

5 priedas

PROGNOSTINIAI TRIUKŠMO MODELIAVIMO REZULTATAI

Project:

Prognostiniai triukšmo modeliavimo rezultatai

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2018.08.10 13:20 / 1

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Calculated:

2018.08.10 12:09/2.9.269

DECIBEL - Main Result**Noise calculation model:**

ISO 9613-2 General

Wind speed:

10,0 m/s

Ground attenuation:

General, Ground factor: 0,6

Meteorological coefficient, C0:

2,0 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:

0,0 m Don't 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)

WTGs

Lithuanian TM LKS94-LKS94 (LT)				WTG type			Noise data			Wind speed [m/s]	Status	LwA,ref [dB(A)]	Pure tones			
East	North	Z [m]	Row data/Description	Valid	Manufact.	Type-generator	Power rated [kW]	Rotor diameter [m]	Hub height [m]					Creator	Name	
1	434.404	6.153.700	140,0	NORDEX S77 1500 77,0 !-! hub: 111...Yes	Yes	NORDEX	S77-1.500	1.500	77,0	111,5	EMD	Level 0 - official - - 04-2005	10,0	Generic data based on turbine power (very uncertain)	105,4	0 dB a
2	433.941	6.153.477	137,3	NORDEX S77 1500 77,0 !-! hub: 111...Yes	Yes	NORDEX	S77-1.500	1.500	77,0	111,5	EMD	Level 0 - official - - 04-2005	10,0	Generic data based on turbine power (very uncertain)	105,4	0 dB a
3	434.518	6.154.191	140,0	NORDEX S77 1500 77,0 !-! hub: 111...Yes	Yes	NORDEX	S77-1.500	1.500	77,0	111,5	EMD	Level 0 - official - - 04-2005	10,0	Generic data based on turbine power (very uncertain)	105,4	0 dB a
4	433.978	6.154.139	140,4	NORDEX S77 1500 77,0 !-! hub: 111...Yes	Yes	NORDEX	S77-1.500	1.500	77,0	111,5	EMD	Level 0 - official - - 04-2005	10,0	Generic data based on turbine power (very uncertain)	105,4	0 dB a

a) Generic data based on turbine power (very uncertain)

Calculation Results**Sound Level**

Noise sensitive area		Lithuanian TM LKS94-LKS94 (LT)			Demands		Sound Level		Demands fulfilled ?
No.	Name	East	North	Z [m]	Imission height [m]	Noise [dB(A)]	From WTGs [dB(A)]	Noise	Noise
A	Noise sensitive area: German TA Lärm - Unzoned countryside areas (1)	433.799	6.152.875	135,0	0,0	45,0	34,7	Yes	
B	Noise sensitive area: German TA Lärm - Unzoned countryside areas (2)	434.301	6.153.204	136,6	0,0	45,0	39,2	Yes	
C	Noise sensitive area: German TA Lärm - Unzoned countryside areas (3)	434.429	6.153.303	140,0	0,0	45,0	40,0	Yes	
D	Noise sensitive area: German TA Lärm - Unzoned countryside areas (4)	434.647	6.153.238	137,8	0,0	45,0	37,1	Yes	
E	Noise sensitive area: German TA Lärm - Unzoned countryside areas (5)	434.893	6.153.836	140,0	0,0	45,0	38,6	Yes	
F	Noise sensitive area: German TA Lärm - Unzoned countryside areas (6)	434.935	6.153.925	140,0	0,0	45,0	38,3	Yes	
G	Noise sensitive area: German TA Lärm - Unzoned countryside areas (7)	435.118	6.153.924	138,7	0,0	45,0	35,5	Yes	
H	Noise sensitive area: German TA Lärm - Unzoned countryside areas (8)	435.145	6.153.836	138,4	0,0	45,0	34,9	Yes	
I	Noise sensitive area: German TA Lärm - Unzoned countryside areas (9)	435.275	6.153.951	136,9	0,0	45,0	33,5	Yes	
J	Noise sensitive area: German TA Lärm - Unzoned countryside areas (10)	435.425	6.153.862	134,7	0,0	45,0	31,7	Yes	
K	Noise sensitive area: German TA Lärm - Unzoned countryside areas (11)	435.577	6.153.864	131,2	0,0	45,0	30,2	Yes	

Distances (m)

NSA	WTG			
	1	2	3	4
A	1023	618	1500	1276
B	507	452	1011	990
C	398	502	893	950
D	520	722	951	1122
E	507	1013	517	964
F	568	1080	495	981
G	748	1258	657	1160
H	753	1256	721	1206
I	906	1415	794	1311
J	1034	1533	965	1473
K	1184	1679	1108	1622

Project:

Prognostiniai triukšmo modeliavimo rezultatai

VE modelis: Nordex S77, 1500 kW, bokšto aukštis 111,5 m, rotoriaus skersmuo 77 m, bendras aukštis 150 m, maksimalus skleidžiamas triukšmo lygis 105,4 dB(A)

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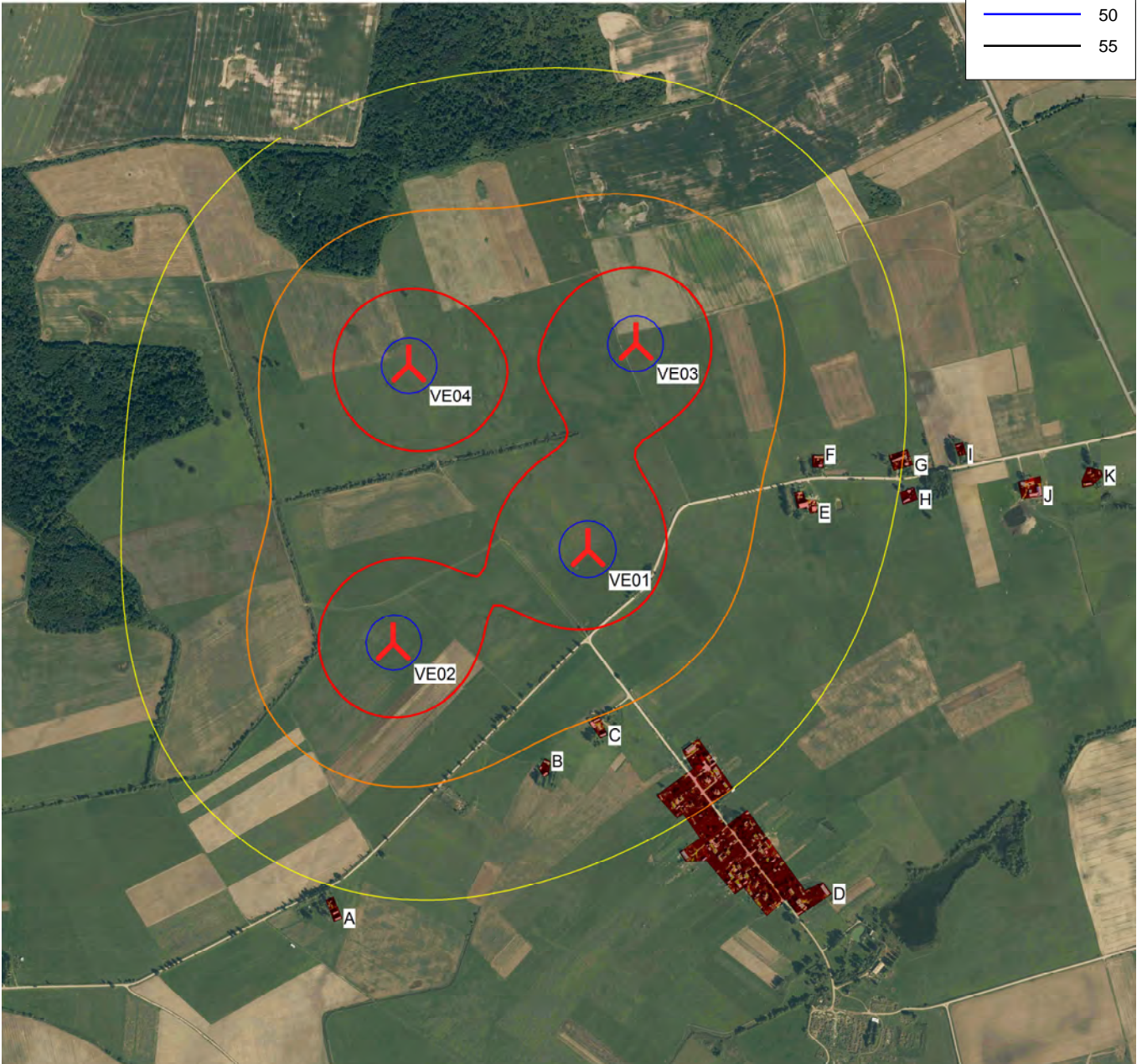
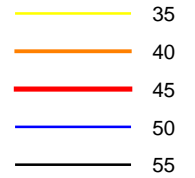
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2018.08.10 12:09/2.9.269

DECIBEL - Map 10,0 m/s

Noise [dB(A)]



0 250 500 750 1000m

Map: kelme1 , Print scale 1:15.000, Map center Lithuanian TM LKS94-LKS94 (LT) East: 434.290 North: 6.153.855

New WTG

Noise sensitive area

Noise calculation model: ISO 9613-2 General. Wind speed: 10,0 m/s

Height above sea level from active line object

Project:

Prognostiniai triukšmo modeliavimo rezultatai

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Calculated:

2018.08.10 13:37/2.9.269

DECIBEL - Main Result**Noise calculation model:**

ISO 9613-2 General

Wind speed:

10,0 m/s

Ground attenuation:

General, Ground factor: 0,6

Meteorological coefficient, C0:

2,0 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:

0,0 m Don't 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)

WTGs

	Lithuanian TM LKS94-LKS94 (LT)				WTG type			Noise data			Wind speed [m/s]	LwA_ref [dB(A)]	Pure tones		
	East	North	Z	Row data/Description	Valid	Manufact.	Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]				Creator	Name
1	434.404	6.153.700	140,0	REpower MD 77 1500 77.0... No	REpower	MD 77-1.500	1.500	77,0	100,0	EMD	Level 0 - guaranteed	-- 05-2003	10,0	103,5	0 dB h
2	433.941	6.153.477	137,3	REpower MD 77 1500 77.0... No	REpower	MD 77-1.500	1.500	77,0	100,0	EMD	Level 0 - guaranteed	-- 05-2003	10,0	103,5	0 dB h
3	434.518	6.154.191	140,0	REpower MD 77 1500 77.0... No	REpower	MD 77-1.500	1.500	77,0	100,0	EMD	Level 0 - guaranteed	-- 05-2003	10,0	103,5	0 dB h
4	433.978	6.154.139	140,4	REpower MD 77 1500 77.0... No	REpower	MD 77-1.500	1.500	77,0	100,0	EMD	Level 0 - guaranteed	-- 05-2003	10,0	103,5	0 dB h

h) Generic octave distribution used

Calculation Results**Sound Level**

Noise sensitive area No.	Name	Lithuanian TM LKS94-LKS94 (LT)			Imission height [m]	Demands Noise [dB(A)]	Sound Level From WTGs [dB(A)]	Demands fulfilled ? Noise
		East	North	Z				
A	Noise sensitive area: German TA Lärm - Unzoned countryside areas (1)	433.799	6.152.875	135,0	0,0	45,0	33,5	Yes
B	Noise sensitive area: German TA Lärm - Unzoned countryside areas (2)	434.301	6.153.204	136,6	0,0	45,0	38,1	Yes
C	Noise sensitive area: German TA Lärm - Unzoned countryside areas (3)	434.429	6.153.303	140,0	0,0	45,0	38,8	Yes
D	Noise sensitive area: German TA Lärm - Unzoned countryside areas (4)	434.647	6.153.238	137,8	0,0	45,0	36,0	Yes
E	Noise sensitive area: German TA Lärm - Unzoned countryside areas (5)	434.893	6.153.836	140,0	0,0	45,0	37,5	Yes
F	Noise sensitive area: German TA Lärm - Unzoned countryside areas (6)	434.935	6.153.925	140,0	0,0	45,0	37,1	Yes
G	Noise sensitive area: German TA Lärm - Unzoned countryside areas (7)	435.118	6.153.924	138,7	0,0	45,0	34,3	Yes
H	Noise sensitive area: German TA Lärm - Unzoned countryside areas (8)	435.145	6.153.836	138,4	0,0	45,0	33,8	Yes
I	Noise sensitive area: German TA Lärm - Unzoned countryside areas (9)	435.275	6.153.951	136,9	0,0	45,0	32,3	Yes
J	Noise sensitive area: German TA Lärm - Unzoned countryside areas (10)	435.425	6.153.862	134,7	0,0	45,0	30,6	Yes
K	Noise sensitive area: German TA Lärm - Unzoned countryside areas (11)	435.577	6.153.864	131,2	0,0	45,0	29,0	Yes

Distances (m)

NSA	WTG			
	1	2	3	4
A	1023	618	1500	1276
B	507	452	1011	990
C	398	502	893	950
D	520	722	951	1122
E	507	1013	517	964
F	568	1080	495	981
G	748	1258	657	1160
H	753	1256	721	1206
I	906	1415	794	1311
J	1034	1533	965	1473
K	1184	1679	1108	1622

Project:

Prognostiniai triukšmo modeliavimo rezultatai

VE modelis: REpower MD 77, 1500 kW, bokšto aukštis 100 m, rotoriaus skersmuo 77 m, bendras aukštis 138,5 m, maksimalus skleidžiamas triukšmo lygis 103,5 dB(A)

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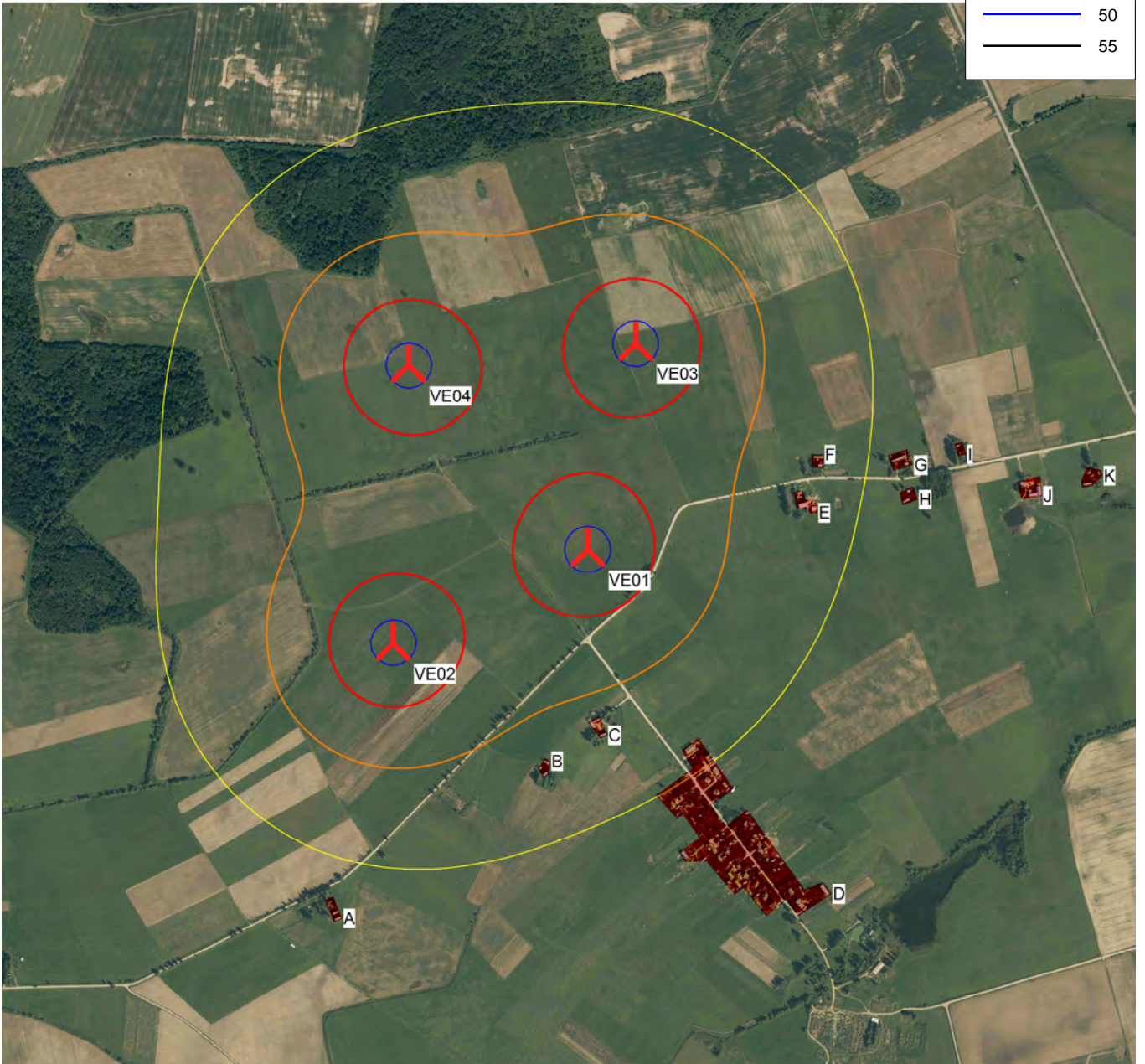
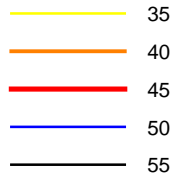
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2018.08.10 13:37/2.9.269

DECIBEL - Map 10,0 m/s

Noise [dB(A)]



0 250 500 750 1000m

Map: kelme1 , Print scale 1:15.000, Map center Lithuanian TM LKS94-LKS94 (LT) East: 434.290 North: 6.153.855

New WTG

Noise sensitive area

Noise calculation model: ISO 9613-2 General. Wind speed: 10,0 m/s
Height above sea level from active line object

Project:

Prognostiniai triukšmo modeliavimo rezultatai

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VE modelis: REpower MM 100, 2000 kW, bokšto aukštis 100 m, rotoriaus skersmuo 100 m, bendras aukštis 150 m, maksimalus skleidžiamas triukšmo lygis 103,8 dB(A)

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Calculated:

2018.08.10 13:44/2.9.269

DECIBEL - Main Result

Noise calculation model:

ISO 9613-2 General

Wind speed:

10,0 m/s

Ground attenuation:

General, Ground factor: 0,6

Meteorological coefficient, C0:

2,0 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:

0,0 m Don't 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)

WTGs

	Lithuanian TM LKS94-LKS94 (LT)				WTG type			Noise data			Wind speed [m/s]	Status	Lwa,ref [dB(A)]	Pure tones		
	East	North	Z	Row data/Description	Valid	Manufact.	Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]					Creator	Name
1	434.404	6.153.700	140,0	REpower MM 100 2000 100.0... No	REpower	MM	100-2.000	2.000	100,0	100,0	EMD	Level 0 - Guaranteed - - 07-2011	10,0	Interpolated	103,8	0 dB g
2	433.941	6.153.477	137,3	REpower MM 100 2000 100.0... No	REpower	MM	100-2.000	2.000	100,0	100,0	EMD	Level 0 - Guaranteed - - 07-2011	10,0	Interpolated	103,8	0 dB g
3	434.518	6.154.191	140,0	REpower MM 100 2000 100.0... No	REpower	MM	100-2.000	2.000	100,0	100,0	EMD	Level 0 - Guaranteed - - 07-2011	10,0	Interpolated	103,8	0 dB g
4	433.978	6.154.139	140,4	REpower MM 100 2000 100.0... No	REpower	MM	100-2.000	2.000	100,0	100,0	EMD	Level 0 - Guaranteed - - 07-2011	10,0	Interpolated	103,8	0 dB g

g) Data calculated from data for other wind speed (uncertain)

Calculation Results

Sound Level

Noise sensitive area No.	Name	Lithuanian TM LKS94-LKS94 (LT)			Imission height [m]	Demands Noise [dB(A)]	Sound Level From WTGs [dB(A)]	Demands fulfilled ? Noise
		East	North	Z				
A	Noise sensitive area: German TA Lärm - Unzoned countryside areas (1)	433.799	6.152.875	135,0	0,0	45,0	33,8	Yes
B	Noise sensitive area: German TA Lärm - Unzoned countryside areas (2)	434.301	6.153.204	136,6	0,0	45,0	38,4	Yes
C	Noise sensitive area: German TA Lärm - Unzoned countryside areas (3)	434.429	6.153.303	140,0	0,0	45,0	39,1	Yes
D	Noise sensitive area: German TA Lärm - Unzoned countryside areas (4)	434.647	6.153.238	137,8	0,0	45,0	36,3	Yes
E	Noise sensitive area: German TA Lärm - Unzoned countryside areas (5)	434.893	6.153.836	140,0	0,0	45,0	37,8	Yes
F	Noise sensitive area: German TA Lärm - Unzoned countryside areas (6)	434.935	6.153.925	140,0	0,0	45,0	37,4	Yes
G	Noise sensitive area: German TA Lärm - Unzoned countryside areas (7)	435.118	6.153.924	138,7	0,0	45,0	34,6	Yes
H	Noise sensitive area: German TA Lärm - Unzoned countryside areas (8)	435.145	6.153.836	138,4	0,0	45,0	34,1	Yes
I	Noise sensitive area: German TA Lärm - Unzoned countryside areas (9)	435.275	6.153.951	136,9	0,0	45,0	32,6	Yes
J	Noise sensitive area: German TA Lärm - Unzoned countryside areas (10)	435.425	6.153.862	134,7	0,0	45,0	30,9	Yes
K	Noise sensitive area: German TA Lärm - Unzoned countryside areas (11)	435.577	6.153.864	131,2	0,0	45,0	29,3	Yes

Distances (m)

NSA	WTG			
	1	2	3	4
A	1023	618	1500	1276
B	507	452	1011	990
C	398	502	893	950
D	520	722	951	1122
E	507	1013	517	964
F	568	1080	495	981
G	748	1258	657	1160
H	753	1256	721	1206
I	906	1415	794	1311
J	1034	1533	965	1473
K	1184	1679	1108	1622

Project:

Prognostiniai triukšmo modeliavimo rezultatai

VE modelis: REpower MM 100, 2000 kW, bokšto aukštis 100 m, rotoriaus skersmuo 100 m, bendras aukštis 150 m, maksimalus skleidžiamas triukšmo lygis 103,8 dB(A)

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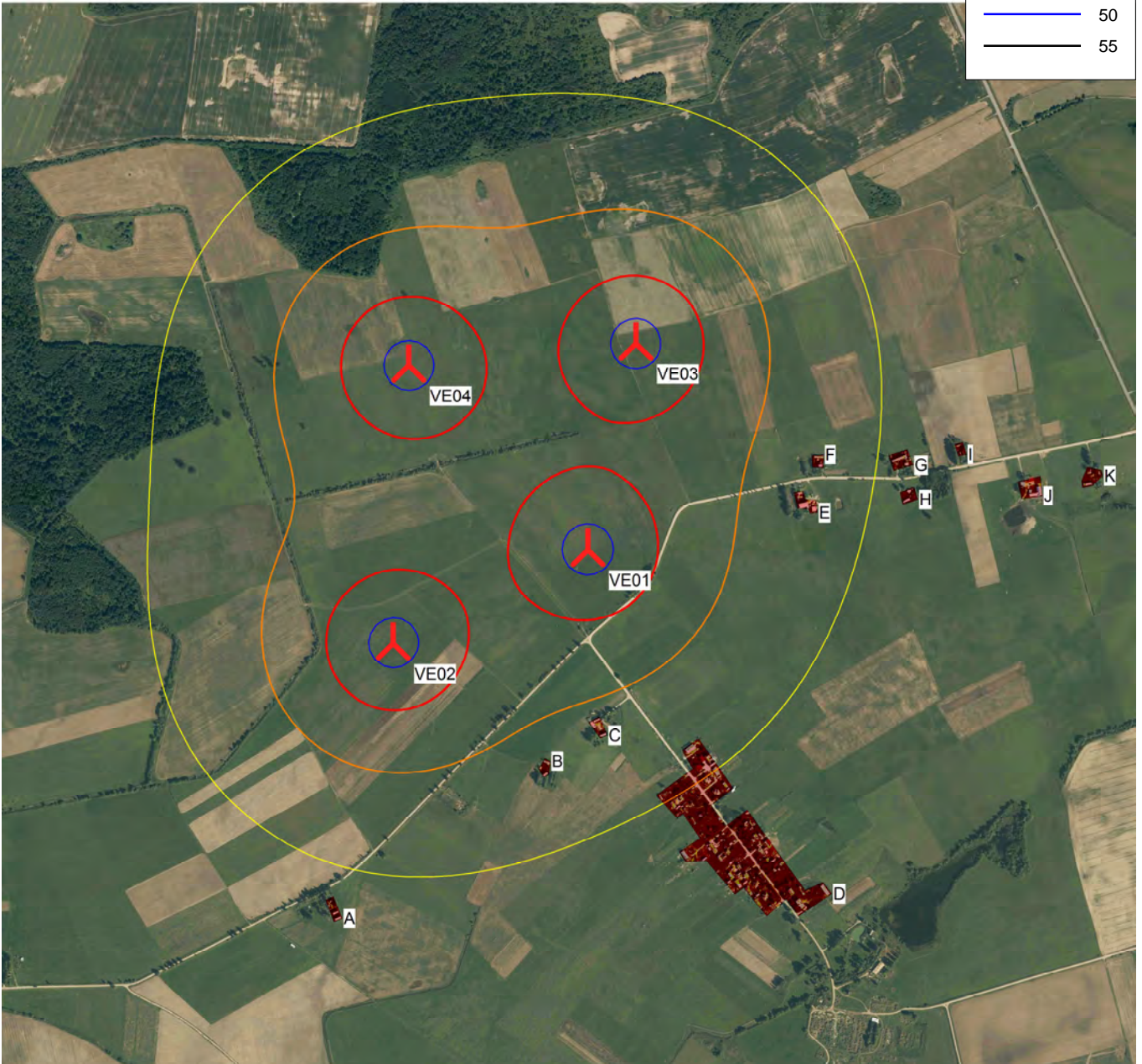
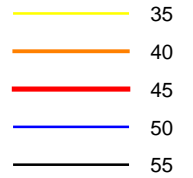
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Calculated:

2018.08.10 13:44/2.9.269

DECIBEL - Map 10,0 m/s

Noise [dB(A)]



0 250 500 750 1000m

Map: kelme1 , Print scale 1:15.000, Map center Lithuanian TM LKS94-LKS94 (LT) East: 434.290 North: 6.153.855

New WTG

Noise sensitive area

Noise calculation model: ISO 9613-2 General. Wind speed: 10,0 m/s
Height above sea level from active line object

Project:

Prognostiniai triukšmo modeliavimo rezultatai

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Calculated:

2018.08.10 13:47/2.9.269

DECIBEL - Main Result**Noise calculation model:**

ISO 9613-2 General

Wind speed:

10,0 m/s

Ground attenuation:

General, Ground factor: 0,6

Meteorological coefficient, C0:

2,0 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:

0,0 m Don't 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)

WTGs

Lithuanian TM LKS94-LKS94 (LT)				WTG type			Noise data				Wind speed	LwA,ref	Pure tones	
East	North	Z	Row data/Description	Valid	Manufact.	Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Creator	Name	[m/s]	[dB(A)]	
1	434.404	6.153.700	140,0 ENERCON E-82 2000 82.0 IO...	No	ENERCON	E-82-2.000	2.000	82,0	108,3	EMD	Level 0 - guaranteed - OM I / Rev. 2.1 - 04/2006	10,0	104,0	0 dB h
2	433.941	6.153.477	137,3 ENERCON E-82 2000 82.0 IO...	No	ENERCON	E-82-2.000	2.000	82,0	108,3	EMD	Level 0 - guaranteed - OM I / Rev. 2.1 - 04/2006	10,0	104,0	0 dB h
3	434.518	6.154.191	140,0 ENERCON E-82 2000 82.0 IO...	No	ENERCON	E-82-2.000	2.000	82,0	108,3	EMD	Level 0 - guaranteed - OM I / Rev. 2.1 - 04/2006	10,0	104,0	0 dB h
4	433.978	6.154.139	140,4 ENERCON E-82 2000 82.0 IO...	No	ENERCON	E-82-2.000	2.000	82,0	108,3	EMD	Level 0 - guaranteed - OM I / Rev. 2.1 - 04/2006	10,0	104,0	0 dB h

h) Generic octave distribution used

Calculation Results**Sound Level****Noise sensitive area**

No.	Name	Lithuanian TM LKS94-LKS94 (LT)			Imission height [m]	Demands Noise [dB(A)]	Sound Level From WTGs [dB(A)]	Demands fulfilled ? Noise
		East	North	Z [m]				
A	Noise sensitive area: German TA Lärm - Unzoned countryside areas (1)	433.799	6.152.875	135,0	0,0	45,0	34,0	Yes
B	Noise sensitive area: German TA Lärm - Unzoned countryside areas (2)	434.301	6.153.204	136,6	0,0	45,0	38,6	Yes
C	Noise sensitive area: German TA Lärm - Unzoned countryside areas (3)	434.429	6.153.303	140,0	0,0	45,0	39,3	Yes
D	Noise sensitive area: German TA Lärm - Unzoned countryside areas (4)	434.647	6.153.238	137,8	0,0	45,0	36,5	Yes
E	Noise sensitive area: German TA Lärm - Unzoned countryside areas (5)	434.893	6.153.836	140,0	0,0	45,0	38,0	Yes
F	Noise sensitive area: German TA Lärm - Unzoned countryside areas (6)	434.935	6.153.925	140,0	0,0	45,0	37,6	Yes
G	Noise sensitive area: German TA Lärm - Unzoned countryside areas (7)	435.118	6.153.924	138,7	0,0	45,0	34,9	Yes
H	Noise sensitive area: German TA Lärm - Unzoned countryside areas (8)	435.145	6.153.836	138,4	0,0	45,0	34,3	Yes
I	Noise sensitive area: German TA Lärm - Unzoned countryside areas (9)	435.275	6.153.951	136,9	0,0	45,0	32,9	Yes
J	Noise sensitive area: German TA Lärm - Unzoned countryside areas (10)	435.425	6.153.862	134,7	0,0	45,0	31,1	Yes
K	Noise sensitive area: German TA Lärm - Unzoned countryside areas (11)	435.577	6.153.864	131,2	0,0	45,0	29,6	Yes

Distances (m)**WTG**

NSA	1	2	3	4
A	1023	618	1500	1276
B	507	452	1011	990
C	398	502	893	950
D	520	722	951	1122
E	507	1013	517	964
F	568	1080	495	981
G	748	1258	657	1160
H	753	1256	721	1206
I	906	1415	794	1311
J	1034	1533	965	1473
K	1184	1679	1108	1622

Project:

Prognostiniai triukšmo modeliavimo rezultatai

VE modelis: Enercon E-82, 2000 kW, bokšto aukštis 108,3 m, rotoriaus skersmuo 82 m, bendras aukštis 149,3 m, maksimalus skleidžiamas triukšmo lygis 104 dB(A)

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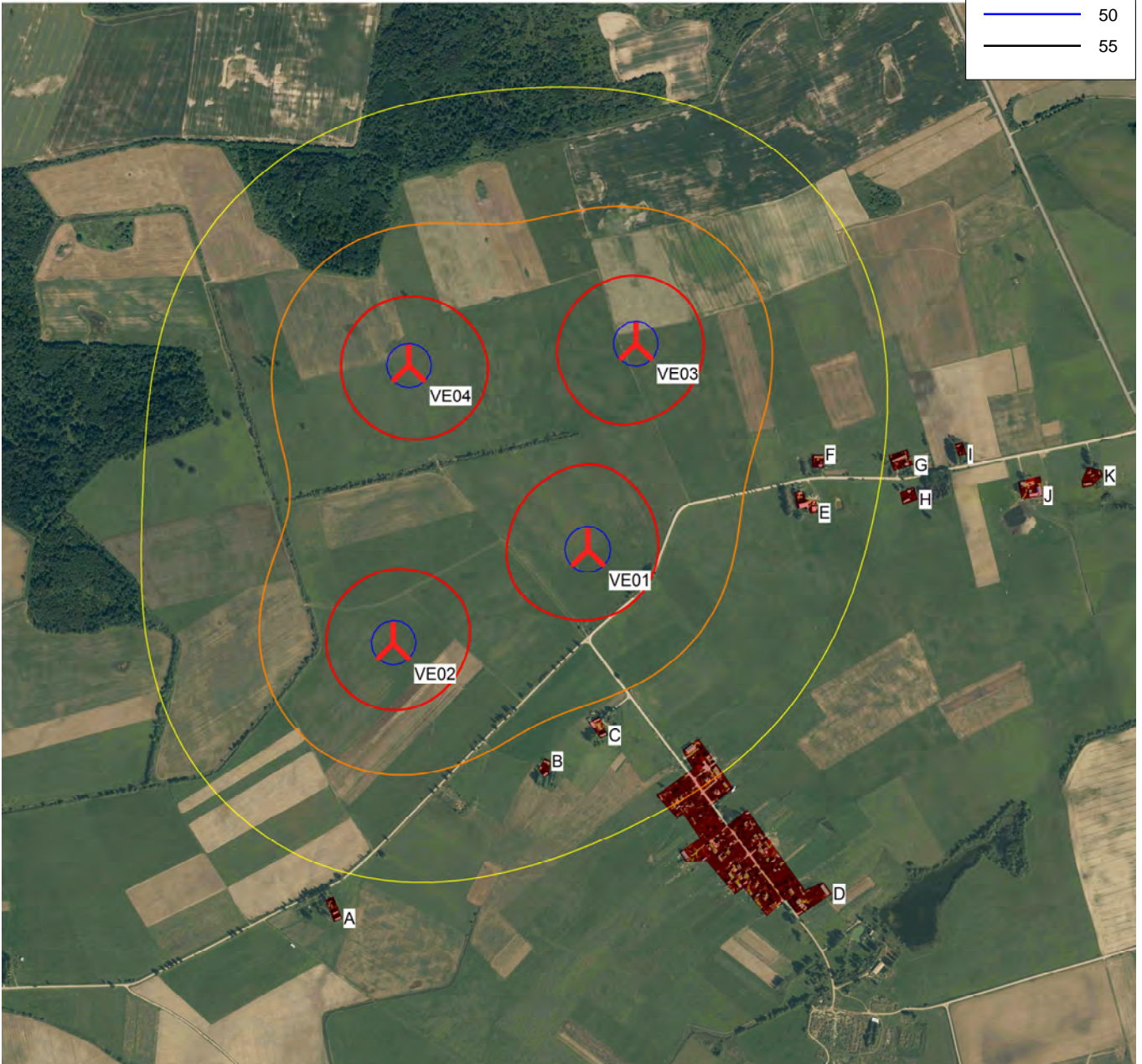
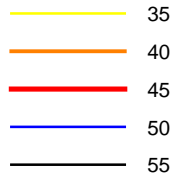
user / nerijus.cesiulis@akolegija.lt

Calculated:

2018.08.10 13:47/2.9.269

DECIBEL - Map 10,0 m/s

Noise [dB(A)]



0 250 500 750 1000m

Map: kelme1 , Print scale 1:15.000, Map center Lithuanian TM LKS94-LKS94 (LT) East: 434.290 North: 6.153.855

New WTG

Noise sensitive area

Noise calculation model: ISO 9613-2 General. Wind speed: 10,0 m/s
Height above sea level from active line object