

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.

Licensed user:
Siemens Wind Power A/S
Finsensvej 1
DK-7430 Ikast

Ann Danielsen / ann.danielsen@siemens.com
Calculated:
31-03-2017 10:57/3.1.597

DECIBEL - Main Result

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

Noise calculation model:

Danish 2011 and 2015

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

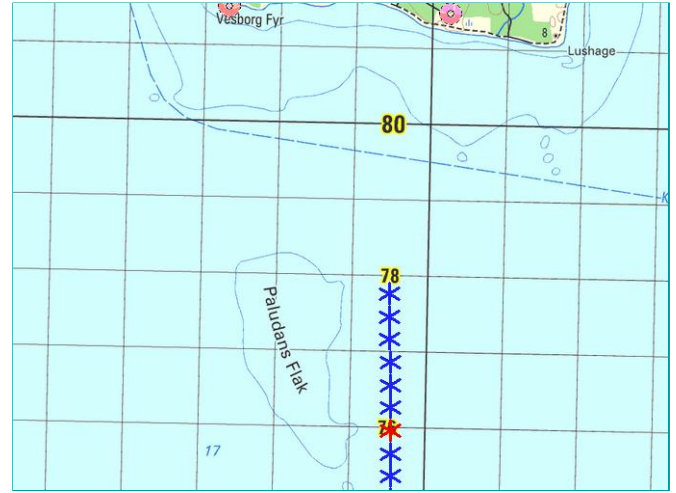
The noise impact from WTGs are not allowed to exceed the following limits: (Wind speeds in 10 m height)

- 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 account for houses belonging to WTG owner

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 | | | Power, rated | Rotor diameter | Hub height | Noise data | | First wind speed [m/s] | LwaRef [dB(A)] | Last wind speed [m/s] | LwaRef [dB(A)] | Pure tones |
|---------|----------|-----------|-----------------------------------------|----------|-----------|---------------------|--------------|----------------|------------|------------|---------------------------------------------|------------------------|----------------|-----------------------|----------------|------------|
| | | | | Valid | Manufact. | Type-generator | | | | Creator | Name | | | | | |
| 1 | 599,506 | 6,177,761 | 0.0 570715000000062926: 2300 kW B...Yes | 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 | 102.6 | 8.0 | 105.3 | No |
| 2 | 599,513 | 6,177,461 | 0.0 570715000000062933: 2300 kW B...Yes | 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 | 102.6 | 8.0 | 105.3 | No |
| 3 | 599,520 | 6,177,160 | 0.0 570715000000062940: 2300 kW B...Yes | 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 | 102.6 | 8.0 | 105.3 | No |
| 4 | 599,527 | 6,176,860 | 0.0 570715000000062957: 2300 kW B...Yes | 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 | 102.6 | 8.0 | 105.3 | No |
| 5 | 599,533 | 6,176,559 | 0.0 570715000000062964: 2300 kW B...Yes | 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 | 102.6 | 8.0 | 105.3 | No |
| 6 | 599,540 | 6,176,259 | 0.0 570715000000062971: 2300 kW B...Yes | 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 | 102.6 | 8.0 | 105.3 | No |
| 7 | 599,547 | 6,175,959 | 0.0 570715000000062988: 2300 kW B...Yes | 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 | 103.3 | 8.0 | 105.4 | No |
| 8 | 599,554 | 6,175,658 | 0.0 570715000000062995: 2300 kW B...Yes | 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 | 102.6 | 8.0 | 105.3 | No |
| 9 | 599,561 | 6,175,358 | 0.0 570715000000063008: 2300 kW B...Yes | 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 | 102.6 | 8.0 | 105.3 | No |
| 10 | 599,568 | 6,175,057 | 0.0 570715000000063015: 2300 kW B...Yes | 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 | 102.6 | 8.0 | 105.3 | No |

Calculation Results

Sound level

Noise sensitive area

| No. | Name | Easting | Northing | Z | Imission height [m] | Wind speed [m/s] | Demands | | Sound level From WTGs [dB(A)] | Demands fulfilled ? |
|-----|----------------------------------------------------|---------|-----------|------|---------------------|------------------|---------------|---------------|-------------------------------|---------------------|
| | | | | | | | Noise [dB(A)] | Noise [dB(A)] | | |
| A | Noise sensitive point: Danish 2007 - Open land (1) | 600,241 | 6,181,465 | 7.5 | 1.5 | 6.0 | 42.0 | 22.4 | Yes | |
| A | | | | | | | 8.0 | 25.2 | Yes | |
| B | Noise sensitive point: Danish 2007 - Open land (2) | 597,323 | 6,181,507 | 18.0 | 1.5 | 6.0 | 42.0 | 21.0 | Yes | |
| B | | | | | | | 8.0 | 23.9 | 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 |

Project:
Samsø

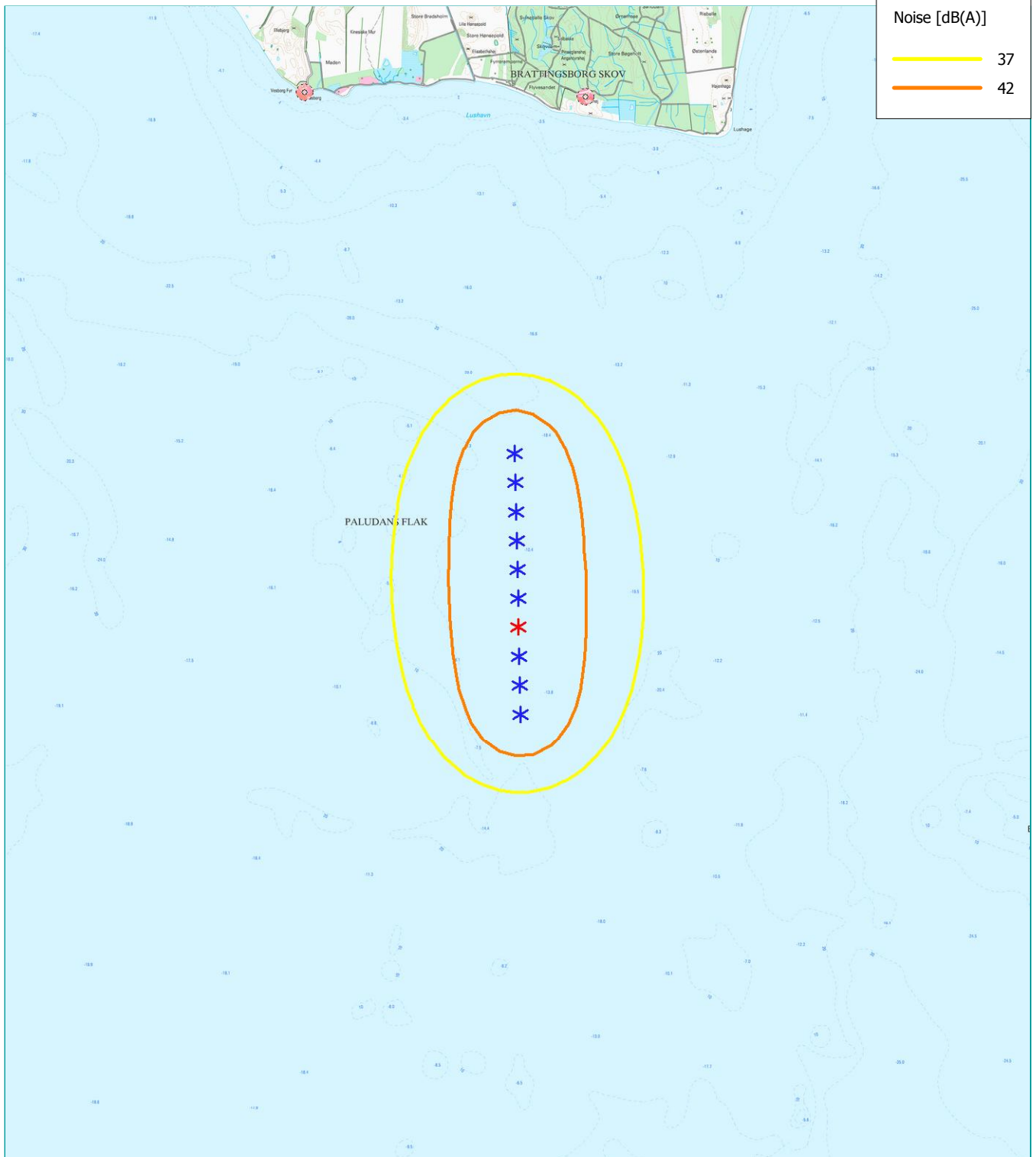
Description:
Nærværende beregning er vejledende, og der tages forbehold for evt. fejl og mangler i program og udskrift samt for de anvendte forudsætninger.
De i beregningen anvendte koordinater for udendørs opholdsareal er baseret på kort.

Licensed user:
Siemens Wind Power A/S
Finsensvej 1
DK-7430 Ikast

Ann Danielsen / ann.danielsen@siemens.com
Calculated:
31-03-2017 10:57/3.1.597

DECIBEL - Map 6.0 m/s

Calculation: 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 2011 and 2015. Wind speed: 6.0 m/s
Height above sea level from active line object

Project:
Samsø

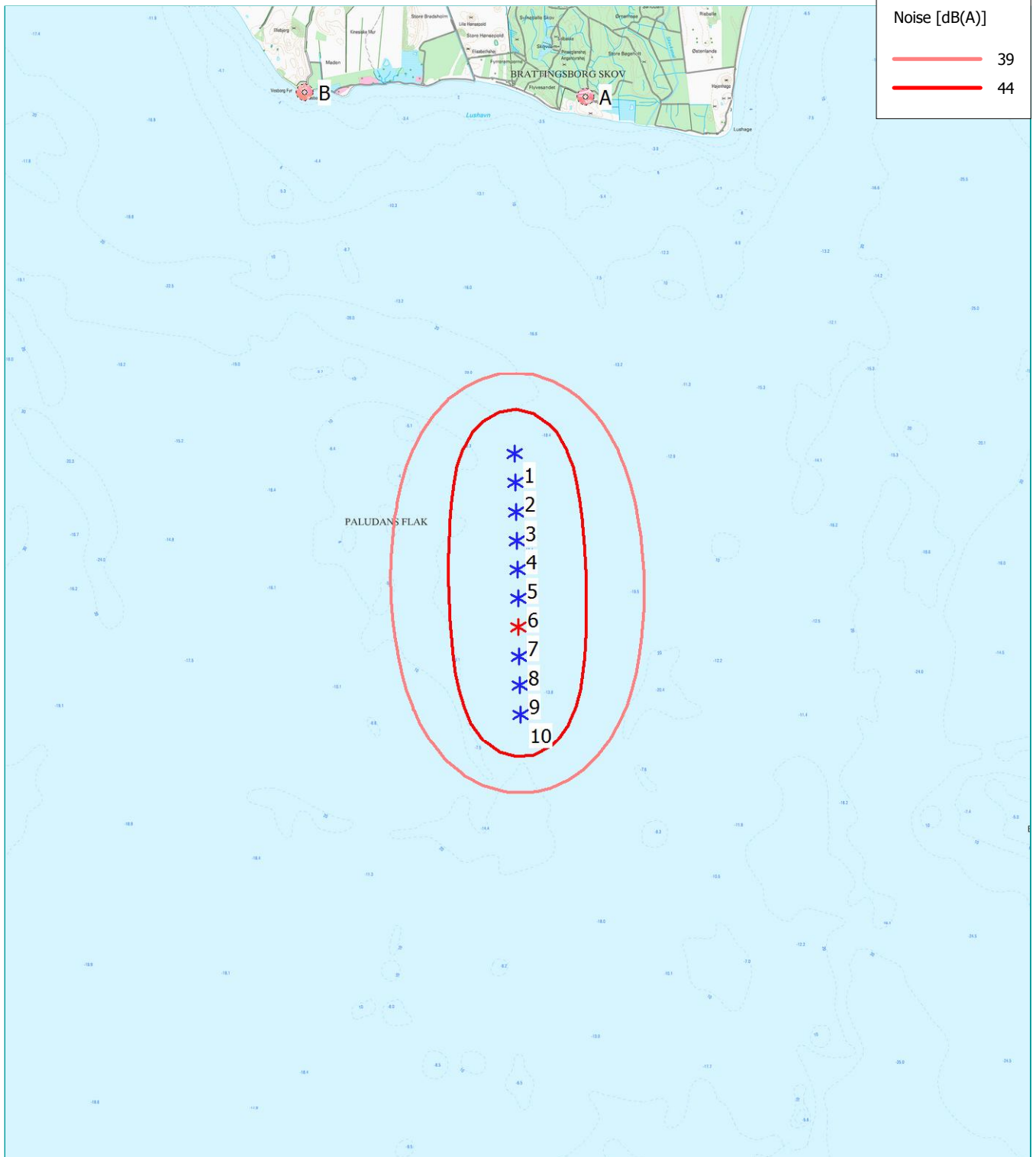
Description:
Nærværende beregning er vejledende, og der tages forbehold for evt. fejl og mangler i program og udskrift samt for de anvendte forudsætninger.
De i beregningen anvendte koordinater for udendørs opholdsareal er baseret på kort.

Licensed user:
Siemens Wind Power A/S
Finsensvej 1
DK-7430 Ikast

Ann Danielsen / ann.danielsen@siemens.com
Calculated:
31-03-2017 10:57/3.1.597

DECIBEL - Map 8.0 m/s

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



0 1 2 3 4 km

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 2011 and 2015. Wind speed: 8.0 m/s
Height above sea level from active line object