Project:
Samsø

Description:
Nærværende beregning er vejledende, og der tages forbehold for evt. fejl og mangler i program og udskrift samt for de anvendte forudsætninger.
De i beregningen anvendte koordinater for udendørs opholdsareal er baseret på kort.

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Finsensvej 1
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Ann Danielsen / ann.danielsen@siemens.com
Calculated:
31-03-2017 11:30/3.1.597

DECIBEL - Main Result

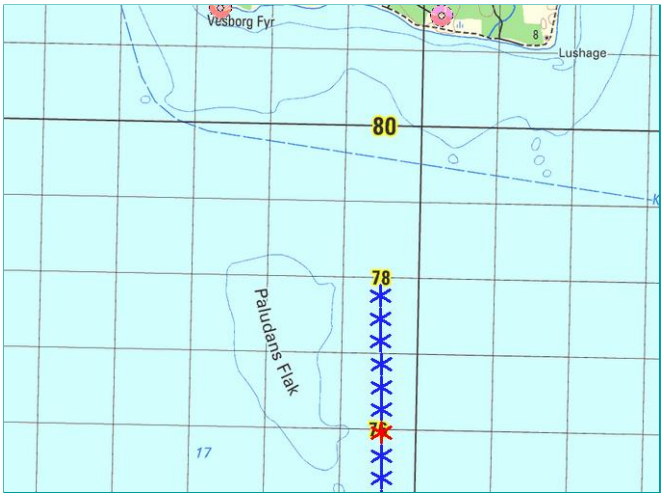
Calculation: Lavfrekvent 9 SWT-2.3-82_61.2NH og 1 SWT-2.3-93_66.5NH Over Hav

Noise calculation model:
Danish Low frequency 2011 and 2015

The calculation is based on the "Bekendtgørelse nr 1736 af 21/12/2015" from the Danish Environmental Agency.

The noise impact from WTGs are not allowed to exceed the following limits: (Wind speeds in 10 m height)
1) At outdoor areas maximum 15 m from neighbor settlements in the open land.
a) 44 db(A) at wind speed 8 m/s.
b) 42 db(A) at wind speed 6 m/s.
2) At outdoor areas in residential or recreational areas.
a) 39 db(A) at wind speed 8 m/s in residential areas.
b) 37 db(A) at wind speed 6 m/s in residential areas.
The low frequency noise impact from WTGs are not allowed to exceed 20 dB indoor at wind speeds 8 and 6 m/s
The limits are not to be taken into acount for houses belonging to WTG owner
Den lavfrekvente støj beregnes indendøre og må ikke overstige 20 dB ved vindhastigheder på 6 og 8 m/s i 10 m højde

All coordinates are in
UTM (north)-ETRS89 Zone: 32



Scale 1:100,000
Existing WTG
Noise sensitive area

WTGs

	Easting	Northing	Z	Row data/Description	WTG type Valid	Manufact.	Type-generator	Power, rated	Rotor diameter	Hub height	Noise data Creator	Name	First wind speed	LwaRef	Last wind speed	LwaRef
			[m]					[kW]	[m]	[m]			[m/s]	[dB(A)]	[m/s]	[dB(A)]
1	599,506	6,177,761	0.0	570715000000062926: 2300 kW ...	Yes	Siemens	SWT-2.3-82 VS-2,300	2,300	82.4	61.2	USER	SWT-2.3-82 Støjmåling DANAK 2232 2002-12-10	6.0	92.0	8.0	96.5
2	599,513	6,177,461	0.0	570715000000062933: 2300 kW ...	Yes	Siemens	SWT-2.3-82 VS-2,300	2,300	82.4	61.2	USER	SWT-2.3-82 Støjmåling DANAK 2232 2002-12-10	6.0	92.0	8.0	96.5
3	599,520	6,177,160	0.0	570715000000062940: 2300 kW ...	Yes	Siemens	SWT-2.3-82 VS-2,300	2,300	82.4	61.2	USER	SWT-2.3-82 Støjmåling DANAK 2232 2002-12-10	6.0	92.0	8.0	96.5
4	599,527	6,176,860	0.0	570715000000062957: 2300 kW ...	Yes	Siemens	SWT-2.3-82 VS-2,300	2,300	82.4	61.2	USER	SWT-2.3-82 Støjmåling DANAK 2232 2002-12-10	6.0	92.0	8.0	96.5
5	599,533	6,176,559	0.0	570715000000062964: 2300 kW ...	Yes	Siemens	SWT-2.3-82 VS-2,300	2,300	82.4	61.2	USER	SWT-2.3-82 Støjmåling DANAK 2232 2002-12-10	6.0	92.0	8.0	96.5
6	599,540	6,176,259	0.0	570715000000062971: 2300 kW ...	Yes	Siemens	SWT-2.3-82 VS-2,300	2,300	82.4	61.2	USER	SWT-2.3-82 Støjmåling DANAK 2232 2002-12-10	6.0	92.0	8.0	96.5
7	599,547	6,175,959	0.0	570715000000062988: 2300 kW ...	Yes	Siemens	SWT-2.3-93-2,300	2,300	92.6	66.5	USER	SWT-2.3-93_66.5HH Rev.4	6.0	92.0	8.0	93.7
8	599,554	6,175,658	0.0	570715000000062995: 2300 kW ...	Yes	Siemens	SWT-2.3-82 VS-2,300	2,300	82.4	61.2	USER	SWT-2.3-82 Støjmåling DANAK 2232 2002-12-10	6.0	92.0	8.0	96.5
9	599,561	6,175,358	0.0	570715000000063008: 2300 kW ...	Yes	Siemens	SWT-2.3-82 VS-2,300	2,300	82.4	61.2	USER	SWT-2.3-82 Støjmåling DANAK 2232 2002-12-10	6.0	92.0	8.0	96.5
10	599,568	6,175,057	0.0	570715000000063015: 2300 kW ...	Yes	Siemens	SWT-2.3-82 VS-2,300	2,300	82.4	61.2	USER	SWT-2.3-82 Støjmåling DANAK 2232 2002-12-10	6.0	92.0	8.0	96.5

Calculation Results

Sound level

Noise sensitive area No.	Name	Easting	Northing	Z	Imission height	Wind speed	Demands Noise	Sound level From WTGs	Demands fulfilled ? Noise
				[m]	[m]	[m/s]	[dB(A)]	[dB(A)]	
A	Noise sensitive point: Danish 2011 low frequency - Indoor (3)	600,241	6,181,465	7.5	1.5	6.0	20.0	2.5	Yes
A						8.0	20.0	6.4	Yes
B	Noise sensitive point: Danish 2011 low frequency - Indoor (4)	597,323	6,181,507	18.0	1.5	6.0	20.0	1.6	Yes
B						8.0	20.0	5.5	Yes

Distances (m)

WTG	A	B
1	3777	4336
2	4070	4601
3	4365	4871
4	4660	5144
5	4957	5420
6	5253	5698
7	5550	5978
8	5848	6261
9	6145	6544
10	6444	6830

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DECIBEL - Map 6.0 m/s

Calculation: Lavfrekvent 9 SWT-2.3-82_61.2NH og 1 SWT-2.3-93_66.5NH Over Hav

Map: Kort25-0505_6180_580 6180_580, Print scale 1:60,000, Map center UTM (north)-ETRS89 Zone: 32 East: 599,537 North: 6,176,409

Existing WTG Noise sensitive area

Noise calculation model: Danish Low frequency 2011 and 2015. Wind speed: 6.0 m/s
Height above sea level from active line object

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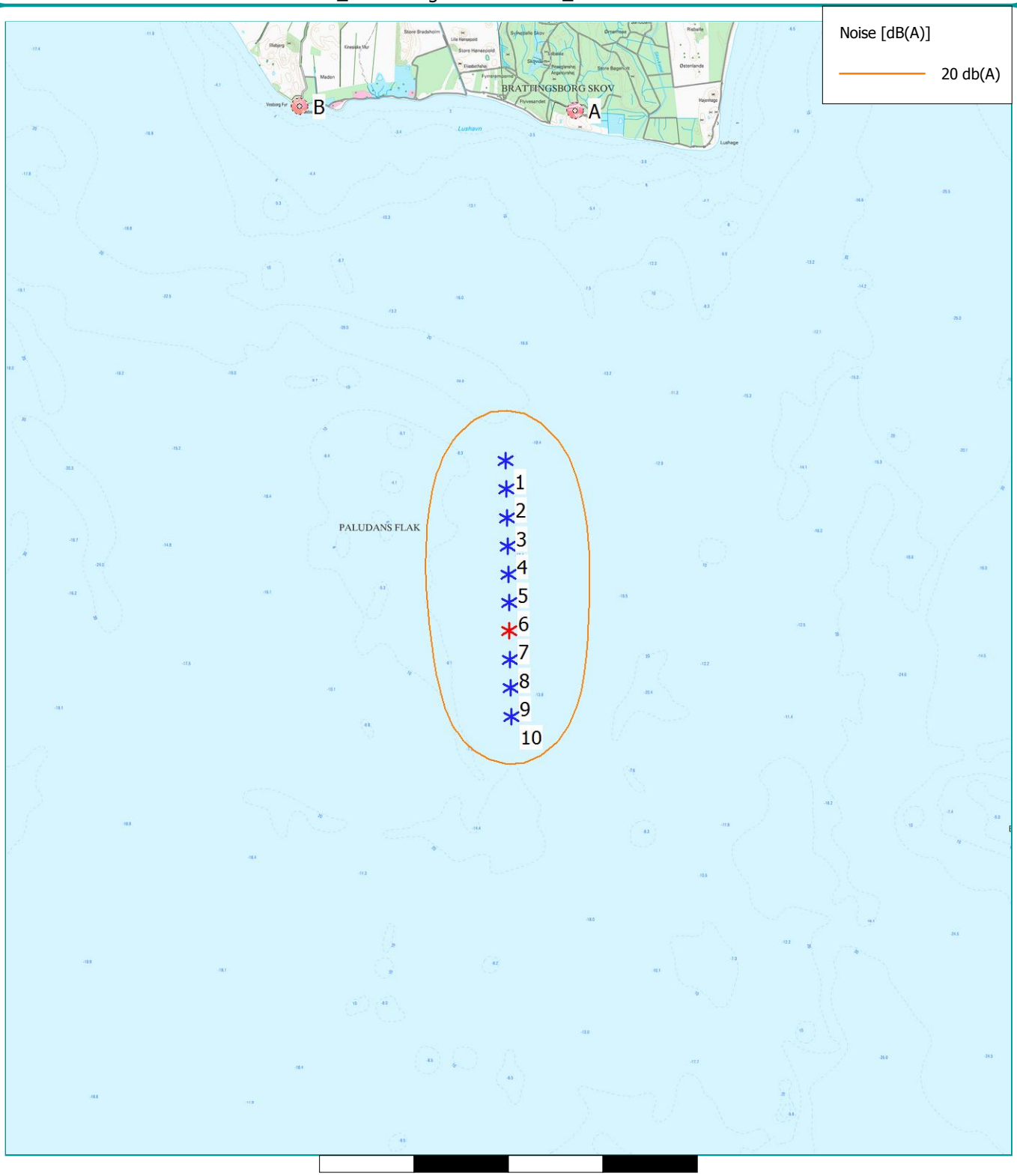
DECIBEL - Map 8.0 m/s

Calculation: Lavfrekvent 9 SWT-2.3-82_61.2NH og 1 SWT-2.3-93_66.5NH Over Hav



Map: Kort25-0505_6180_580 6180_580, Print scale 1:60,000, Map center UTM (north)-ETRS89 Zone: 32 East: 599,537 North: 6,176,409

Existing WTG Noise sensitive area

Noise calculation model: Danish Low frequency 2011 and 2015. Wind speed: 8.0 m/s
Height above sea level from active line object