	69,171	846,562	23.5%	247.3	1,618,200
V66s Totals	13,690.3	1,904,067	1,168,798	866,238	3,939,103	27.3%	287.7	7,732,829
Project Totals	86,587.3	10,678,798	7,068,855	5,954,880	23,702,533	31.6%	273.7	47,826,367

Rating	1650 kW	Apr-03 WS (m/s)	May-03 WS (m/s)	Jun-03 WS (m/s)	Qtr WS (m/s)
Mean hub height (80 m) WS		9.8	8.6	7.4	8.6

TVP Contacts

for more information...

Electric Power Research Institute
Chuck McGowin, Mgr. Wind Power
Palo Alto, CA
650.855.2445, fax 650.855.8759
Email: cmcgowin@epri.com

U.S. Department of Energy
Wind Program
Thomas Hall, Energy Technology Program Specialist
Washington, DC
202.586.8302, fax 202.586.5124
Email: thomas.hall@ee.doe.gov

National Renewable Energy Laboratory
Brian Smith, Wind & Hydropower Technology Manager
Golden, CO
303.384.6911, fax 303.384.6901
Email: brian_smith@nrel.gov

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