

Project:

Analiza hałasu Wyrzyki

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2014-10-26 19:38 / 1

Licensed user:

ENVO

ul.Sikorskiego 25/20

PL-62 030 Lubon

0048 662 643 300

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Calculated:

2014-10-26 19:36/2.9.207

DECIBEL - Main Result

Calculation: Analiza akustyczna - wariant proponowany

Noise calculation model:

ISO 9613-2 General

Wind speed:

10,0 m/s

Ground attenuation:

General, Ground factor: 0,0

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:

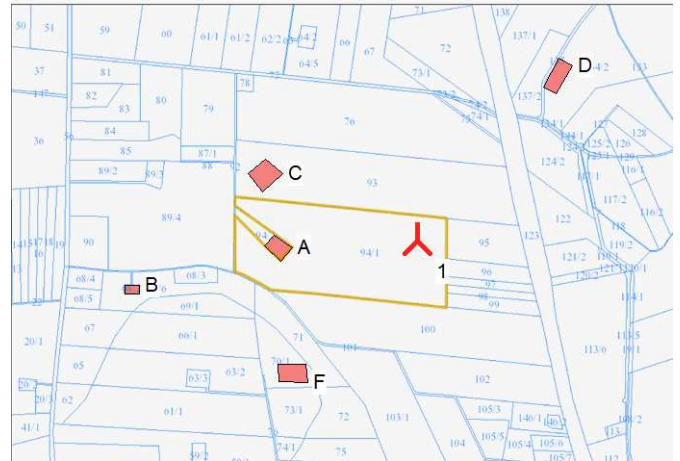
Pure and Impulse tone penalty are added to WTG source noise

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

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)



Scale 1:20 000

New WTG

Noise sensitive area

WTGs

Polish GK 1992/19-ETRS89			WTG type				Noise data			Wind	Lwa,ref	Pure	
East	North	Z	Valid	Manufact.	Type-generator	Power, rated	Rotor diameter	Hub height	Creator	Name	speed	[dB(A)]	tones
[m]						[kW]	[m]	[m]			[m/s]	[dB(A)]	0 dB h
1 618 459	536 471	145,4 EW1	No	REpower	MM 92-2 000	2 000	92,5	120,0	EMD	Level 0 - guaranteed - SD-2.9-WT.SL-1-A-EN - 05/2005	10,0	105,0	0 dB h

h) Generic octave distribution used

Calculation Results

Sound Level

No.	Name	East	North	Z	Imission height	Noise	Sound Level	Distance to noise demand	Demands fulfilled ?
		Polish GK 1992/19-ETRS89				[dB(A)]	[dB(A)]	[m]	Noise
		East	North	Z	[m]	[dB(A)]	[dB(A)]	[m]	
A	RN1	618 128	536 452	141,7	4,0	45,0	44,8	8	Yes
B	RN2	617 721	536 354	140,0	4,0	45,0	37,1	424	Yes
C	RN3	618 103	536 650	139,5	4,0	45,0	43,1	77	Yes
D	RN4	618 797	536 879	145,2	4,0	45,0	40,5	206	Yes
E	RN5	618 797	536 879	145,2	4,0	45,0	40,5	206	Yes
F	RN6	618 163	536 144	143,6	4,0	45,0	42,2	117	Yes

Distances (m)

WTG	
NSA	1
A	331
B	747
C	399
D	530
E	530
F	442

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DECIBEL - Detailed results**Calculation:** Analiza akustyczna - wariant proponowany **Noise calculation model:** ISO 9613-2 General 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 RN1**

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	331	352	44,79	105,0	0,00	61,94	-	-	0,00	0,00	-	0,00
Sum		44,79										

- Data undefined due to calculation with octave data

Noise sensitive area: B RN2

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	747	757	37,13	105,0	0,00	68,58	-	-	0,00	0,00	-	0,00
Sum		37,13										

- Data undefined due to calculation with octave data

Noise sensitive area: C RN3

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	399	417	43,15	105,0	0,00	63,40	-	-	0,00	0,00	-	0,00
Sum		43,15										

- Data undefined due to calculation with octave data

Noise sensitive area: D RN4

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	530	543	40,53	105,0	0,00	65,69	-	-	0,00	0,00	-	0,00
Sum		40,53										

- Data undefined due to calculation with octave data

Noise sensitive area: E RN5

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	530	543	40,53	105,0	0,00	65,69	-	-	0,00	0,00	-	0,00
Sum		40,53										

- Data undefined due to calculation with octave data

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DECIBEL - Detailed results**Calculation:** Analiza akustyczna - wariant proponowany **Noise calculation model:** ISO 9613-2 General 10,0 m/s**Noise sensitive area: F RN6****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	442	457	42,24	105,0	0,00	64,20	-	-	0,00	0,00	-	0,00

Sum 42,24

- Data undefined due to calculation with octave data

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DECIBEL - Assumptions for noise calculation**Calculation:** Analiza akustyczna - wariant proponowany **Noise calculation model:** ISO 9613-2 General 10,0 m/s**Noise calculation model:**

ISO 9613-2 General

Wind speed:

10,0 m/s

Ground attenuation:

General, Ground factor: 0,0

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:

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: REpower MM 92 2000 92.5 !-**Noise:** Level 0 - guaranteed - SD-2.9-WT.SL-1-A-EN - 05/2005

Source	Source/Date	Creator	Edited
REpower SD-2.9-WT.SL-1-A-EN	2005-05-03	EMD	2006-10-17 14:04

Status	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 Windcat	10,0	105,0	No	Generic data	86,6	93,6	97,0	99,6	99,4	96,5	91,7	82,2

NSA: RN1-A**Predefined calculation standard:****Imission height(a.g.l.):** Use standard value from calculation model**Noise demand:** 45,0 dB(A)**Distance demand:****NSA:** RN2-B**Predefined calculation standard:****Imission height(a.g.l.):** Use standard value from calculation model**Noise demand:** 45,0 dB(A)**Distance demand:****NSA:** RN3-C**Predefined calculation standard:****Imission height(a.g.l.):** Use standard value from calculation model**Noise demand:** 45,0 dB(A)**Distance demand:****NSA:** RN4-D**Predefined calculation standard:****Imission height(a.g.l.):** Use standard value from calculation model**Noise demand:** 45,0 dB(A)**Distance demand:**

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DECIBEL - Assumptions for noise calculation

Calculation: Analiza akustyczna - wariant proponowany **Noise calculation model:** ISO 9613-2 General 10,0 m/s

NSA: RN5-E

Predefined calculation standard:

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

Noise demand: 45,0 dB(A)

Distance demand:

NSA: RN6-F

Predefined calculation standard:

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

Noise demand: 45,0 dB(A)

Distance demand: