

Project:

FW Cierpice - uzupełnienie maj 2015

Description:

Farma wiatrowa Cierpice w gminie
Przeworno
5 turbin wiatrowych o mocy 3MW każda

Licensed user:

ProSilence Krzysztof Kreciproch

Ul. Spychalskiego 13/112

PL-45 716 Opole

+48 77 550 11 43

Krzysztof Kreciproch / prosilence@prosilence.pl

Calculated:

2015-05-14 12:57/3.0.578

DECIBEL - Main Result

Calculation: ZAŁĄCZNIK TEKSTOWY 1b - WARIANT 1 noc**Noise calculation model:**

ISO 9613-2 Poland

Wind speed:

10,0 m/s

Ground attenuation:

General, fixed, Ground factor: 0,5

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:

4,0 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)

All coordinates are in

Polish GK 1992/19-ETRS89

WTGs

Y (east)	X (north)	Z [m]	Row data/Description	WTG type			Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Noise data			Wind speed [m/s]	Status	Lwa,ref [dB(A)]	Pure tones
				Valid	Manufact.	Type-generator				Creator	Name					
1 369 035	311 963	230,0	EW1	Yes	VESTAS	V126-3.3 GridStream-3 300	3 300	126,0	80,0	USER	Level -- Mode 2 - 106,5dB		10,0	From other hub height	106,5	No h
2 369 480	312 108	225,8	EW2	Yes	VESTAS	V126-3.3 GridStream-3 300	3 300	126,0	80,0	USER	Level -- Mode 2 - 106,5dB		10,0	From other hub height	106,5	No h
3 369 947	312 060	216,3	EW3	Yes	VESTAS	V126-3.3 GridStream-3 300	3 300	126,0	80,0	USER	Level -- Mode 2 - 106,5dB		10,0	From other hub height	106,5	No h
4 370 203	311 996	206,6	EW4	Yes	VESTAS	V126-3.3 GridStream-3 300	3 300	126,0	80,0	USER	Level -- Mode 2 - 106,5dB		10,0	From other hub height	106,5	No h
5 370 509	311 947	196,9	EW5	Yes	VESTAS	V126-3.3 GridStream-3 300	3 300	126,0	80,0	USER	Level -- Mode 2 - 106,5dB		10,0	From other hub height	106,5	No h

h) Generic octave distribution used

Calculation Results

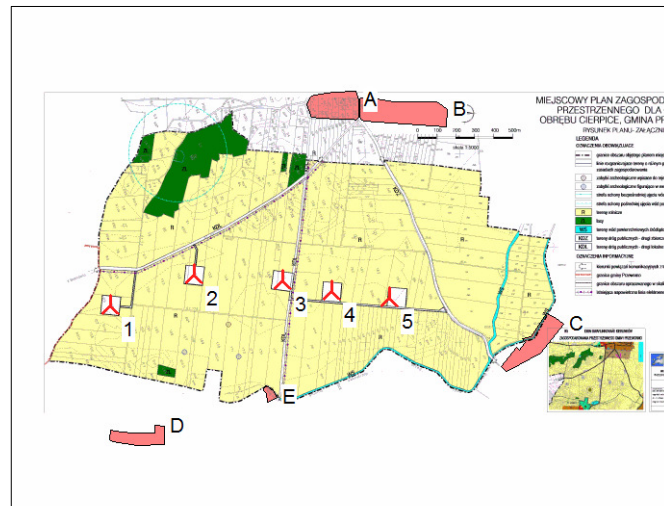
Sound Level

Noise sensitive area

No.	Name	Y (east)	X (north)	Z [m]	Imission height [m]	Noise [dB(A)]	From WTGs [dB(A)]	Demands fulfilled ?
A 01	Cierpice 1	370 168	312 912	200,0	4,0	45,0	40,6	Yes
B 02	Cierpice 2	370 396	312 888	194,1	4,0	45,0	40,2	Yes
C 03	Gołaczów 1	371 090	311 567	190,0	4,0	45,0	40,2	Yes
D 04	Konary 1	369 307	311 316	220,3	4,0	45,0	41,7	Yes
E 05	Konary 2	369 849	311 509	209,8	4,0	45,0	44,8	Yes

Distances (m)

NSA	1	2	3	4	5
A	1448	1034	877	909	963
B	1638	1196	940	913	925
C	2094	1699	1245	986	694
D	660	811	982	1125	1358
E	926	703	560	602	779



New WTG

Scale 1:40 000
Noise sensitive area

DECIBEL - Detailed results

Calculation: ZAŁĄCZNIK TEKSTOWY 1b - WARIANT 1 noc **Noise calculation model:** ISO 9613-2 Poland 10,0 m/s
Assumptions

Calculated L(DW) = LWA,ref + K + Dc - (Adiv + Aatm + Agr + Abar + Amisc) - Cmet
(when calculated with ground attenuation, then Dc = Domega)

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 01 Cierpice 1

WTG		Wind speed: 10,0 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	1 478	1 482	29,39	106,5	0,00	74,42	-	-	0,00	0,00	-	0,00
2	1 058	1 063	33,13	106,5	0,00	71,53	-	-	0,00	0,00	-	0,00
3	880	885	35,12	106,5	0,00	69,94	-	-	0,00	0,00	-	0,00
4	917	920	34,70	106,5	0,00	70,28	-	-	0,00	0,00	-	0,00
5	1 024	1 026	33,51	106,5	0,00	71,23	-	-	0,00	0,00	-	0,00

Sum 40,56

- Data undefined due to calculation with octave data

Noise sensitive area: B 02 Cierpice 2

WTG		Wind speed: 10,0 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	1 647	1 650	28,14	106,5	0,00	75,35	-	-	0,00	0,00	-	0,00
2	1 203	1 208	31,71	106,5	0,00	72,64	-	-	0,00	0,00	-	0,00
3	942	947	34,39	106,5	0,00	70,53	-	-	0,00	0,00	-	0,00
4	913	917	34,74	106,5	0,00	70,25	-	-	0,00	0,00	-	0,00
5	948	951	34,34	106,5	0,00	70,57	-	-	0,00	0,00	-	0,00

Sum 40,24

- Data undefined due to calculation with octave data

Noise sensitive area: C 03 Gołaczów 1

WTG		Wind speed: 10,0 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	2 094	2 098	25,28	106,5	0,00	77,43	-	-	0,00	0,00	-	0,00
2	1 699	1 703	27,77	106,5	0,00	75,62	-	-	0,00	0,00	-	0,00
3	1 245	1 250	31,33	106,5	0,00	72,94	-	-	0,00	0,00	-	0,00
4	986	990	33,90	106,5	0,00	70,92	-	-	0,00	0,00	-	0,00
5	694	699	37,61	106,5	0,00	67,89	-	-	0,00	0,00	-	0,00

Sum 40,22

- Data undefined due to calculation with octave data

Noise sensitive area: D 04 Konary 1

WTG		Wind speed: 10,0 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	703	708	37,48	106,5	0,00	68,00	-	-	0,00	0,00	-	0,00
2	811	816	35,99	106,5	0,00	69,23	-	-	0,00	0,00	-	0,00
3	982	985	33,96	106,5	0,00	70,87	-	-	0,00	0,00	-	0,00
4	1 125	1 127	32,48	106,5	0,00	72,04	-	-	0,00	0,00	-	0,00
5	1 358	1 359	30,38	106,5	0,00	73,67	-	-	0,00	0,00	-	0,00

Sum 41,74

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DECIBEL - Detailed results

Calculation: ZAŁĄCZNIK TEKSTOWY 1b - WARIANT 1 noc **Noise calculation model:** ISO 9613-2 Poland 10,0 m/s**Noise sensitive area: E 05 Konary 2****WTG****Wind speed: 10,0 m/s**

No.	Distance [m]	Sound distance [m]	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]	Cmet [dB]
1	933	938	34,50	106,5	0,00	70,44	-	-	0,00	0,00	-	0,00
2	704	710	37,46	106,5	0,00	68,02	-	-	0,00	0,00	-	0,00
3	560	566	39,79	106,5	0,00	66,06	-	-	0,00	0,00	-	0,00
4	602	607	39,08	106,5	0,00	66,66	-	-	0,00	0,00	-	0,00
5	793	795	36,26	106,5	0,00	69,01	-	-	0,00	0,00	-	0,00

Sum 44,81

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DECIBEL - Assumptions for noise calculation

Calculation: ZAŁĄCZNIK TEKSTOWY 1b - WARIANT 1 noc **Noise calculation model:** ISO 9613-2 Poland 10,0 m/s**Noise calculation model:**

ISO 9613-2 Poland

Wind speed:

10,0 m/s

Ground attenuation:

General, fixed, Ground factor: 0,5

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:

4,0 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: VESTAS V126-3.3 GridStreame 3300 126.0 !O!**Noise:** Level - - Mode 2 - 106,5dB

Source

Source/Date Creator Edited

Manufacturer 2013-05-04 USER 2014-03-21 09:38

Based on Document no.: 0034-7616 V06 2013-04-05.

Status	Hub height [m]	Wind speed [m/s]	LwA,ref [dB(A)]	Pure tones	Octave data								
					63 [dB]	125 [dB]	250 [dB]	500 [dB]	1000 [dB]	2000 [dB]	4000 [dB]	8000 [dB]	
From other hub height	80,0	10,0	106,5	No	Generic data	88,1	95,1	98,5	101,1	100,9	98,0	93,2	83,7

NSA: 01 Cierpice 1-A**Predefined calculation standard:** Night: Multi-family houses, agricultural, mixed**Imission height(a.g.l.):** Use standard value from calculation model**Noise demand:** 45,0 dB(A)**No distance demand****NSA:** 02 Cierpice 2-B**Predefined calculation standard:** Night: Multi-family houses, agricultural, mixed**Imission height(a.g.l.):** Use standard value from calculation model**Noise demand:** 45,0 dB(A)**No distance demand****NSA:** 03 Gołaczów 1-C**Predefined calculation standard:** Night: Multi-family houses, agricultural, mixed**Imission height(a.g.l.):** Use standard value from calculation model**Noise demand:** 45,0 dB(A)**No distance demand****NSA:** 04 Konary 1-D**Predefined calculation standard:** Night: Multi-family houses, agricultural, mixed**Imission height(a.g.l.):** Use standard value from calculation model**Noise demand:** 45,0 dB(A)**No distance demand**

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DECIBEL - Assumptions for noise calculation

Calculation: ZAŁĄCZNIK TEKSTOWY 1b - WARIANT 1 noc **Noise calculation model:** ISO 9613-2 Poland 10,0 m/s

NSA: 05 Konary 2-E

Predefined calculation standard: Night: Multi-family houses, agricultural, mixed

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

Noise demand: 45,0 dB(A)

No distance demand