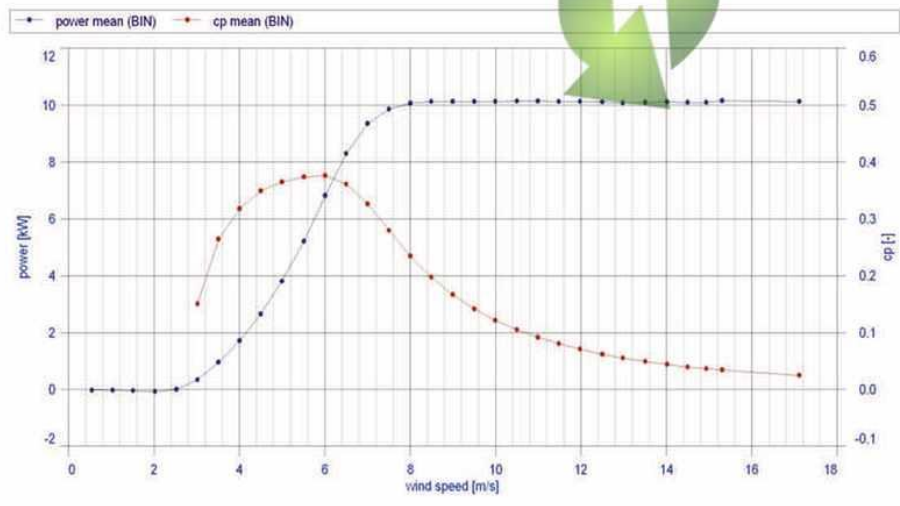
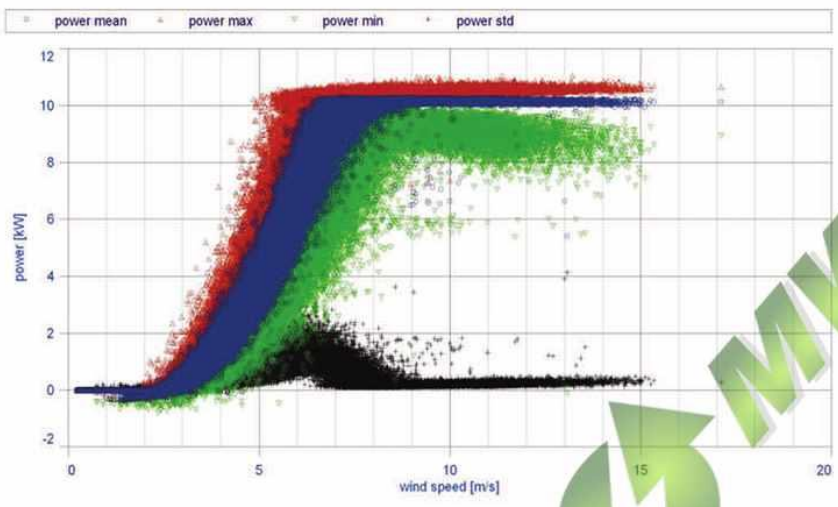



Enclosure 11 Results of the power curve

Power Performance Test based on IEC 61400-12-1			
site:	Kaiser-Wilhelm-Koog	document:	4285 10 07206 258-A-0002-v
wind turbine type:	Tozzi Nord	in charge:	Richard Frennesen B.Eng.
rated power:	10 kW	checked:	Dipl.-Ing. Klaus Buchmann
anemometer type:	Thies First Class	date:	2012-08-10
start of period:	2012-01-06, 00:00	sector 1:	182.5° to 273°
end of period:	2012-06-12, 12:00	sector 2:	-
measured data sets:	202001	sector 3:	-
used data sets:	49256	sector 4:	-
1 Hz wind speed samples averaged over 1 minute, normalised to ref. air density of 1.225 kg/m³			



PP-v1.3.2

Power Performance Test based on IEC 61400-12-1													
site:		Kaiser-Wilhelm-Koog		document:		4285 10 07206 258-A-0002-1							
wind turbine type:		Tozzi Nord		in charge:		Richard Frennesen B.Eng.							
rated power:		10 kW		checked:		Dipl.-Ing. Klaus Buchmann							
anemometer type:		Thies First Class		date:		2012-08-10							
start of period:		2012-01-06, 00:00		sector 1:		182.5° to 273°							
end of period:		2012-06-12, 12:00		sector 2:		-							
measured data sets:		202001		sector 3:		-							
used data sets:		49256		sector 4:		-							
1 Hz wind speed samples averaged over 1 minute, normalised to ref. air density of 1.225 kg/m³													
bin number	WS from	WS to	no. of datasets	wind speed mean	power mean	cp value	power min	power max	power std	turbulence mean	turbulence std	wind shear mean	wind shear std
[°]	[m/s]	[m/s]	[]	[m/s]	[kW]	[°]	[kW]	[kW]	[kW]	[%]	[%]	[°]	[°]
1	0.25	0.75	247	0.54	-0.0	-	-0.1	-0.0	0.0	16.2	9.0	0.203	0.647
2	0.75	1.25	571	1.03	-0.0	-	-0.3	-0.0	0.0	9.4	7.1	0.360	0.687
3	1.25	1.75	726	1.50	-0.0	-	-0.4	-0.0	0.1	7.8	5.8	0.221	0.426
4	1.75	2.25	905	2.02	-0.1	-	-0.4	0.1	0.1	8.0	5.4	0.202	0.215
5	2.25	2.75	1504	2.52	-0.0	-	-0.4	0.8	0.1	8.0	4.7	0.190	0.185
6	2.75	3.25	2268	3.01	0.3	0.151	-0.3	1.6	0.3	8.8	4.3	0.155	0.152
7	3.25	3.75	2812	3.51	1.0	0.264	-0.2	2.8	0.4	8.8	3.7	0.161	0.131
8	3.75	4.25	3072	4.00	1.7	0.318	-0.1	4.2	0.5	8.9	3.4	0.163	0.126
9	4.25	4.75	3048	4.50	2.7	0.349	-0.1	5.8	0.6	8.8	3.1	0.151	0.114
10	4.75	5.25	2660	4.99	3.8	0.365	0.6	8.0	0.8	9.1	3.0	0.130	0.101
11	5.25	5.75	2827	5.51	5.2	0.374	1.5	9.8	1.0	9.3	2.8	0.131	0.096
12	5.75	6.25	3135	6.01	6.8	0.376	3.1	10.2	1.1	9.2	2.7	0.134	0.090
13	6.25	6.75	3049	6.50	8.3	0.361	4.1	10.3	1.0	9.2	2.5	0.136	0.084
14	6.75	7.25	2898	7.00	9.3	0.326	6.2	10.3	0.7	9.1	2.4	0.136	0.075
15	7.25	7.75	2816	7.50	9.9	0.280	6.3	10.3	0.4	9.4	2.3	0.130	0.069
16	7.75	8.25	2978	8.00	10.1	0.235	6.7	10.3	0.2	9.3	2.1	0.147	0.067
17	8.25	8.75	2956	8.49	10.1	0.198	7.0	10.3	0.1	9.3	2.0	0.149	0.066
18	8.75	9.25	2365	8.99	10.1	0.167	6.5	10.3	0.2	9.3	2.0	0.146	0.064
19	9.25	9.75	1902	9.50	10.1	0.141	6.5	10.3	0.2	9.5	2.1	0.142	0.059
20	9.75	10.25	1658	9.99	10.1	0.121	6.6	10.3	0.2	9.6	2.0	0.147	0.056
21	10.25	10.75	1465	10.50	10.1	0.105	7.5	10.3	0.1	9.6	1.9	0.147	0.052
22	10.75	11.25	1205	10.99	10.1	0.091	9.7	10.3	0.1	9.5	1.9	0.147	0.051
23	11.25	11.75	903	11.48	10.1	0.080	9.0	10.3	0.1	9.7	1.9	0.148	0.049
24	11.75	12.25	514	11.98	10.1	0.070	8.6	10.3	0.1	9.5	1.9	0.145	0.048
25	12.25	12.75	290	12.50	10.1	0.062	9.6	10.3	0.1	9.5	2.0	0.144	0.050
26	12.75	13.25	182	12.98	10.1	0.055	5.4	10.2	0.4	9.7	1.9	0.143	0.049
27	13.25	13.75	134	13.50	10.1	0.049	9.3	10.2	0.1	9.7	2.0	0.145	0.049
28	13.75	14.25	78	14.02	10.1	0.044	10.0	10.2	0.1	10.0	2.3	0.137	0.043
29	14.25	14.75	43	14.50	10.1	0.040	9.9	10.2	0.1	9.3	1.9	0.143	0.042
30	14.75	15.25	21	14.94	10.1	0.036	9.9	10.2	0.1	9.0	1.6	0.134	0.037
31	15.25	15.75	2	15.31	10.2	0.034	10.1	10.2	0.0	9.3	0.9	0.151	0.036
32	15.75	16.25	-	-	-	-	-	-	-	-	-	-	-
33	16.25	16.75	-	-	-	-	-	-	-	-	-	-	-
34	16.75	17.25	1	17.11	10.1	0.024	10.1	10.1	0.0	7.0	0.0	0.126	0.000
35	17.25	17.75	-	-	-	-	-	-	-	-	-	-	-
36	17.75	18.25	-	-	-	-	-	-	-	-	-	-	-
37	18.25	18.75	-	-	-	-	-	-	-	-	-	-	-
38	18.75	19.25	-	-	-	-	-	-	-	-	-	-	-
39	19.25	19.75	-	-	-	-	-	-	-	-	-	-	-
40	19.75	20.25	-	-	-	-	-	-	-	-	-	-	-
41	20.25	20.75	-	-	-	-	-	-	-	-	-	-	-
42	20.75	21.25	-	-	-	-	-	-	-	-	-	-	-
43	21.25	21.75	-	-	-	-	-	-	-	-	-	-	-
44	21.75	22.25	-	-	-	-	-	-	-	-	-	-	-
45	22.25	22.75	-	-	-	-	-	-	-	-	-	-	-
46	22.75	23.25	-	-	-	-	-	-	-	-	-	-	-
47	23.25	23.75	-	-	-	-	-	-	-	-	-	-	-
48	23.75	24.25	-	-	-	-	-	-	-	-	-	-	-
49	24.25	24.75	-	-	-	-	-	-	-	-	-	-	-
50	24.75	25.25	-	-	-	-	-	-	-	-	-	-	-
51	25.25	25.75	-	-	-	-	-	-	-	-	-	-	-
52	25.75	26.25	-	-	-	-	-	-	-	-	-	-	-
53	26.25	26.75	-	-	-	-	-	-	-	-	-	-	-
54	26.75	27.25	-	-	-	-	-	-	-	-	-	-	-
55	27.25	27.75	-	-	-	-	-	-	-	-	-	-	-
56	27.75	28.25	-	-	-	-	-	-	-	-	-	-	-
57	28.25	28.75	-	-	-	-	-	-	-	-	-	-	-
58	28.75	29.25	-	-	-	-	-	-	-	-	-	-	-
59	29.25	29.75	-	-	-	-	-	-	-	-	-	-	-
60	29.75	30.25	-	-	-	-	-	-	-	-	-	-	-

FP-v1.2.2