

Project:

Projekt Kępno

Printed/Page

2011-11-16 11:24 / 1

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Energie Odnawialne S.C.

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PL-73-100 Stargard Szczecinski

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Grzegorz Buczma / g.buczma@domrel.pl

Calculated:

2011-11-16 11:20/2.7.486

DECIBEL - Main Result

Calculation: Pilot, variant 1

Noise calculation model:

ISO 9613-2 General

Wind speed:

8,0 m/s

Ground attenuation:

General, Ground factor: 1,0

Meteorological coefficient, C0:

0,0 dB

Type of demand in calculation:

1: WTG noise is compared to demand (DK, DE, SE, NL etc.)

Noise values in calculation:

All noise values are mean values (Lwa) (Normal)

Pure tones:

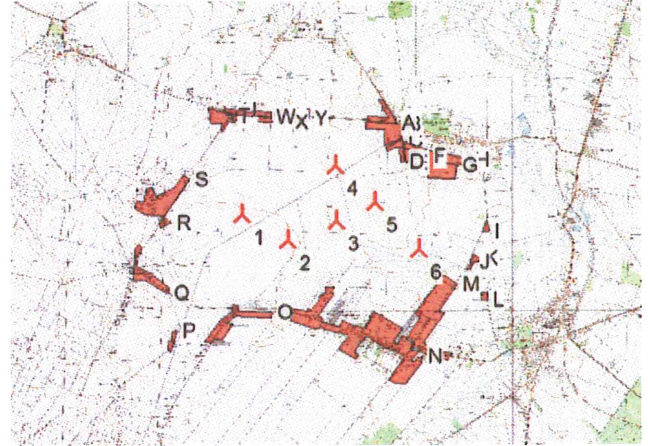
Pure and Impulse tone penalty are added to WTG source noise

Height above ground level, when no value in NSA object:

1,5 m Allow override of model height with height from NSA object

Deviation from "official" noise demands. Negative is more restrictive, positive is less restrictive.:

0,0 dB(A)



Scale 1:75 000

New WTG

Noise sensitive area

WTGs

Poland UKLAD 65 4				WTG type		Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Noise data		Wind speed [m/s]	Hub height [m]	LwA_ref [dB(A)]	Pure tones	Octave data
East	North	Z	Row data/Description	Valid	Manufact.					Creator	Name					
Poland UKLAD 65 4																
1	3 791 814	5 579 558	190,6 KEP1	Yes	Siemens	SWT-2.3-101-2 300	2 300	101,0	99,5	EMD	Level 0 - Calculated - 05-2010	8,0	99,5	107,0	0 dB	Yes
2	3 792 301	5 579 313	190,1 KEP2	Yes	Siemens	SWT-2.3-101-2 300	2 300	101,0	99,5	EMD	Level 0 - Calculated - 05-2010	8,0	99,5	107,0	0 dB	Yes
3	3 792 797	5 579 525	183,4 KEP3	Yes	Siemens	SWT-2.3-101-2 300	2 300	101,0	99,5	EMD	Level 0 - Calculated - 05-2010	8,0	99,5	107,0	0 dB	Yes
4	3 792 770	5 580 099	188,0 KEP4	Yes	Siemens	SWT-2.3-101-2 300	2 300	101,0	99,5	EMD	Level 0 - Calculated - 05-2010	8,0	99,5	107,0	0 dB	Yes
5	3 793 197	5 579 732	187,9 KEP5	Yes	Siemens	SWT-2.3-101-2 300	2 300	101,0	99,5	EMD	Level 0 - Calculated - 05-2010	8,0	99,5	107,0	0 dB	Yes
6	3 793 673	5 579 259	177,5 KEP7	Yes	Siemens	SWT-2.3-101-2 300	2 300	101,0	99,5	EMD	Level 0 - Calculated - 05-2010	8,0	99,5	107,0	0 dB	Yes

Calculation Results**Sound Level**

Poland UKLAD 65 4				Demands		Sound Level		Demands fulfilled ?	
No.	Name	East	North	Z [m]	Imission height [m]	Noise [dB(A)]	From WTGs [dB(A)]	Noise	
	A 6MN/RM	3 793 091	5 580 564	180,5	1,5	40,0	38,7	Yes	
	B 7MN/RM	3 793 284	5 580 316	181,7	1,5	40,0	40,2	No	
	C 8MN/RM	3 793 307	5 580 259	184,1	1,5	40,0	40,7	No	
	D 1RM	3 793 450	5 580 160	186,3	1,5	45,0	40,5	Yes	
	E 2RM	3 793 503	5 580 157	186,3	1,5	45,0	40,0	Yes	
	F 9MN/RM	3 793 487	5 580 295	183,5	1,5	40,0	38,7	Yes	
	G 1TR	3 793 736	5 579 997	182,7	1,5	45,0	39,0	Yes	
	H 10MN/RM	3 793 871	5 580 174	182,1	1,5	40,0	36,4	Yes	
	I 11MN/RM	3 794 334	5 579 466	180,0	1,5	40,0	35,8	Yes	
	J 1M	3 794 176	5 579 065	177,5	1,5	40,0	37,8	Yes	
	K 12MN/RM	3 794 208	5 579 136	177,5	1,5	40,0	37,7	Yes	
	L 2M	3 794 347	5 578 829	177,5	1,5	40,0	34,1	Yes	
	M 3M	3 793 930	5 578 996	182,5	1,5	40,0	41,2	No	
	N 4/5/6/7/8M	3 792 711	5 578 841	187,1	1,5	40,0	39,4	Yes	
	O 9/10M	3 792 157	5 578 557	190,6	1,5	40,0	36,1	Yes	
	P 11M	3 791 178	5 578 337	193,4	1,5	40,0	30,2	Yes	
	Q 12/13M	3 791 070	5 578 785	185,8	1,5	40,0	32,1	Yes	
	R 14M	3 791 077	5 579 451	185,3	1,5	40,0	35,0	Yes	
	S 15M	3 791 258	5 579 908	185,0	1,5	40,0	36,2	Yes	
	T 1MN/RM	3 791 575	5 580 408	187,8	1,5	40,0	34,6	Yes	
	U 2MN/RM	3 791 701	5 580 594	187,5	1,5	40,0	33,8	Yes	
	V 3MN/RM	3 792 094	5 580 529	186,1	1,5	40,0	36,3	Yes	
	W 3MN/RM	3 792 090	5 580 584	187,0	1,5	40,0	35,8	Yes	
	X 4MN/RM	3 792 280	5 580 531	186,1	1,5	40,0	37,5	Yes	
	Y 5MN/RM	3 792 489	5 580 577	188,8	1,5	40,0	38,5	Yes	

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2011-11-16 11:24 / 2

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DECIBEL - Main Result

Calculation: Pilot, wariant 1

Distances (m)

WTG						
NSA	1	2	3	4	5	6
A	1626	1480	1081	565	832	1334
B	1574	1405	929	502	590	1126
C	1648	1380	894	553	538	1065
D	1743	1427	911	682	497	921
E	1792	1469	948	733	523	908
F	1828	1540	1034	743	633	972
G	1972	1590	1051	968	601	740
H	2148	1791	1255	1103	806	936
I	2522	2039	1538	1678	1168	693
J	2414	1891	1454	1730	1173	540
K	2431	1915	1463	1711	1160	549
L	2636	2102	1699	2024	1462	799
M	2072	1526	1232	1601	1039	369
N	1093	625	682	1257	972	783
O	941	769	1160	1659	1569	1670
P	1378	1488	2008	2376	2455	2660
Q	1073	1340	1879	2149	2329	2646
R	744	1232	1721	1813	2138	2603
S	656	1201	1586	1525	1947	2500
T	882	1314	1508	1193	1739	2390
U	1042	1415	1531	1174	1726	2381
V	963	1234	1226	802	1361	2026
W	1029	1289	1274	836	1397	2064
X	1058	1218	1131	653	1216	1886
Y	1098	1267	1096	554	1102	1771

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2011-11-16 11:24 / 3

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DECIBEL - Detailed results**Calculation:** Pilot, wariant 1 **Noise calculation model:** ISO 9613-2 General 8,0 m/s**Assumptions**

Calculated $L(DW) = LWA_{ref} + K + Dc - (Adiv + Aatm + Agr + Abar + Amisc) - Cmet$
 (when calculated with ground attenuation, then $Dc = D_{omega}$)

LWA_{ref}: Sound pressure level at WTG
 K: Pure tone
 Dc: Directivity correction
 Adiv: the attenuation due to geometrical divergence
 Aatm: the attenuation due to atmospheric absorption
 Agr: the attenuation due to ground effect
 Abar: the attenuation due to a barrier
 Amisc: the attenuation due to miscellaneous other effects
 Cmet: Meteorological correction

Calculation Results**Noise sensitive area: A 6MN/RM**

WTG		Wind speed: 8,0 m/s										
No.	Distance	Sound distance	Calculated	LwA _{ref}	Dc	Adiv	Aatm	Agr	Abar	Amisc	A	Cmet
	[m]	[m]	[dB(A)]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
1	1 626	1 629	23,89	107,0	0,00	75,24	-	-	0,00	0,00	-	0,00
2	1 480	1 484	25,08	107,0	0,00	74,43	-	-	0,00	0,00	-	0,00
3	1 081	1 085	28,92	107,0	0,00	71,71	-	-	0,00	0,00	-	0,00
4	565	574	36,19	107,0	0,00	66,18	-	-	0,00	0,00	-	0,00
5	839	845	31,85	107,0	0,00	69,53	-	-	0,00	0,00	-	0,00
6	1 429	1 432	25,53	107,0	0,00	74,12	-	-	0,00	0,00	-	0,00

Sum 38,69

- Data undefined due to calculation with octave data

Noise sensitive area: B 7MN/RM

WTG		Wind speed: 8,0 m/s										
No.	Distance	Sound distance	Calculated	LwA _{ref}	Dc	Adiv	Aatm	Agr	Abar	Amisc	A	Cmet
	[m]	[m]	[dB(A)]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
1	1 654	1 657	23,68	107,0	0,00	75,39	-	-	0,00	0,00	-	0,00
2	1 405	1 408	25,73	107,0	0,00	73,97	-	-	0,00	0,00	-	0,00
3	929	934	30,68	107,0	0,00	70,41	-	-	0,00	0,00	-	0,00
4	557	566	36,33	107,0	0,00	66,06	-	-	0,00	0,00	-	0,00
5	590	599	35,73	107,0	0,00	66,54	-	-	0,00	0,00	-	0,00
6	1 126	1 130	28,43	107,0	0,00	72,06	-	-	0,00	0,00	-	0,00

Sum 40,22

- Data undefined due to calculation with octave data

Noise sensitive area: C 8MN/RM

WTG		Wind speed: 8,0 m/s										
No.	Distance	Sound distance	Calculated	LwA _{ref}	Dc	Adiv	Aatm	Agr	Abar	Amisc	A	Cmet
	[m]	[m]	[dB(A)]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
1	1 649	1 652	23,72	107,0	0,00	75,36	-	-	0,00	0,00	-	0,00
2	1 380	1 384	25,95	107,0	0,00	73,82	-	-	0,00	0,00	-	0,00
3	894	898	31,14	107,0	0,00	70,07	-	-	0,00	0,00	-	0,00
4	559	568	36,30	107,0	0,00	66,09	-	-	0,00	0,00	-	0,00
5	538	547	36,72	107,0	0,00	65,75	-	-	0,00	0,00	-	0,00
6	1 065	1 068	29,10	107,0	0,00	71,57	-	-	0,00	0,00	-	0,00

Sum 40,69

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2011-11-16 11:24 / 4

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DECIBEL - Detailed results

Calculation: Pilot, wariant 1 Noise calculation model: ISO 9613-2 General 8,0 m/s

Noise sensitive area: D 1RM

WTG		Wind speed: 8,0 m/s										
No.	Distance	Sound distance	Calculated	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A	Cmet
	[m]	[m]	[dB(A)]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
1	1 743	1 746	23,00	107,0	0,00	75,84	-	-	0,00	0,00	-	0,00
2	1 427	1 431	25,54	107,0	0,00	74,11	-	-	0,00	0,00	-	0,00
3	911	916	30,92	107,0	0,00	70,23	-	-	0,00	0,00	-	0,00
4	682	689	34,17	107,0	0,00	67,76	-	-	0,00	0,00	-	0,00
5	497	506	37,55	107,0	0,00	65,09	-	-	0,00	0,00	-	0,00
6	928	932	30,71	107,0	0,00	70,39	-	-	0,00	0,00	-	0,00

Sum 40,52

- Data undefined due to calculation with octave data

Noise sensitive area: E 2RM

WTG		Wind speed: 8,0 m/s										
No.	Distance	Sound distance	Calculated	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A	Cmet
	[m]	[m]	[dB(A)]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
1	1 792	1 795	22,64	107,0	0,00	76,08	-	-	0,00	0,00	-	0,00
2	1 469	1 472	25,18	107,0	0,00	74,36	-	-	0,00	0,00	-	0,00
3	948	952	30,46	107,0	0,00	70,58	-	-	0,00	0,00	-	0,00
4	735	742	33,34	107,0	0,00	68,40	-	-	0,00	0,00	-	0,00
5	523	532	37,01	107,0	0,00	65,52	-	-	0,00	0,00	-	0,00
6	913	918	30,89	107,0	0,00	70,25	-	-	0,00	0,00	-	0,00

Sum 40,01

- Data undefined due to calculation with octave data

Noise sensitive area: F 9MN/RM

WTG		Wind speed: 8,0 m/s										
No.	Distance	Sound distance	Calculated	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A	Cmet
	[m]	[m]	[dB(A)]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
1	1 828	1 831	22,38	107,0	0,00	76,26	-	-	0,00	0,00	-	0,00
2	1 540	1 544	24,58	107,0	0,00	74,77	-	-	0,00	0,00	-	0,00
3	1 034	1 039	29,43	107,0	0,00	71,33	-	-	0,00	0,00	-	0,00
4	743	750	33,21	107,0	0,00	68,50	-	-	0,00	0,00	-	0,00
5	633	641	34,97	107,0	0,00	67,14	-	-	0,00	0,00	-	0,00
6	1 053	1 057	29,23	107,0	0,00	71,48	-	-	0,00	0,00	-	0,00

Sum 38,70

- Data undefined due to calculation with octave data

Noise sensitive area: G 1TR

WTG		Wind speed: 8,0 m/s										
No.	Distance	Sound distance	Calculated	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A	Cmet
	[m]	[m]	[dB(A)]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
1	1 972	1 975	21,39	107,0	0,00	76,91	-	-	0,00	0,00	-	0,00
2	1 590	1 593	24,18	107,0	0,00	75,05	-	-	0,00	0,00	-	0,00
3	1 051	1 056	29,24	107,0	0,00	71,47	-	-	0,00	0,00	-	0,00
4	971	977	30,16	107,0	0,00	70,79	-	-	0,00	0,00	-	0,00
5	601	609	35,53	107,0	0,00	66,69	-	-	0,00	0,00	-	0,00
6	740	746	33,27	107,0	0,00	68,46	-	-	0,00	0,00	-	0,00

Sum 39,02

- Data undefined due to calculation with octave data

Noise sensitive area: H 10MN/RM

WTG		Wind speed: 8,0 m/s										
No.	Distance	Sound distance	Calculated	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A	Cmet
	[m]	[m]	[dB(A)]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
1	2 148	2 150	20,25	107,0	0,00	77,65	-	-	0,00	0,00	-	0,00
2	1 791	1 794	22,65	107,0	0,00	76,08	-	-	0,00	0,00	-	0,00
3	1 255	1 259	27,12	107,0	0,00	73,00	-	-	0,00	0,00	-	0,00
4	1 103	1 108	28,66	107,0	0,00	71,89	-	-	0,00	0,00	-	0,00
5	806	812	32,30	107,0	0,00	69,19	-	-	0,00	0,00	-	0,00

To be continued on next page...

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DECIBEL - Detailed results**Calculation:** Pilot, wariant 1 **Noise calculation model:** ISO 9613-2 General 8,0 m/s

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WTG		Wind speed: 8,0 m/s										
No.	Distance	Sound distance	Calculated	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A	Cmet
	[m]	[m]	[dB(A)]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
6	936	941	30,60	107,0	0,00	70,47	-	-	0,00	0,00	-	0,00

Sum 36,42

- Data undefined due to calculation with octave data

Noise sensitive area: I 11MN/RM

WTG		Wind speed: 8,0 m/s										
No.	Distance	Sound distance	Calculated	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A	Cmet
	[m]	[m]	[dB(A)]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
1	2 522	2 525	18,06	107,0	0,00	79,04	-	-	0,00	0,00	-	0,00
2	2 039	2 042	20,94	107,0	0,00	77,20	-	-	0,00	0,00	-	0,00
3	1 538	1 542	24,60	107,0	0,00	74,76	-	-	0,00	0,00	-	0,00
4	1 687	1 691	23,42	107,0	0,00	75,56	-	-	0,00	0,00	-	0,00
5	1 168	1 173	27,98	107,0	0,00	72,39	-	-	0,00	0,00	-	0,00
6	693	700	33,99	107,0	0,00	67,90	-	-	0,00	0,00	-	0,00

Sum 35,83

- Data undefined due to calculation with octave data

Noise sensitive area: J 1M

WTG		Wind speed: 8,0 m/s										
No.	Distance	Sound distance	Calculated	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A	Cmet
	[m]	[m]	[dB(A)]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
1	2 414	2 416	18,66	107,0	0,00	78,66	-	-	0,00	0,00	-	0,00
2	1 891	1 895	21,94	107,0	0,00	76,55	-	-	0,00	0,00	-	0,00
3	1 454	1 457	25,31	107,0	0,00	74,27	-	-	0,00	0,00	-	0,00
4	1 745	1 748	22,99	107,0	0,00	75,85	-	-	0,00	0,00	-	0,00
5	1 185	1 190	27,81	107,0	0,00	72,51	-	-	0,00	0,00	-	0,00
6	540	548	36,68	107,0	0,00	65,78	-	-	0,00	0,00	-	0,00

Sum 37,80

- Data undefined due to calculation with octave data

Noise sensitive area: K 12MN/RM

WTG		Wind speed: 8,0 m/s										
No.	Distance	Sound distance	Calculated	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A	Cmet
	[m]	[m]	[dB(A)]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
1	2 431	2 434	18,57	107,0	0,00	78,73	-	-	0,00	0,00	-	0,00
2	1 915	1 918	21,77	107,0	0,00	76,66	-	-	0,00	0,00	-	0,00
3	1 463	1 467	25,22	107,0	0,00	74,33	-	-	0,00	0,00	-	0,00
4	1 730	1 734	23,10	107,0	0,00	75,78	-	-	0,00	0,00	-	0,00
5	1 173	1 178	27,92	107,0	0,00	72,43	-	-	0,00	0,00	-	0,00
6	549	558	36,50	107,0	0,00	65,93	-	-	0,00	0,00	-	0,00

Sum 37,67

- Data undefined due to calculation with octave data

Noise sensitive area: L 2M

WTG		Wind speed: 8,0 m/s										
No.	Distance	Sound distance	Calculated	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A	Cmet
	[m]	[m]	[dB(A)]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
1	2 636	2 638	17,45	107,0	0,00	79,43	-	-	0,00	0,00	-	0,00
2	2 102	2 105	20,54	107,0	0,00	77,46	-	-	0,00	0,00	-	0,00
3	1 699	1 702	23,34	107,0	0,00	75,62	-	-	0,00	0,00	-	0,00
4	2 024	2 027	21,04	107,0	0,00	77,14	-	-	0,00	0,00	-	0,00
5	1 462	1 466	25,23	107,0	0,00	74,32	-	-	0,00	0,00	-	0,00
6	799	806	32,40	107,0	0,00	69,12	-	-	0,00	0,00	-	0,00

Sum 34,12

- Data undefined due to calculation with octave data

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Calculated:

2011-11-16 11:20/2.7.486

DECIBEL - Detailed results

Calculation: Pilot, wariant 1 Noise calculation model: ISO 9613-2 General 8,0 m/s

Noise sensitive area: M 3M

WTG		Wind speed: 8,0 m/s										
No.	Distance	Sound distance	Calculated	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A	Cmet
	[m]	[m]	[dB(A)]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
1	2 190	2 193	19,98	107,0	0,00	77,82	-	-	0,00	0,00	-	0,00
2	1 660	1 664	23,63	107,0	0,00	75,42	-	-	0,00	0,00	-	0,00
3	1 251	1 255	27,16	107,0	0,00	72,97	-	-	0,00	0,00	-	0,00
4	1 601	1 605	24,09	107,0	0,00	75,11	-	-	0,00	0,00	-	0,00
5	1 039	1 045	29,36	107,0	0,00	71,38	-	-	0,00	0,00	-	0,00
6	369	382	40,53	107,0	0,00	62,63	-	-	0,00	0,00	-	0,00

Sum 41,23

- Data undefined due to calculation with octave data

Noise sensitive area: N 4/5/6/7/8M

WTG		Wind speed: 8,0 m/s										
No.	Distance	Sound distance	Calculated	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A	Cmet
	[m]	[m]	[dB(A)]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
1	1 149	1 154	28,18	107,0	0,00	72,24	-	-	0,00	0,00	-	0,00
2	625	634	35,10	107,0	0,00	67,04	-	-	0,00	0,00	-	0,00
3	689	696	34,05	107,0	0,00	67,85	-	-	0,00	0,00	-	0,00
4	1 260	1 264	27,07	107,0	0,00	73,04	-	-	0,00	0,00	-	0,00
5	1 016	1 021	29,64	107,0	0,00	71,18	-	-	0,00	0,00	-	0,00
6	1 049	1 053	29,27	107,0	0,00	71,45	-	-	0,00	0,00	-	0,00

Sum 39,40

- Data undefined due to calculation with octave data

Noise sensitive area: O 9/10M

WTG		Wind speed: 8,0 m/s										
No.	Distance	Sound distance	Calculated	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A	Cmet
	[m]	[m]	[dB(A)]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
1	1 058	1 063	29,16	107,0	0,00	71,53	-	-	0,00	0,00	-	0,00
2	769	775	32,83	107,0	0,00	68,79	-	-	0,00	0,00	-	0,00
3	1 160	1 163	28,08	107,0	0,00	72,31	-	-	0,00	0,00	-	0,00
4	1 659	1 662	23,64	107,0	0,00	75,41	-	-	0,00	0,00	-	0,00
5	1 569	1 572	24,35	107,0	0,00	74,93	-	-	0,00	0,00	-	0,00
6	1 670	1 672	23,56	107,0	0,00	75,47	-	-	0,00	0,00	-	0,00

Sum 36,15

- Data undefined due to calculation with octave data

Noise sensitive area: P 11M

WTG		Wind speed: 8,0 m/s										
No.	Distance	Sound distance	Calculated	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A	Cmet
	[m]	[m]	[dB(A)]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
1	1 378	1 381	25,98	107,0	0,00	73,80	-	-	0,00	0,00	-	0,00
2	1 488	1 491	25,02	107,0	0,00	74,47	-	-	0,00	0,00	-	0,00
3	2 008	2 010	21,15	107,0	0,00	77,07	-	-	0,00	0,00	-	0,00
4	2 376	2 377	18,89	107,0	0,00	78,52	-	-	0,00	0,00	-	0,00
5	2 455	2 457	18,44	107,0	0,00	78,81	-	-	0,00	0,00	-	0,00
6	2 660	2 662	17,32	107,0	0,00	79,50	-	-	0,00	0,00	-	0,00

Sum 30,19

- Data undefined due to calculation with octave data

Noise sensitive area: Q 12/13M

WTG		Wind speed: 8,0 m/s										
No.	Distance	Sound distance	Calculated	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A	Cmet
	[m]	[m]	[dB(A)]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
1	1 073	1 078	28,99	107,0	0,00	71,65	-	-	0,00	0,00	-	0,00
2	1 340	1 343	26,32	107,0	0,00	73,56	-	-	0,00	0,00	-	0,00
3	1 879	1 881	22,03	107,0	0,00	76,49	-	-	0,00	0,00	-	0,00
4	2 149	2 152	20,24	107,0	0,00	77,65	-	-	0,00	0,00	-	0,00
5	2 329	2 331	19,16	107,0	0,00	78,35	-	-	0,00	0,00	-	0,00

To be continued on next page...

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2011-11-16 11:20/2.7.486

DECIBEL - Detailed results**Calculation:** Pilot, wariant 1 **Noise calculation model:** ISO 9613-2 General 8,0 m/s

...continued from previous page

WTG		Wind speed: 8,0 m/s										
No.	Distance	Sound distance	Calculated	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A	Cmet
	[m]	[m]	[dB(A)]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
6	2 646	2 647	17,40	107,0	0,00	79,46	-	-	0,00	0,00	-	0,00

Sum 32,11

- Data undefined due to calculation with octave data

Noise sensitive area: R 14M

WTG		Wind speed: 8,0 m/s										
No.	Distance	Sound distance	Calculated	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A	Cmet
	[m]	[m]	[dB(A)]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
1	744	751	33,20	107,0	0,00	68,51	-	-	0,00	0,00	-	0,00
2	1 232	1 236	27,35	107,0	0,00	72,84	-	-	0,00	0,00	-	0,00
3	1 721	1 724	23,17	107,0	0,00	75,73	-	-	0,00	0,00	-	0,00
4	1 813	1 816	22,50	107,0	0,00	76,18	-	-	0,00	0,00	-	0,00
5	2 138	2 141	20,31	107,0	0,00	77,61	-	-	0,00	0,00	-	0,00
6	2 603	2 604	17,63	107,0	0,00	79,31	-	-	0,00	0,00	-	0,00

Sum 35,03

- Data undefined due to calculation with octave data

Noise sensitive area: S 15M

WTG		Wind speed: 8,0 m/s										
No.	Distance	Sound distance	Calculated	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A	Cmet
	[m]	[m]	[dB(A)]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
1	656	664	34,57	107,0	0,00	67,45	-	-	0,00	0,00	-	0,00
2	1 201	1 205	27,65	107,0	0,00	72,62	-	-	0,00	0,00	-	0,00
3	1 586	1 589	24,21	107,0	0,00	75,02	-	-	0,00	0,00	-	0,00
4	1 525	1 528	24,71	107,0	0,00	74,68	-	-	0,00	0,00	-	0,00
5	1 947	1 950	21,56	107,0	0,00	76,80	-	-	0,00	0,00	-	0,00
6	2 500	2 502	18,18	107,0	0,00	78,97	-	-	0,00	0,00	-	0,00

Sum 36,25

- Data undefined due to calculation with octave data

Noise sensitive area: T 1MN/RM

WTG		Wind speed: 8,0 m/s										
No.	Distance	Sound distance	Calculated	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A	Cmet
	[m]	[m]	[dB(A)]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
1	882	888	31,27	107,0	0,00	69,97	-	-	0,00	0,00	-	0,00
2	1 314	1 318	26,56	107,0	0,00	73,40	-	-	0,00	0,00	-	0,00
3	1 508	1 511	24,85	107,0	0,00	74,58	-	-	0,00	0,00	-	0,00
4	1 235	1 239	27,32	107,0	0,00	72,86	-	-	0,00	0,00	-	0,00
5	1 757	1 760	22,90	107,0	0,00	75,91	-	-	0,00	0,00	-	0,00
6	2 392	2 393	18,79	107,0	0,00	78,58	-	-	0,00	0,00	-	0,00

Sum 34,64

- Data undefined due to calculation with octave data

Noise sensitive area: U 2MN/RM

WTG		Wind speed: 8,0 m/s										
No.	Distance	Sound distance	Calculated	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A	Cmet
	[m]	[m]	[dB(A)]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
1	1 042	1 046	29,35	107,0	0,00	71,39	-	-	0,00	0,00	-	0,00
2	1 415	1 418	25,65	107,0	0,00	74,04	-	-	0,00	0,00	-	0,00
3	1 531	1 534	24,66	107,0	0,00	74,72	-	-	0,00	0,00	-	0,00
4	1 178	1 182	27,88	107,0	0,00	72,45	-	-	0,00	0,00	-	0,00
5	1 726	1 729	23,13	107,0	0,00	75,76	-	-	0,00	0,00	-	0,00
6	2 381	2 383	18,86	107,0	0,00	78,54	-	-	0,00	0,00	-	0,00

Sum 33,83

- Data undefined due to calculation with octave data

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Calculated:

2011-11-16 11:20/2.7.486

DECIBEL - Detailed results

Calculation: Pilot, wariant 1 Noise calculation model: ISO 9613-2 General 8,0 m/s

Noise sensitive area: V 3MN/RM

WTG		Wind speed: 8,0 m/s										
No.	Distance	Sound distance	Calculated	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A	Cmet
	[m]	[m]	[dB(A)]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
1	1 010	1 015	29,71	107,0	0,00	71,13	-	-	0,00	0,00	-	0,00
2	1 234	1 238	27,33	107,0	0,00	72,85	-	-	0,00	0,00	-	0,00
3	1 226	1 230	27,40	107,0	0,00	72,80	-	-	0,00	0,00	-	0,00
4	802	808	32,36	107,0	0,00	69,15	-	-	0,00	0,00	-	0,00
5	1 361	1 365	26,13	107,0	0,00	73,70	-	-	0,00	0,00	-	0,00
6	2 026	2 028	21,03	107,0	0,00	77,14	-	-	0,00	0,00	-	0,00

Sum 36,32

- Data undefined due to calculation with octave data

Noise sensitive area: W 3MN/RM

WTG		Wind speed: 8,0 m/s										
No.	Distance	Sound distance	Calculated	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A	Cmet
	[m]	[m]	[dB(A)]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
1	1 062	1 067	29,12	107,0	0,00	71,56	-	-	0,00	0,00	-	0,00
2	1 289	1 293	26,79	107,0	0,00	73,23	-	-	0,00	0,00	-	0,00
3	1 274	1 277	26,94	107,0	0,00	73,13	-	-	0,00	0,00	-	0,00
4	836	842	31,89	107,0	0,00	69,50	-	-	0,00	0,00	-	0,00
5	1 397	1 401	25,80	107,0	0,00	73,93	-	-	0,00	0,00	-	0,00
6	2 064	2 066	20,79	107,0	0,00	77,30	-	-	0,00	0,00	-	0,00

Sum 35,84

- Data undefined due to calculation with octave data

Noise sensitive area: X 4MN/RM

WTG		Wind speed: 8,0 m/s										
No.	Distance	Sound distance	Calculated	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A	Cmet
	[m]	[m]	[dB(A)]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
1	1 078	1 083	28,93	107,0	0,00	71,69	-	-	0,00	0,00	-	0,00
2	1 218	1 223	27,48	107,0	0,00	72,75	-	-	0,00	0,00	-	0,00
3	1 131	1 135	28,37	107,0	0,00	72,10	-	-	0,00	0,00	-	0,00
4	653	661	34,63	107,0	0,00	67,40	-	-	0,00	0,00	-	0,00
5	1 216	1 220	27,50	107,0	0,00	72,73	-	-	0,00	0,00	-	0,00
6	1 886	1 888	21,98	107,0	0,00	76,52	-	-	0,00	0,00	-	0,00

Sum 37,52

- Data undefined due to calculation with octave data

Noise sensitive area: Y 5MN/RM

WTG		Wind speed: 8,0 m/s										
No.	Distance	Sound distance	Calculated	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A	Cmet
	[m]	[m]	[dB(A)]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
1	1 222	1 226	27,44	107,0	0,00	72,77	-	-	0,00	0,00	-	0,00
2	1 278	1 282	26,90	107,0	0,00	73,16	-	-	0,00	0,00	-	0,00
3	1 096	1 100	28,75	107,0	0,00	71,83	-	-	0,00	0,00	-	0,00
4	554	563	36,40	107,0	0,00	66,01	-	-	0,00	0,00	-	0,00
5	1 102	1 106	28,68	107,0	0,00	71,88	-	-	0,00	0,00	-	0,00
6	1 771	1 773	22,80	107,0	0,00	75,98	-	-	0,00	0,00	-	0,00

Sum 38,51

- Data undefined due to calculation with octave data

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Calculated:

2011-11-16 11:20/2.7.486

DECIBEL - Assumptions for noise calculation**Calculation:** Pilot, variant 1 **Noise calculation model:** ISO 9613-2 General 8,0 m/s**Noise calculation model:**

ISO 9613-2 General

Wind speed:

8,0 m/s

Ground attenuation:

General, Ground factor: 1,0

Meteorological coefficient, C0:

0,0 dB

Type of demand in calculation:

1: WTG noise is compared to demand (DK, DE, SE, NL etc.)

Noise values in calculation:

All noise values are mean values (Lwa) (Normal)

Pure tones:

Pure and Impulse tone penalty are added to WTG source noise

Height above ground level, when no value in NSA object:

1,5 m Allow override of model height with height from NSA object

Deviation from "official" noise demands. Negative is more restrictive, positive is less restrictive.:

0,0 dB(A)

Octave data required

Air absorption

63	125	250	500	1 000	2 000	4 000	8 000
[db/km]	[db/km]	[db/km]	[db/km]	[db/km]	[db/km]	[db/km]	[db/km]
0,1	0,4	1,0	1,9	3,7	9,7	32,8	117,0

WTG: Siemens SWT-2.3-101 2300 101.0 IO!**Noise:** Level 0 - Calculated - 05-2010

Source Source/Date Creator Edited

Siemens 2010-05-12 EMD 2011-01-21 11:12

Rev 3

Status	Hub height [m]	Wind speed [m/s]	LwA,ref [dB(A)]	Pure tones	Octave data							
					63	125	250	500	1000	2000	4000	8000
From Windcat	99,5	8,0	107,0	No	83,5	94,4	98,1	102,1	102,1	98,4	91,2	87,2

NSA: 6MN/RM-A**Predefined calculation standard:****Imission height(a.g.l.):** Use standard value from calculation model**Noise demand:** 40,0 dB(A)**Distance demand:** 0,0 m**NSA:** 7MN/RM-B**Predefined calculation standard:****Imission height(a.g.l.):** Use standard value from calculation model**Noise demand:** 40,0 dB(A)**Distance demand:** 0,0 m**NSA:** 8MN/RM-C**Predefined calculation standard:****Imission height(a.g.l.):** Use standard value from calculation model**Noise demand:** 40,0 dB(A)**Distance demand:** 0,0 m**NSA:** 1RM-D**Predefined calculation standard:****Imission height(a.g.l.):** Use standard value from calculation model**Noise demand:** 45,0 dB(A)**Distance demand:** 0,0 m

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DECIBEL - Assumptions for noise calculation

Calculation: Pilot, wariant 1 Noise calculation model: ISO 9613-2 General 8,0 m/s

NSA: 2RM-E

Predefined calculation standard:

Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 45,0 dB(A)

Distance demand: 0,0 m

NSA: 9MN/RM-F

Predefined calculation standard:

Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 40,0 dB(A)

Distance demand: 0,0 m

NSA: 1TR-G

Predefined calculation standard:

Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 45,0 dB(A)

Distance demand: 0,0 m

NSA: 10MN/RM-H

Predefined calculation standard:

Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 40,0 dB(A)

Distance demand: 0,0 m

NSA: 11MN/RM-I

Predefined calculation standard:

Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 40,0 dB(A)

Distance demand: 0,0 m

NSA: 1M-J

Predefined calculation standard:

Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 40,0 dB(A)

Distance demand: 0,0 m

NSA: 12MN/RM-K

Predefined calculation standard:

Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 40,0 dB(A)

Distance demand: 0,0 m

NSA: 2M-L

Predefined calculation standard:

Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 40,0 dB(A)

Distance demand: 0,0 m

NSA: 3M-M

Predefined calculation standard:

Imission height(a.g.l.): Use standard value from calculation model

Noise demand: 40,0 dB(A)

Distance demand: 0,0 m

Project:

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Calculated:

2011-11-16 11:20/2.7.486

DECIBEL - Assumptions for noise calculation**Calculation:** Pilot, variant 1 **Noise calculation model:** ISO 9613-2 General 8,0 m/s**NSA:** 4/5/6/7/8M-N**Predefined calculation standard:****Imission height(a.g.l.):** Use standard value from calculation model**Noise demand:** 40,0 dB(A)**Distance demand:** 0,0 m**NSA:** 9/10M-O**Predefined calculation standard:****Imission height(a.g.l.):** Use standard value from calculation model**Noise demand:** 40,0 dB(A)**Distance demand:** 0,0 m**NSA:** 11M-P**Predefined calculation standard:****Imission height(a.g.l.):** Use standard value from calculation model**Noise demand:** 40,0 dB(A)**Distance demand:** 0,0 m**NSA:** 12/13M-Q**Predefined calculation standard:****Imission height(a.g.l.):** Use standard value from calculation model**Noise demand:** 40,0 dB(A)**Distance demand:** 0,0 m**NSA:** 14M-R**Predefined calculation standard:****Imission height(a.g.l.):** Use standard value from calculation model**Noise demand:** 40,0 dB(A)**Distance demand:** 0,0 m**NSA:** 15M-S**Predefined calculation standard:****Imission height(a.g.l.):** Use standard value from calculation model**Noise demand:** 40,0 dB(A)**Distance demand:** 0,0 m**NSA:** 1MN/RM-T**Predefined calculation standard:****Imission height(a.g.l.):** Use standard value from calculation model**Noise demand:** 40,0 dB(A)**Distance demand:** 0,0 m**NSA:** 2MN/RM-U**Predefined calculation standard:****Imission height(a.g.l.):** Use standard value from calculation model**Noise demand:** 40,0 dB(A)**Distance demand:** 0,0 m**NSA:** 3MN/RM-V**Predefined calculation standard:****Imission height(a.g.l.):** Use standard value from calculation model**Noise demand:** 40,0 dB(A)**Distance demand:** 0,0 m

Project:

Projekt Kêpno

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Calculated:

2011-11-16 11:20/2.7.486

DECIBEL - Assumptions for noise calculation

Calculation: Pilot, variant 1 Noise calculation model: ISO 9613-2 General 8,0 m/s

NSA: 3MN/RM-W

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Noise demand: 40,0 dB(A)

Distance demand: 0,0 m

NSA: 4MN/RM-X

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Noise demand: 40,0 dB(A)

Distance demand: 0,0 m

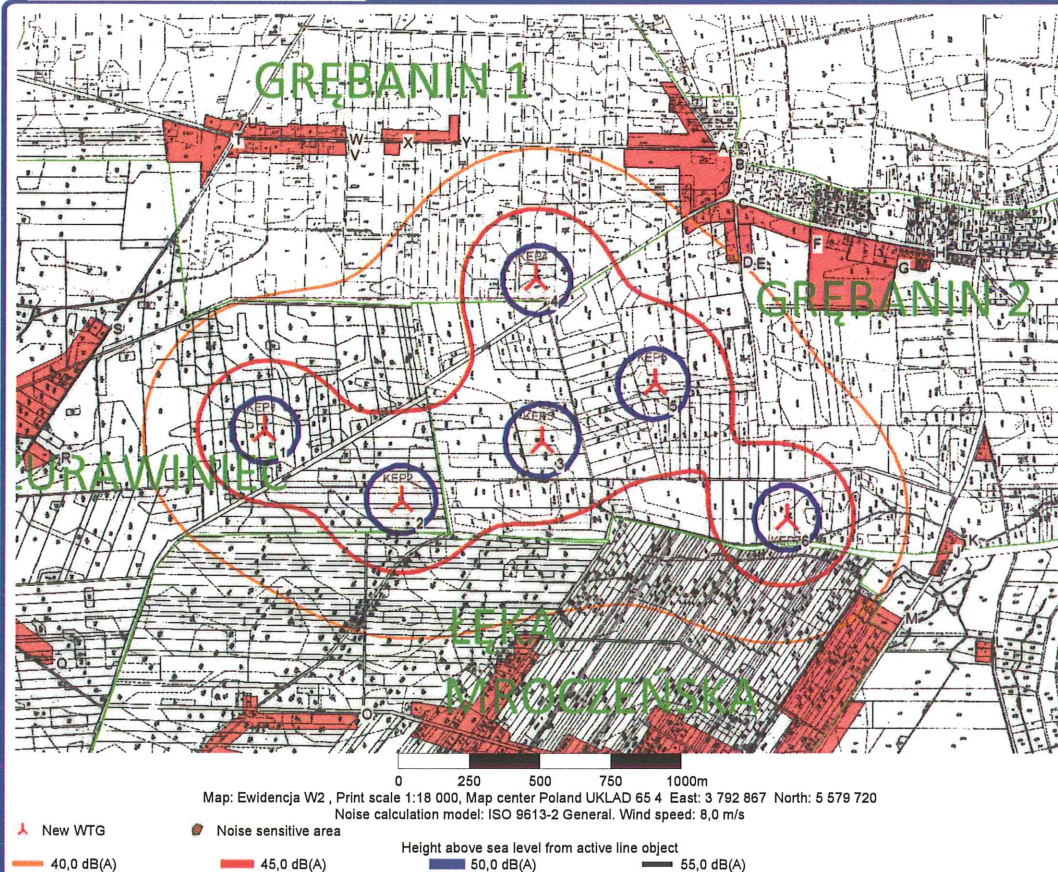
NSA: 5MN/RM-Y

Predefined calculation standard:

Immission height(a.g.l.): Use standard value from calculation model

Noise demand: 40,0 dB(A)

Distance demand: 0,0 m



DECIBEL -
Map 8,0 m/s
Calculation:
Pilot, wariant 1
Noise calculation model:
ISO 9613-2 General 8,0 m/s

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2011-11-16 11:24 / 13

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