Stokkfjellet II Vindkraftverk

Rapport støy og skyggekast, Revisjon 1

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Til	Sveinung Susort, Aneo AS
Fra	Meventus AS
Dato	13.02.2026
Rapportens tittel	**Stokkfjellet II Vindkraftverk – Rapport støy og skyggekast, Revisjon 1**
Rapport nr.	2024-009, Rev 1
Skrevet av	Anne Haaland Simonsen

	Navn	Dato	Signatur
Utført av	Anne Haaland Simonsen	13.02.2026	
Godkjent av	Kyle Brennan	13.02.2026	

Denne reviderte utgaven av rapporten inkluderer følgende endringer fra den originale versjonen:

- Rev 1 (13.02.2026):
  - For utbyggingsalternativ 2 er turbintypen V150-6.0MW med 105 m navhøyde byttet ut med Nordex N149-5.9MW-turbiner med 120 m navhøyde (totalhøyde 194.5 m). Samtlige støy- og skyggekastberegninger for alternativ 2 er oppdatert med denne turbintypen.
  - Støyberegningene utført for utbyggingsalternativ 1 (V136-4.5MW med 112 m navhøyde) er oppdatert grunnet en liten endring i programvaren som resulterte i en minimal endring i støyberegningene.
  - 8 seterhus var feilaktig markert som ikke støy- og skyggekastsensitive i den originale versjonen av rapporten. Dette er nå korrigert og de er i denne reviderte versjonen av rapporten hensyntatt som støy- og skyggekastsensitiv bebyggelse. Dette gjelder byggene H, L, M, O, P, V, AE og AF.

Sammendrag

Denne rapporten presenterer forventet omfang av støy og skyggekast fra en aktuell utvidelse av det eksisterende vindkraftverket Stokkfjellet i Selbu kommune i Trøndelag fylke.

Stokkfjellet I vindkraftverk ble idriftsatt i 2021 og består av 21 turbiner av typen Vestas V136-4.2MW med 136 m rotordiameter og 112 m navhøyde. Oppdragsgiver ønsker nå en utvidelse av dette anlegget, og det er utarbeidet en mulig utbyggingsløsning bestående av 9 turbinlokasjoner sør for de eksisterende turbinene. I denne rapporten er omfang av støy og skyggekast fra de planlagte turbinene beregnet for to ulike turbintyper, V136-4.5MW med 112 m navhøyde og N149-5.9MW med 120 m navhøyde. Beregningene er utført i henhold til gjeldende retningslinjer.

Omfanget av støy og skyggekast er beregnet for totalt 34 nabobygg, hvorav 23 av disse anses som støy- og skyggekastsensitiv bebyggelse.

Skyggekastberegningene for de to utbyggingsalternativene viser at 19 av de 23 nabobyggene som anses å ha skyggekastfølsomt bruk forventes å bli eksponert for skyggekast over anbefalt grenseverdi på 8 timer med faktisk skyggekast per år. For teoretisk maksimalt skyggekast forventes 19 av disse byggene å bli eksponert for skyggekast over 30 timer per år, mens 17 av byggene forventes å få skyggekast over 30 minutter per dag. Avbøtende tiltak vil gjennomføres for å få omfang av skyggekast ned på et akseptabelt nivå. Dette kan gjøres ved montering av skyggekastsensorer som registrerer perioder med skyggekast, og som eventuelt kan stoppe turbiner i enkelte perioder ved behov.

Støyberegningene viser at 21 av de 23 støysensitive nabobyggene vil eksponeres for støyverdier over 40 dB ved verste scenario-beregning av støynivået. Av disse vil 14 bygg eksponeres for støyverdier over grenseverdien på 45 dB (gul vurderingssone). 3 av byggene vil eksponeres for støyverdier over 50 dB (rød sone). Overskridelser av støygrensen vil løses i form av avbøtende tiltak.

Det kan bli endringer i turbintype og turbinplasseringer frem mot en eventuell utbygging av prosjektet som kan medføre endringer i støy- og skyggekastpåvirkning for nærliggende nabobygg.

Innhold

1 Innledning

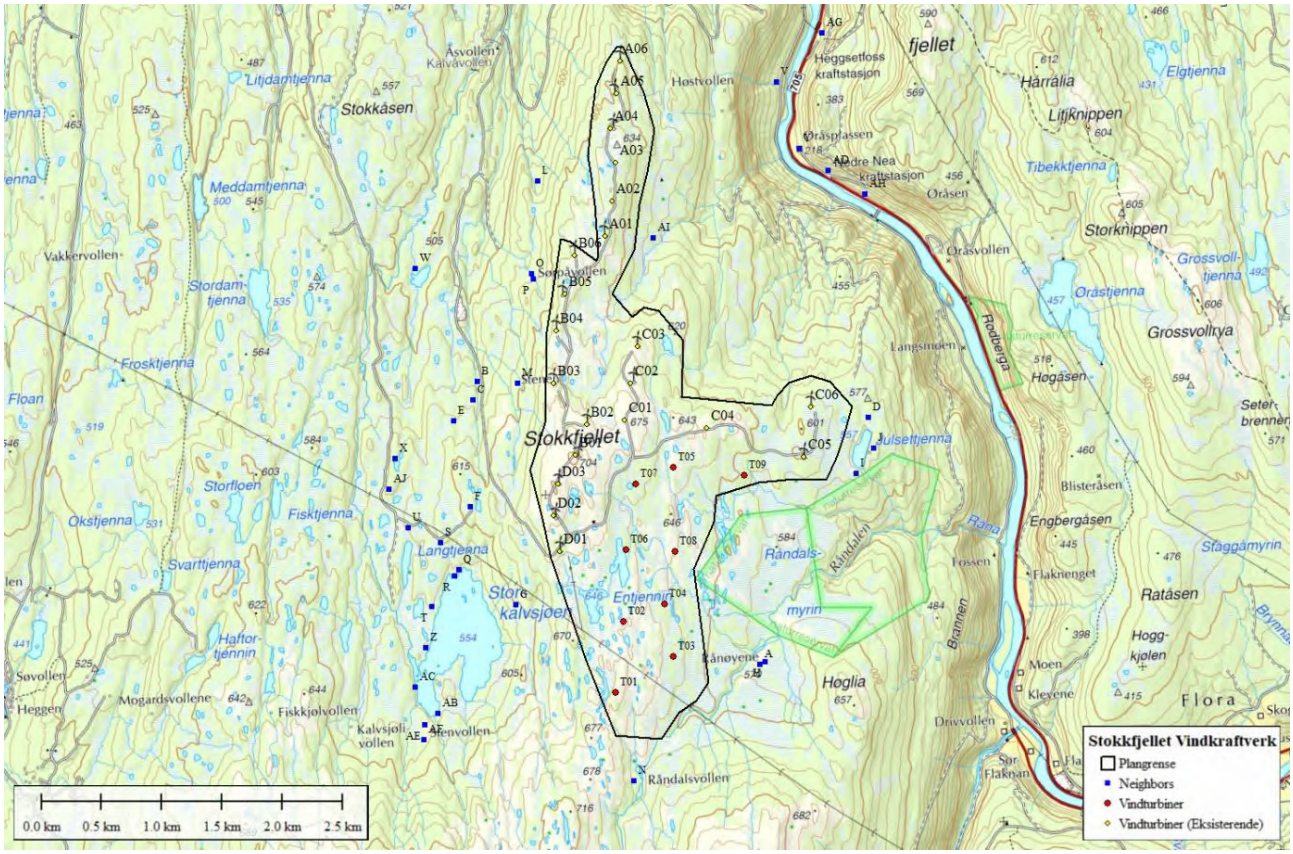
Denne rapporten presenterer forventet omfang av støy og skyggekast fra en aktuell utvidelse av det eksisterende vindkraftverket Stokkfjellet i Selbu kommune i Trøndelag fylke.

Stokkfjellet I vindkraftverk ble idriftsatt i 2021 og består av 21 turbiner av typen Vestas V136-4.2MW med 136 m rotordiameter og 112 m navhøyde. Anlegget er eid av Aneo Vind AS.

Oppdragsgiver ønsker nå en utvidelse av dette anlegget mot sør, og i den forbindelse har Meventus fått i oppdrag å kartlegge forventet omfang av støy- og skyggekast fra planlagte og eksisterende vindturbiner for nærliggende bebyggelse.

Den planlagte utvidelsen består av 9 turbinlokasjoner, og det er gjort beregninger for to ulike turbintyper, V136-4.5MW med 112 m navhøyde og N149-5.9MW med 120 m navhøyde.

Omfanget av støy- og skyggekast er beregnet for totalt 34 nabobygg, hvorav 23 av disse anses som støy- og skyggekastsensitiv bebyggelse. En oversikt over turbinposisjoner og nabobebyggelse er presentert i Figur 1 under, mens koordinatene til disse er tilgjengelig i vedlegg A.



Figur 1 – Oversikt over aktuelt utbyggingsalternativ, eksisterende turbiner og nærliggende bebyggelse

2 Skyggekast

2.1 Beregningsmetodikk

Skyggekast oppstår når en vindturbin i drift blir stående mellom solen og et mottakerpunkt, og det dannes roterende skygger fra rotorbladenes bevegelser. Hvor og når skyggekast inntreffer avhenger blant annet av lokal topografi, tidspunkt på dagen, sesong og mottakerpunktets lokalisering i forhold til vindturbinen.

2.1.1 Retningslinje

Skyggekastberegningene er gjennomført i henhold til gjeldende retningslinje («Skyggekast fra Vindkraftverk, NVE 2/2014»).

Den aktuelle retningslinjen inkluderer grenser for maksimalt teoretisk («worst case») og sannsynlig («real case») scenario. I henhold til retningslinjen skal det ved beregning av sannsynlig skyggekast legges til grunn en konstant solsinnssannsynlighet på 0.5 og forventet sektorvis antall driftstimer for turbinene skal benyttes. Maksimalt teoretisk skyggekast er derimot kun basert på solens posisjon relativ til vindturbinen, hvor det antas at solen alltid skinner, turbinene er i drift hele tiden og vindretningen er slik at turbinene alltid står vendt mot skyggekastmottaker.

NVE legger i sin veileder [1] til grunn en anbefalt grenseverdi for faktisk skyggekast («real case») inntil 8 timer per år eller for maksimalt teoretisk skyggekast («worst case») inntil 30 timer per år eller inntil 30 minutter per dag. Grenseverdien for maksimalt teoretisk skyggekast kan fravikes dersom faktisk skyggekast begrenses til under 8 timer per år og 30 minutter per dag gjennom avbøtende tiltak.

2.1.2 Metode og parametervalg

Beregningene er utført i beregningsmodulen SHADOW i programvaren WindPRO versjon 3.6.377 og 4.2.285. Følgende antagelser er lagt til grunn i beregningene:

- Standard faktor for solskinnssannsynlighet på 0.5.
- 12 sektors vindretningsfordeling.
- Årlig driftstid på 7000 timer.
- Naboer som ligger mer enn 1500 m unna nærmeste turbin er ikke hensyntatt.
- Skyggekast inntreffer ikke når solen står lavere enn 3 grader over horisonten.
- Beregninger av teoretisk skyggekast er basert på drivhustilstand, det vil si at bygningene ikke har én bestemt retning mot turbinene og at mottakeren har vinduer i alle retninger. Mottakeren er angitt som en vertikal flate på 2x2 m hevet 2 meter over bakken.
- Skjermingseffekt av mellomliggende terreng er hensyntatt (basert på DTM data med 1 m oppløsning).

Det tas i beregningene ikke direkte hensyn til innflytelsen av skog og trær. Enkelte skyggekastmottakere kan dermed i realiteten være skjult bak skog, mens beregningene feilaktig viser at bygget vil bli påvirket av skyggekast.

2.2 Turbindata

Som beskrevet innledningsvis er det utført skyggekastberegninger for et utbyggingsalternativ med 9 vindturbiner. Det er gjort beregninger for to forskjellige turbintyper, Vestas V136-4.5MW med 112 m navhøyde og Nordex N149-5.9MW med 120 m navhøyde. Totalhøyde for de to alternativene er henholdsvis 180 og 194.5 m. De planlagte vindturbinene er en mulig utvidelse av eksisterende Stokkfjellet vindkraftanlegg som består av 21 turbiner av typen Vestas V136-4.2MW med 112 m navhøyde, og skyggekastberegningene inkluderer samtlige 30 turbiner.

I henhold til gjeldende retningslinje er det lagt til grunn en årlig driftstid på 7000 timer i beregningene. Retningsfordeling av driftstimene er basert på 3 år med lokale vindmålinger fra en nærliggende 50 m høy målemast (mast 2207), ekstrapolert til en 20-års tidsperiode med referansedata fra datasettet EMDConWX. Fordeling av driftstimer basert på de langtidskorrigerte vinddataene er vist i Tabell 1. Kun vinddata innenfor turbinens operasjonelle rekkevidde er inkludert.

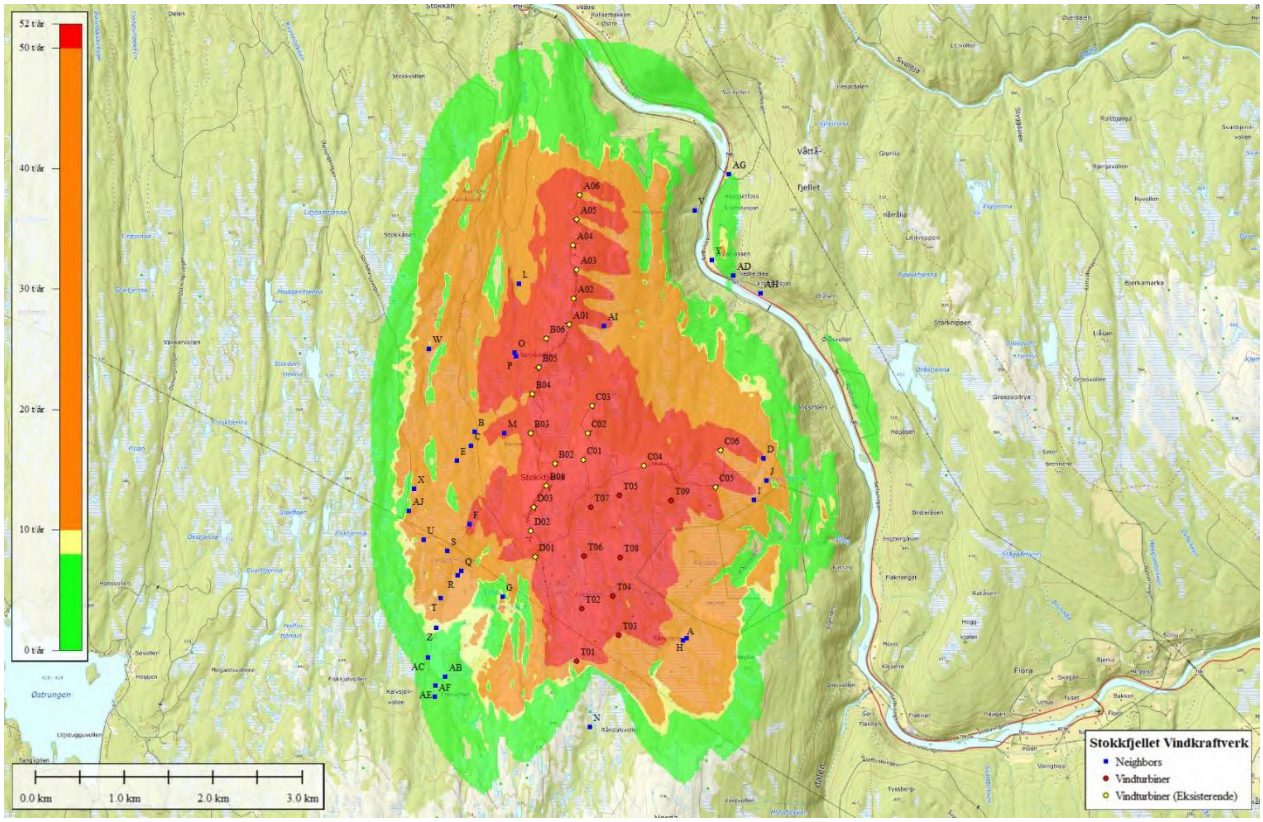
Tabell 1 – Retningsfordeling av driftstimer for turbinene

	N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
Driftstimer	120	62	61	138	1065	1629	713	293	381	880	1182	476	7000

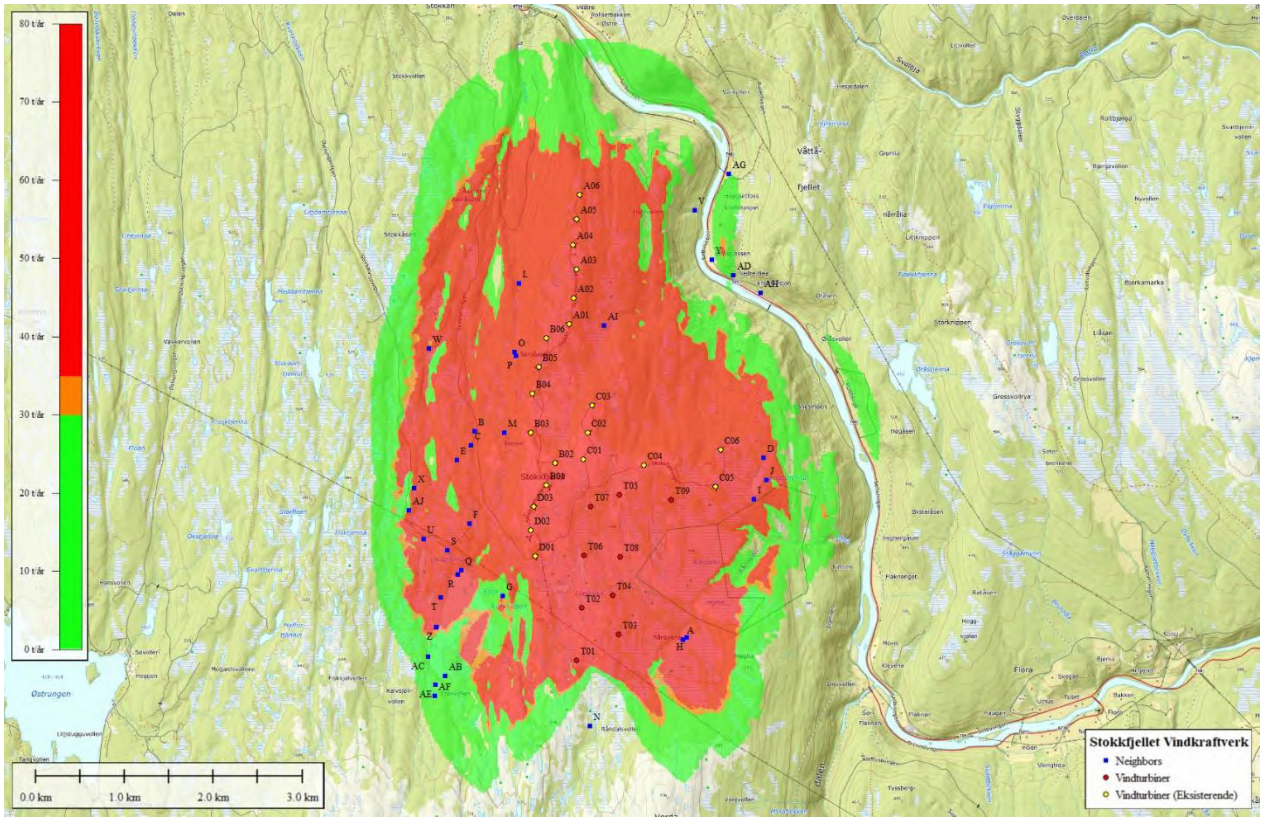
Totalt 34 bygg er hensyntatt i beregningene, hvorav 23 av disse anses som skyggekastfølsom bebyggelse. En oversikt over turbinplassering og nærliggende boliger er presentert i oversiktskartet i Figur 1.

2.3 Resultater

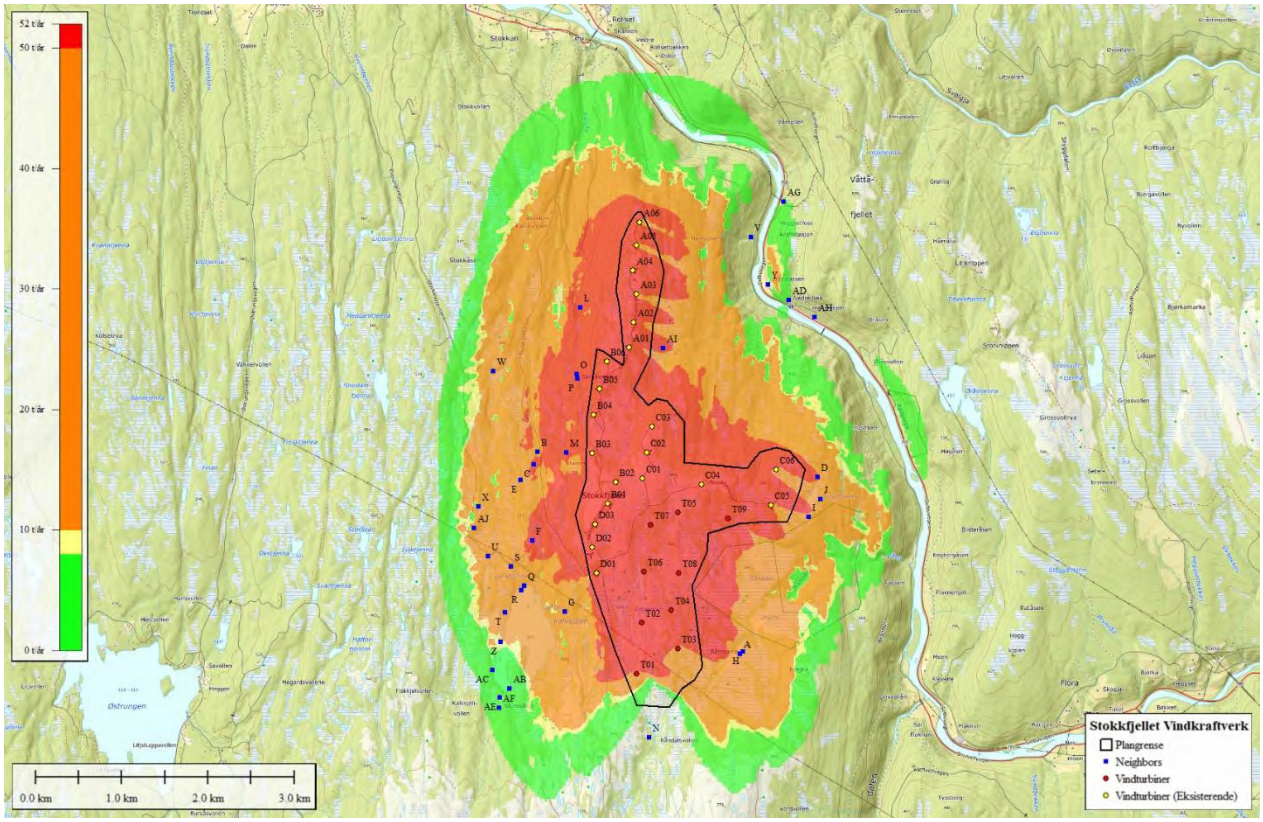
Beregnet omfang av skyggekast er presentert i form av skyggekastkart for sannsynlig skyggekast (timer/år) og teoretisk maksimalt skyggekast (timer/år) for alternativ 1 (V136-4.5MW) i Figur 2 og Figur 3, og for alternativ 2 (N149-5.9MW) i Figur 4 og Figur 5. Områder som ventes å oppleve skyggekast er fargelagt. Grønne områder er områder som er eksponert for skyggekast, men hvor omfanget er under nåværende grenseverdi. Skyggekastomfanget i gule, oransje og røde områder er eksponert over anbefalt grenseverdi i retningslinjen fra NVE. Hensyntatt bebyggelse er markert med blå firkanter.



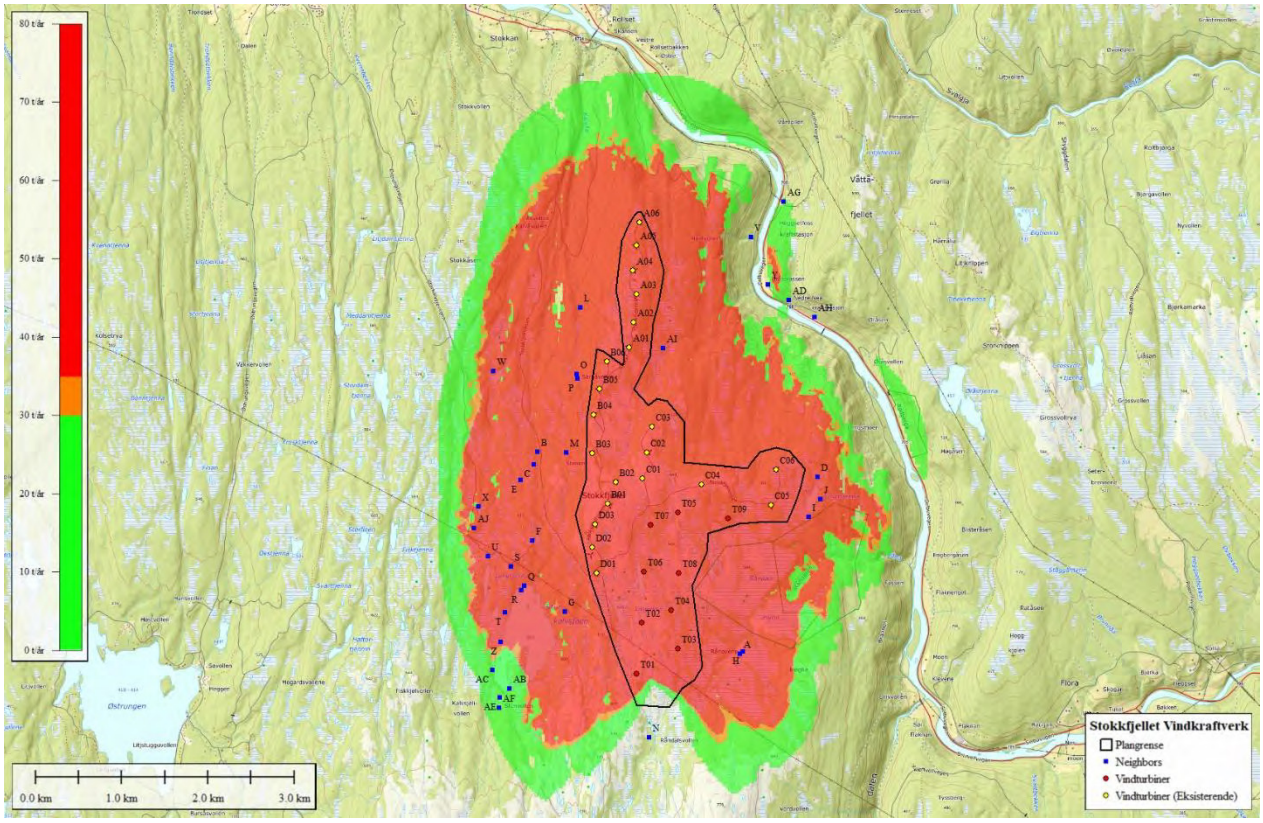
Figur 2 – Beregnet omfang av sannsynlig skyggekast (timer/år) for Alt.1 (9xV136-4.5MW-112mHH)



Figur 3 – Beregnet omfang av teoretisk maksimalt skyggekast (timer/år) for Alt.1 (9xV136-4.5MW-112mHH)



Figur 4 – Beregnet omfang av sannsynlig skyggekast (timer/år) for Alt.2 (9xN149-5.9MW-120mHH)



Figur 5 – Beregnet omfang av teoretisk maksimalt skyggekast (timer/år) for Alt.2 (9xN149-5.9MW-120mHH)

Beregnede verdier av skyggekastomfang for samtlige 34 nabobygg er presentert i Tabell 2 for alternativ 1 (Stokkfjellet I + 9xV136-4.5MW) og i Tabell 3 for alternativ 2 (Stokkfjellet I + 9xN149-5.9MW). Beregnede verdier for kun de eksisterende turbinene er også inkludert i hver av tabellene. Verdier som overstiger de gjeldende grenseverdiene for skyggkastfølsom bebyggelse er markert med gult, mens bygg som ikke anses å ha skyggekastfølsomt bruk er markert med grått.

Tabell 2 – Beregnet omfang av skyggekast for nærliggende bebyggelse (Alt. 1: 9xV136-4.5MW-112mHH)

Bygg	Type	Beregnet sannsynlig skyggekast [timer/år]		Beregnet teoretisk maksimalt skyggekast [timer/år]		Beregnet teoretisk maksimalt skyggekast [timer/dag]	
		Før tiltak					
		Stokkfjellet I	Stokkfjellet I+II	Stokkfjellet I	Stokkfjellet I+II	Stokkfjellet I	Stokkfjellet I+II
A	Fritidsbolig	0.0	36.3	0.0	115.9	0.0	1.2
B	Fritidsbolig (revet)	36.9	36.9	1cute.6	122.6	0.8	0.8
C	Fritidsbolig	48.0	48.0	168.3	168.3	1.0	1.0
D	Fritidsbolig	49.2	53.7	167.9	185.9	1.1	1.4
E	Fritidsbolig	41.5	42.2	152.8	155	1.1	1.1
F	Fritidsbolig	53.9	59.2	205.4	222.1	2.0	2.0
G	Garasje/Uthus	0.0	12.4	0.0	41.6	0.0	0.6
H	Seterhus	0.0	36.4	0.0	116	0.0	1.1
I	Fritidsbolig	34.3	42.8	106.7	135.9	1.2	1.2
J	Fritidsbolig	31.4	35.4	103.5	118.3	1.3	1.3
L	Seterhus	35.5	35.5	131.5	131.5	0.9	0.9
M	Seterhus	74.3	74.3	250.2	250.2	1.6	1.6
N	Seterhus (revet)	0.0	0	0.0	0	0.0	0.0
O	Seterhus	80.8	80.8	274.4	274.4	1.5	1.5
P	Seterhus	102.8	102.8	339.1	339.1	1.6	1.6
Q	Naust/Sjøbu	13.4	19.3	51.9	71	0.6	0.6
R	Fritidsbolig	12.4	19.1	49.1	71.1	0.6	0.7
S	Fritidsbolig	30.3	34	124.4	136.5	1.3	1.3
T	Fritidsbolig	8.7	14.4	37.9	56.9	0.5	0.5
U	Fritidsbolig	17.4	17.4	68.6	68.6	1.0	1.0
V	Seterhus	0.0	0.0	0.0	0.0	0.0	0.0
W	Garasje/Uthus	15.9	15.9	53.4	53.4	0.7	0.7
X	Fritidsbolig	18.1	18.1	66.4	66.4	0.6	0.6
Y	Fritidsbolig	0.0	0.0	0.0	0.0	0.0	0.0
Z	Fritidsbolig	5.2	9.0	24.3	37.0	0.4	0.4
AB	Naust/Sjøbu	0.0	4.4	0.0	16.9	0.0	0.4
AC	Naust/Sjøbu	2.1	3.9	11.0	17.1	0.3	0.3
AD	Ukjent	0.0	0.0	0.0	0.0	0.0	0.0
AE	Seterhus	0.0	2.0	0.0	7.2	0.0	0.3
AF	Seterhus	0.0	1.9	0.0	7.2	0.0	0.3
AG	Heggsetfoss Kraftstasjon	0.0	0.0	0.0	0.0	0.0	0.0
AH	Ukjent	0.0	0.0	0.0	0.0	0.0	0.0
AI	Jaktkoie	60.6	60.6	234.6	234.6	1.3	1.3
AJ	Fritidsbolig	14.6	14.6	52.7	52.7	0.6	0.6
Grense		8.0		30.0		0.5	

Tabell 3 – Beregnet omfang av skyggekast for nærliggende bebyggelse (9xN149-5.9MW-120mHH)

Bygg	Type	Beregnet sannsynlig skyggekast [timer/år]		Beregnet teoretisk maksimalt skyggekast [timer/år]		Beregnet teoretisk maksimalt skyggekast [timer/dag]	
		Før tiltak					
		Stokkfjellet I	Stokkfjellet I+II	Stokkfjellet I	Stokkfjellet I+II	Stokkfjellet I	Stokkfjellet I+II
A	Fritidsbolig	0.0	42.0	0.0	134.1	0.0	1.3
B	Fritidsbolig (revet)	36.9	36.9	122.6	122.6	0.8	0.8
C	Fritidsbolig	48.0	48.2	168.3	168.9	1.0	1.0
D	Fritidsbolig	49.2	54.4	167.9	188.5	1.1	1.5
E	Fritidsbolig	41.5	42.7	152.8	156.6	1.1	1.1
F	Fritidsbolig	53.9	60.9	205.4	227.6	2.0	2.0
G	Garasje/Uthus	0.0	17.7	0.0	60.7	0.0	0.7
H	Seterhus	0.0	41.6	0.0	133.0	0.0	1.2
I	Fritidsbolig	34.3	44.4	106.7	141.5	1.2	1.2
J	Fritidsbolig	31.4	35.8	103.5	119.8	1.3	1.3
L	Seterhus	35.5	35.5	131.5	131.5	0.9	0.9
M	Seterhus	74.3	74.3	250.2	250.2	1.6	1.6
N	Seterhus (revet)	0.0	0.0	0.0	0.0	0.0	0.0
O	Seterhus	80.8	80.8	274.4	274.4	1.5	1.5
P	Seterhus	102.8	102.8	339.1	339.1	1.6	1.6
Q	Naust/Sjøbu	13.4	21.1	51.9	76.8	0.6	0.7
R	Fritidsbolig	12.4	21.1	49.1	77.9	0.6	0.8
S	Fritidsbolig	30.3	34.9	124.4	139.3	1.3	1.3
T	Fritidsbolig	8.7	15.5	37.9	60.7	0.5	0.5
U	Fritidsbolig	17.4	17.4	68.6	68.6	1.0	1.0
V	Seterhus	0.0	0.0	0.0	0.0	0.0	0.0
W	Garasje/Uthus	15.9	15.9	53.4	53.4	0.7	0.7
X	Fritidsbolig	18.1	18.1	66.4	66.4	0.6	0.6
Y	Fritidsbolig	0.0	0.0	0.0	0.0	0.0	0.0
Z	Fritidsbolig	5.2	9.8	24.3	39.6	0.4	0.4
AB	Naust/Sjøbu	0.0	5.3	0.0	20.4	0.0	0.4
AC	Naust/Sjøbu	2.1	4.3	11.0	18.4	0.3	0.4
AD	Ukjent	0.0	0.0	0.0	0.0	0.0	0.0
AE	Seterhus	0.0	2.4	0.0	8.7	0.0	0.4
AF	Seterhus	0.0	2.3	0.0	8.8	0.0	0.4
AG	Heggsetfoss Kraftstasjon	0.0	0.0	0.0	0.0	0.0	0.0
AH	Ukjent	0.0	0.0	0.0	0.0	0.0	0.0
AI	Jaktkoie	60.6	60.6	234.6	234.6	1.3	1.3
AJ	Fritidsbolig	14.6	14.6	52.7	52.7	0.6	0.6
Grense		8.0		30.0		0.5	

Som det fremgår av tabellene viser beregningene utført med begge turbintypene at 19 av de 23 nabobyggene som anses å ha skyggekastfølsomt bruk, forventes å bli eksponert for skyggekast over anbefalt grenseverdi på 8 timer med faktisk skyggekast per år. For teoretisk maksimalt skyggekast forventes 19 av disse byggene å bli eksponert for skyggekast over 30 timer per år, mens 17 av byggene forventes å få skyggekast over 30 minutter per dag. For 8 av de berørte byggene er det

kun de eksisterende turbinene som medfører skyggekast, mens fire av byggene (A, H, AE og AF) kun vil bli berørt av skyggekast fra de nye turbinene. For ett av byggene er skyggekastomfanget like under grenseverdiene med de eksisterende turbinene, mens planlagt utvidelse medfører skyggekastomfang over grenseverdiene. For 9 av de berørte skyggekastsensitive byggene er beregnet omfang av skyggekast fra Stokkfjellet I allerede over grenseverdiene, mens de planlagte turbinene i Stokkfjellet II vindkraftverk vil medføre en økning i dette omfanget.

Det påpekes at det kan bli endringer i turbintype og turbinplasseringer frem mot en eventuell utbygging av prosjektet som kan medføre endringer i skyggekastpåvirkning for nærliggende nabobygg.

Avbøtende tiltak vil gjennomføres for å få omfang av skyggekast ned på et akseptabelt nivå. Dette kan gjøres ved bruk av skyggekastsensorer som registrerer perioder med skyggekast, og som eventuelt kan stoppe turbiner i enkelte perioder ved behov. Individuelle vurderinger vil bli gjort for den enkelte bygning.

Det er for øvrig viktig å påpeke at flere av bygningene ligger i skogsterreng. Dette er ikke hensyntatt i beregningene, og kan bidra til å redusere omfanget av skyggekast betydelig avhengig av høyde på trær og nærhet til bygninger.

For ytterligere informasjon om skyggekastomfanget for de hensyntatte naboene, se vedlegg B.1 og B.3 (rapporter fra WindPRO).

3 Støy

3.1 Beregningsmetodikk

Støy fra vindturbiner oppstår hovedsakelig ved at turbinbladene skjærer gjennom luften. Hvor høy denne støyen er avhenger av turbinbladets hastighet, turbinbladets form og omfang av turbulens. I tillegg avgis det noe maskinstøy fra vindturbinenes gir, vifter og generatorer. Hvor høyt støynivå som oppleves i nærheten av en vindturbin avhenger, i tillegg til selve støynivået turbinen genererer, av faktorer som vindretning, vindhastighet, avstand fra turbinen, trykk- og temperaturforhold, vegetasjon og refleksjon fra bakken.

3.1.1 Retningslinje for beregning av støy

Støyberegningene for Stokkfjellet II vindkraftverk er utført i henhold til gjeldende retningslinje for behandling av støy i arealplanlegging (T-1442/2021) [3] fra Klima- og Miljødepartementet, og *Veileder til Miljøverndepartementets retningslinje for behandling av støy i arealplanlegging*, M-2061/2023 [4].

I henhold til retningslinjen og veilederen skal det ved beregning av støy fra vindturbiner utarbeides støysonekart som viser to støysoner, rød og gul sone, rundt turbinene.

Tabell 4 – Gul og rød støysone ved beregning av støy fra vindturbiner

Støykilde	**Støysone**	
	Gul sone	**Rød sone**
	Utendørs støynivå	
Vindturbiner	45 L_{den}	55 L_{den}

- Rød sone: Angir et område som ikke er egnet til støyfølsomme bruksformål.
- Gul sone: Vurderingssone.

I støysonekartene i denne rapporten er det benyttet en noe mer nyansert inndeling hvor støynivå mellom 40 dB og 70 dB er markert med ulike farger for hvert støyintervall på 5 dB.

Tiltakshaver forholder seg i utredningen til gjeldende retningslinje hvor det fremgår at støynivået ved bebyggelse med støyfølsomt bruk ikke skal overstige L_{den} = 45 dB.

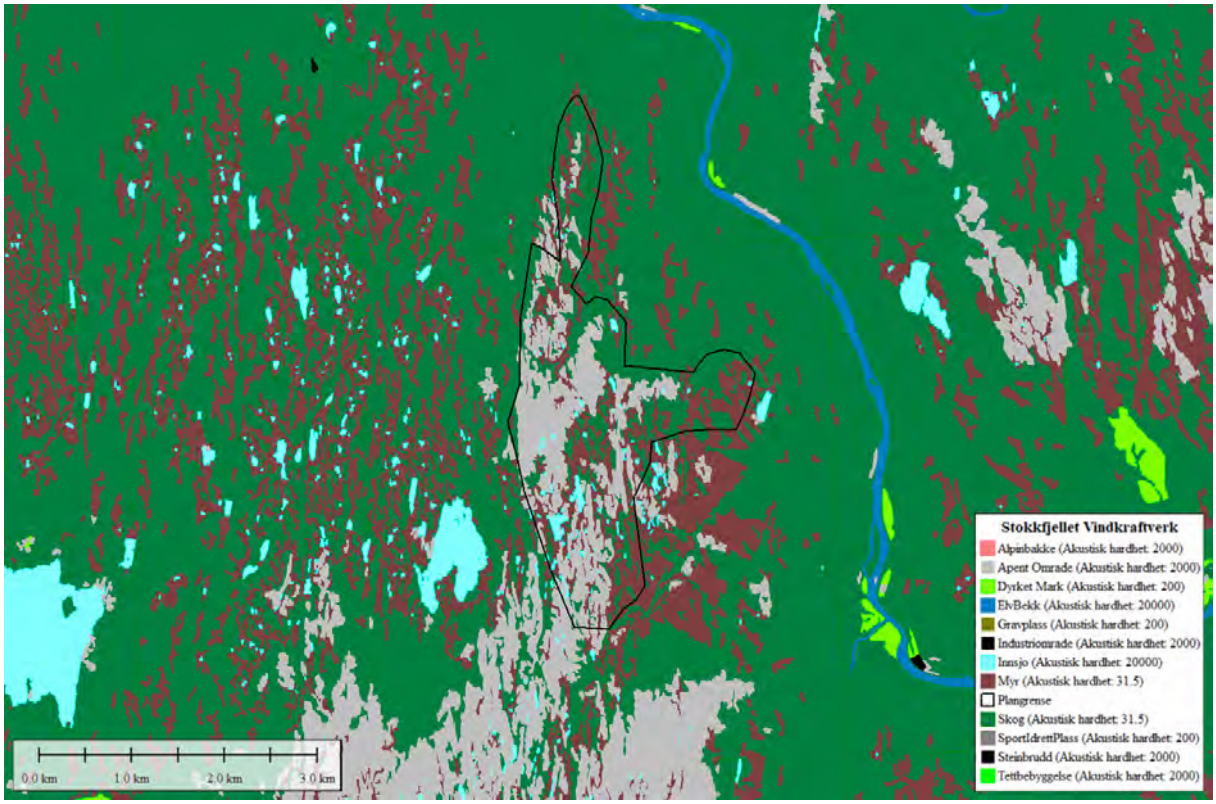
3.1.2 Metode og parametervalg

Støyberegningene er utført ved bruk av Nord2000-modulen i WindPRO (versjon 4.2.285) [5]. Dette er et detaljert og anerkjent verktøy for beregning av støy og er blant metodene angitt i retningslinjen som en godkjent metode for beregning av støy fra vindkraftverk. I henhold til retningslinjen er det utført verste scenario-beregninger av støynivået.

Følgende antagelser ble lagt til grunn i disse beregningene:

- Maksimalt støynivå for aktuell turbin (svarer normalt til støynivået ved 8 m/s i 10 m høyde)
- Vindhastighet justert til navhøyde ved bruk av IEC skjærprofil (z0 = 0.05m).
- Medvind fra alle retninger.
- 12 sektors retningsfordeling.
- DTM høydedata fra Statens Kartverk med 1m oppløsning
- Ruhetsdata fra N50 Arealdekke
- Beregningshøyde er satt til 4.0 m over terreng.
- 8760 driftstimer per år (100 %)
- Stabilitetsforhold: Natt og klarvær
- Klimaparametere:
    - Luftfuktighet: 70 %
    - Temperatur: 3 grader Celsius 100 m over bakken

Terrengets akustiske hardhet er satt basert på ruhetsdata fra N50 datasettet arealdekke fra Statens kartverk. Verdiene som er benyttet er presentert i Figur 6 under.



Figur 6 – Oversikt over verdier benyttet for terrengets akustiske hardhet

Som det fremgår av Figur 3 består prosjektområdet i stor grad av åpne områder med bare fjellflater. Disse områdene er tilegnet en akustisk hardhet på 2000, som anses som et konservativt valg. For øvrig er det en god del skog i området som er tilegnet en akustisk hardhet på 31.5.

3.2 Turbindata

Som beskrevet innledningsvis er det utført støyberegninger for et utbyggingsalternativ med 9 vindturbiner. Det er gjort beregninger for to forskjellige turbintyper, Vestas V136-4.5MW med 112 m navhøyde og Nordex N149-5.9MW med 120 m navhøyde. De planlagte vindturbinene er en mulig utvidelse av eksisterende Stokkfjellet vindkraftanlegg som består av 21 turbiner av typen Vestas V136-4.2MW med 112 m navhøyde, og støyberegningene inkluderer samtlige 30 turbiner.

Støydataene som er benyttet for Vestas V136-4.2/4.5MW-turbinene er offentlig tilgjengelige data, hentet fra WindPRO. For Nordex N149-5.9MW-turbinene er støydata levert av oppdragsgiver. Kildestøy for hver av turbintypene, inkludert de eksisterende turbinene, er presentert i Tabell 5 under. Den oppgitte kildestøyen er forutsatt bruk av blader med «serrated trailing edges» (STE).

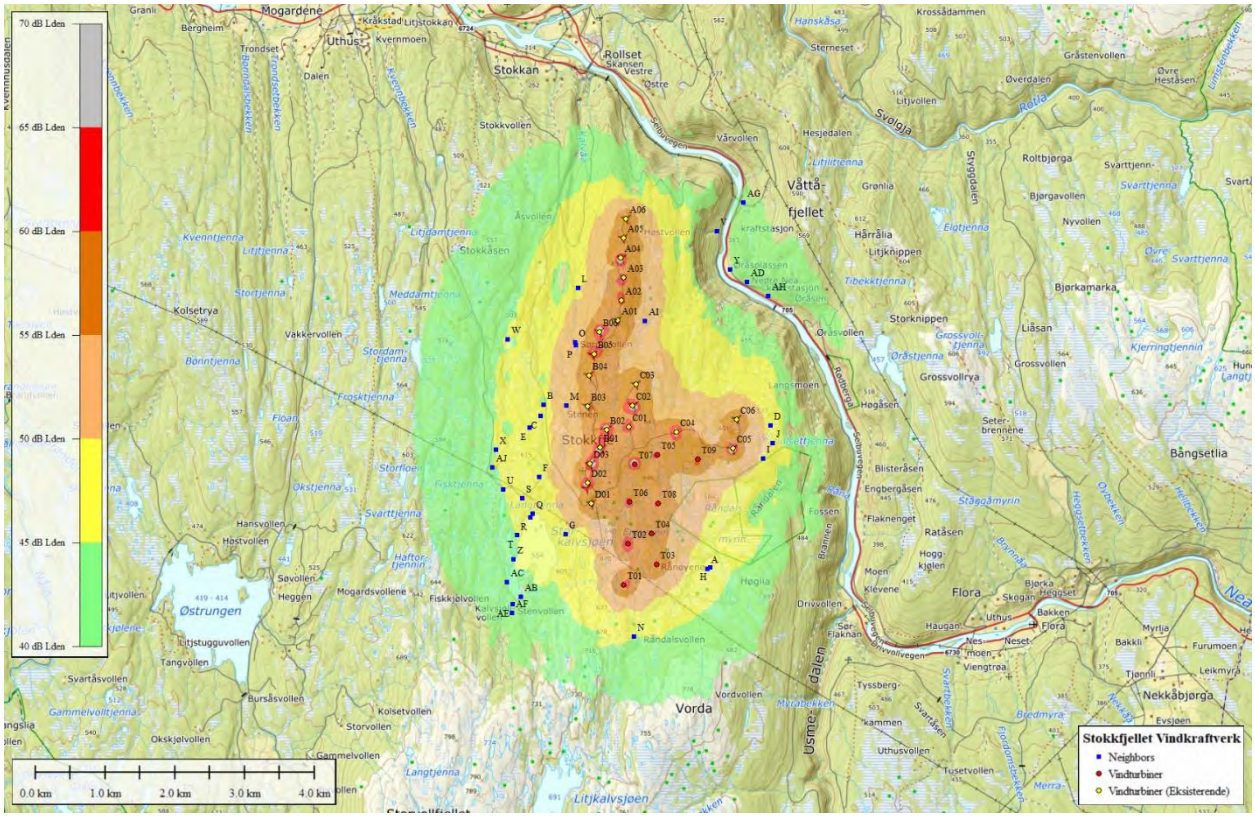
Tabell 5 – Oversikt over nøkkeltall for turbintyper benyttet i analysen

Turbintype	Rotordiameter (m)	Navhøyde (m)	Effekt (MW)	Kildestøy [dB]
Vestas V136-4.2	136	112	4.2	103.9
Vestas V136-4.5	136	112	4.5	103.9
Nordex N149-5.9	149	120	5.9	105.6

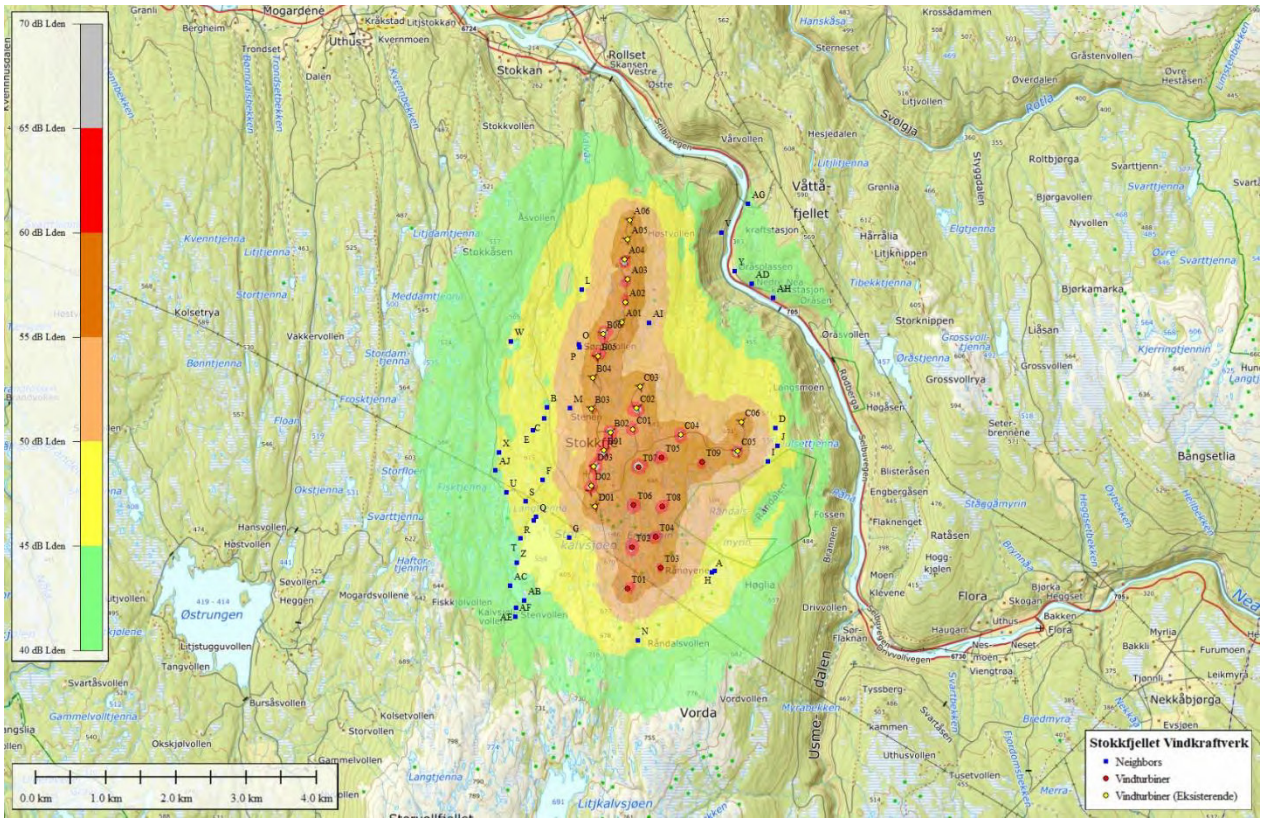
Totalt 34 bygg er hensyntatt i beregningene, hvorav 19 av disse anses som støyfølsom bebyggelse. En oversikt over turbinplassering og nærliggende boliger er presentert i oversiktskartet i Figur 1.

3.3 Resultater

Støysonekart basert på støynivå for verste scenario (medvind fra alle retninger) for samtlige eksisterende og planlagte vindturbiner (totalt 30 vindturbiner) er presentert i Figur 7 og Figur 8 under, for henholdsvis alternativ 1 (V136-4.5MW) og alternativ 2 (N149-5.9MW).



Figur 7 – Støysonekart basert på beregnet støynivå for verste scenario (medvind fra alle retninger), Alt. 1



Figur 8 – Støysonekart basert på beregnet støynivå for verste scenario (medvind fra alle retninger), Alt. 2

En detaljert oversikt over beregnet verste scenario støyverdier er presentert i Tabell 6. Tabellen inkluderer både støyberegninger for eksisterende vindturbiner alene og for de to aktuelle utbyggingsalternativene, inkludert eksisterende turbiner. Bygg som ikke anses som støysensitive er markert i grått, mens beregnede verdier som overstiger støygrensen på 45 dB er markert med gult.

Tabell 6 – Beregnede støyverdier for hensyntatte nabobygg

Bygg	Type	Beregnet støynivå, L_{den} [dB] (Worst Case)		
		Stokkfjellet I	Stokkfjellet I+II	
		V136-4.2MW-112mHH	V136-4.5MW-112mHH	N149-5.9MW-120mHH
A	Fritidsbolig	41	47	48
B	Fritidsbolig (revet)	48	48	48
C	Fritidsbolig	49	49	49
D	Fritidsbolig	48	49	49
E	Fritidsbolig	47	48	48
F	Fritidsbolig	48	49	49
G	Garasje/Uthus	46	48	48
H	Seterhus	41	47	48
I	Fritidsbolig	48	49	49
J	Fritidsbolig	48	49	49
L	Seterhus	50	50	50
M	Seterhus	52	52	52
N	Seterhus (revet)	38	45	46
O	Seterhus	53	53	53
P	Seterhus	54	54	54
Q	Naust/Sjøbu	45	47	47
R	Fritidsbolig	45	47	47
S	Fritidsbolig	45	46	47
T	Fritidsbolig	43	45	45
U	Fritidsbolig	44	45	45
V	Seterhus	32	32	32
W	Garasje/Uthus	45	45	45
X	Fritidsbolig	44	45	45
Y	Fritidsbolig	38	38	38
Z	Fritidsbolig	42	44	45
AB	Naust/Sjøbu	39	42	43
AC	Naust/Sjøbu	40	43	44
AD	Ukjent	41	41	41
AE	Seterhus	39	42	43
AF	Seterhus	38	41	42
AG	Heggsetfoss Kraftstasjon	40	40	40
AH	Ukjent	38	38	38
AI	Jaktkoie	53	53	53
AJ	Fritidsbolig	44	45	45

Beregningene viser at 21 av de 23 støysensitive nabobyggene vil eksponeres for støyverdier over 40 dB ved verste scenario-beregning av støynivået. Av disse vil 14 bygg eksponeres for støyverdier over grenseverdien på 45 dB (gul vurderingssone). 3 av byggene vil eksponeres for støyverdier over 50 dB (rød sone).

For enkelte av byggene er det avvik på 1 dB mellom de to ulike utbyggingsalternativene. For de fleste av byggene forventes det imidlertid kun minimale forskjeller i støypåvirkning for alternativ 1 og 2. Dette skyldes hovedsakelig at støybidraget fra de eksisterende turbiner i seg selv er såpass høyt.

Det kan bli endringer i turbintype og turbinplasseringer frem mot en eventuell utbygging av prosjektet som kan medføre endringer i støypåvirkning for nærliggende nabobygg. Overskridelser av støygrensen vil bli løst i form av avbøtende tiltak.

For ytterligere informasjon, se vedlegg C.1 og C.3 (Nord2000-støyrapporter fra WindPRO).

4 Referanser

[1] Skyggekast fra vindkraftverk. Veileder for beregning av skyggekast og presentasjon av NVEs forvaltningspraksis, NVE, 2014

[2] WindPRO Manual. SHADOW-Module, EMD International A/S
http://www.emd.dk/windpro/windpro-modules/environment-modules/shadow/

[3] Retningslinje for behandling av støy i arealplanlegging (T1442/2021), Klima- og miljødepartementet, 11.06.2021.
https://www.regjeringen.no/contentassets/7d2793f6d8254e4b9cc2c4f33592657f/t-1442-2021.pdf

[4] Veileder om behandling av støy i arealplanlegging, M-2061, Miljødirektoratet,
https://www.miljodirektoratet.no/ansvarsomrader/forurensning/stoy/for-myndigheter/veileder-om-behandling-av-stoy-i-arealplanlegging/

[5] WindPRO Manual. Nord2000-Module, EMD International A/S
https://www.emd-international.com/windpro/windpro-modules/environment-modules/nord2000/

Vedlegg A: Turbin- og naboposisjoner

Tabell 7 – Turbinposisjoner – Stokkfjellet vindkraftverk

Turbinnr.	Koordinater (UTM sone 32, ETRS89)		Høyde [m.o.h.]
	X	Y	Z
A01	610566	7004236	635.0
A02	610622	7004525	639.0
A03	610653	7004850	632.9
A04	610609	7005128	623.2
A05	610657	7005417	613.7
A06	610688	7005687	601.8
B01	610316	7002427	700.7
B02	610414	7002677	676.1
B03	610136	7003016	660.0
B04	610159	7003454	631.0
B05	610229	7003758	626.7
B06	610311	7004076	630.7
C01	610724	7002717	671.8
C02	610775	7003021	654.0
C03	610830	7003322	642.0
C04	611405	7002649	639.0
C05	612213	7002408	596.0
C06	612270	7002827	590.3
D01	610189	7001628	666.2
D02	610137	7001920	689.7
D03	610172	7002188	698.3

Tabell 8 – Turbinposisjoner – Stokkfjellet II vindkraftverk

Turbinnr.	Koordinater (UTM sone 32, ETRS89)		Høyde [m.o.h.]
	X	Y	Z
T01	610653	7000458	668.3
T02	610715	7001046	657.6
T03	611129	7000753	629.5
T04	611056	7001193	628.6
T05	611131	7002323	637.6
T06	610737	7001642	647.7
T07	610814	7002183	647.2
T08	611141	7001623	619.3
T09	611718	7002259	594.0

Tabell 9 – Naboposisjoner

Turbinnr.	Koordinater (UTM sone 32, ETRS89)		Høyde [m.o.h.]
	X	Y	Z
A	611851	7000691	571.4
B	609506	7003032	531.5
C	609466	7002880	554.9
D	612750	7002736	564.5
E	609306	7002706	564.0
F	609447	7001999	609.9
G	609824	7001181	595.5
H	611890	7000714	570.0
I	612646	7002271	561.5
J	612789	7002482	566.4
L	610005	7004698	534.0
M	609836	7003019	595.9
N	610802	6999724	619.7
O	609956	7003926	555.8
P	609969	7003879	560.7
Q	609354	7001476	554.2
R	609318	7001424	555.9
S	609199	7001699	580.2
T	609127	7001169	559.9
U	608931	7001821	562.7
V	611983	7005516	222.4
W	608992	7003966	486.4
X	608824	7002397	567.2
Y	612174	7004964	215.5
Z	609075	7000830	560.3
AB	609178	7000287	554.3
AC	608986	7000501	556.9
AD	612414	7004782	222.4
AE	609068	7000187	573.9
AF	609060	7000065	576.0
AG	612361	7005924	212.8
AH	612720	7004584	200.8
AI	610960	7004225	553.1
AJ	608770	7002143	565.7

Project:
Stokkfjellet

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data / data@meventus.com
Calculated:
17.11.2023 16:12/3.6.377

SHADOW - Main Result

Calculation: 202311_L01D_9xV136_4.5MW_112mHH_StokkfjelletII_wExisting

Assumptions for shadow calculations

Maximum distance for influence
Calculate only when more than 20 % of sun is covered by the blade
Please look in WTG table

Minimum sun height over horizon for influence	3 °
Day step for calculation	1 days
Time step for calculation	1 minutes

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

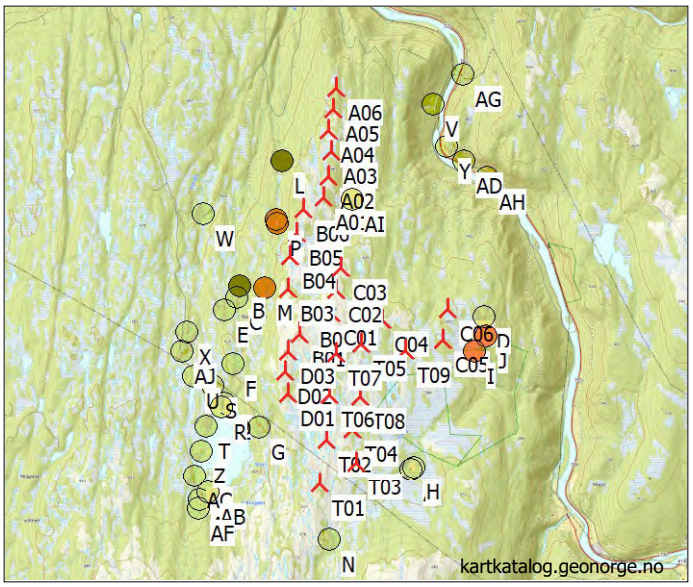
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
120	62	61	138	1,065	1,629	713	293	381	880	1,182	476	7,000

Yearly aggregation of real case reduction
A ZVI (Zones of Visual Influence) calculation is performed before flicker calculation so non visible WTG do not contribute to calculated flicker values. A WTG will be visible if it is visible from any part of the receiver window. The ZVI calculation is based on the following assumptions:
Height contours used: Elevation Grid Data Object: Stokkfjellet_DTM
Receptor grid resolution: 1.0 m
Topographic shadow included in calculation

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



Scale 1:100,000

New WTG Shadow receptor

WTGs

	Easting	Northing	Z	Row data/Description	WTG type Valid	Manufact.	Type-generator	Power, rated	Rotor diameter	Hub height	Shadow data Calculation distance	RPM
			[m]					[kW]	[m]	[m]	[m]	[RPM]
A01	610,565.9	7,004,236.0	635.6	VESTAS V136-4.2-Tronder 4200 136.0 !...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	1,802	10.4
A02	610,621.9	7,004,524.9	639.0	VESTAS V136-4.2-Tronder 4200 136.0 !...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	1,802	10.4
A03	610,653.2	7,004,850.0	632.9	VESTAS V136-4.2-Tronder 4200 136.0 !...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	1,802	10.4
A04	610,608.6	7,005,128.0	623.2	VESTAS V136-4.2-Tronder 4200 136.0 !...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	1,802	10.4
A05	610,656.8	7,005,416.9	613.5	VESTAS V136-4.2-Tronder 4200 136.0 !...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	1,802	10.4
A06	610,688.0	7,005,687.0	601.6	VESTAS V136-4.2-Tronder 4200 136.0 !...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	1,802	10.4
B01	610,316.0	7,002,427.1	700.8	VESTAS V136-4.2-Tronder 4200 136.0 !...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	1,802	10.4
B02	610,414.0	7,002,677.0	676.4	VESTAS V136-4.2-Tronder 4200 136.0 !...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	1,802	10.4
B03	610,136.4	7,003,015.9	660.5	VESTAS V136-4.2-Tronder 4200 136.0 !...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	1,802	10.4
B04	610,158.7	7,003,453.6	630.8	VESTAS V136-4.2-Tronder 4200 136.0 !...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	1,802	10.4
B05	610,228.9	7,003,758.1	626.4	VESTAS V136-4.2-Tronder 4200 136.0 !...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	1,802	10.4
B06	610,310.7	7,004,076.1	630.7	VESTAS V136-4.2-Tronder 4200 136.0 !...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	1,802	10.4
C01	610,724.0	7,002,717.0	671.6	VESTAS V136-4.2-Tronder 4200 136.0 !...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	1,802	10.4
C02	610,775.0	7,003,021.0	654.3	VESTAS V136-4.2-Tronder 4200 136.0 !...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	1,802	10.4
C03	610,830.0	7,003,321.9	642.0	VESTAS V136-4.2-Tronder 4200 136.0 !...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	1,802	10.4
C04	611,405.0	7,002,649.0	639.0	VESTAS V136-4.2-Tronder 4200 136.0 !...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	1,802	10.4
C05	612,213.0	7,002,408.0	596.5	VESTAS V136-4.2-Tronder 4200 136.0 !...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	1,802	10.4
C06	612,270.1	7,002,826.6	590.4	VESTAS V136-4.2-Tronder 4200 136.0 !...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	1,802	10.4
D01	610,188.5	7,001,628.1	666.1	VESTAS V136-4.2-Tronder 4200 136.0 !...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	1,802	10.4
D02	610,137.2	7,001,919.8	689.5	VESTAS V136-4.2-Tronder 4200 136.0 !...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	1,802	10.4
D03	610,171.9	7,002,188.0	698.6	VESTAS V136-4.2-Tronder 4200 136.0 !...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	1,802	10.4
T01	610,653.0	7,000,458.0	668.3	VESTAS V136-4.5 4500 136.0 !O! hub: ...	Yes	VESTAS	V136-4.5-4,500	4,500	136.0	112.0	1,802	10.4
T02	610,715.0	7,001,046.0	657.6	VESTAS V136-4.5 4500 136.0 !O! hub: ...	Yes	VESTAS	V136-4.5-4,500	4,500	136.0	112.0	1,802	10.4
T03	611,129.0	7,000,753.0	629.5	VESTAS V136-4.5 4500 136.0 !O! hub: ...	Yes	VESTAS	V136-4.5-4,500	4,500	136.0	112.0	1,802	10.4
T04	611,056.0	7,001,193.0	628.6	VESTAS V136-4.5 4500 136.0 !O! hub: ...	Yes	VESTAS	V136-4.5-4,500	4,500	136.0	112.0	1,802	10.4
T05	611,131.0	7,002,323.0	637.6	VESTAS V136-4.5 4500 136.0 !O! hub: ...	Yes	VESTAS	V136-4.5-4,500	4,500	136.0	112.0	1,802	10.4
T06	610,737.0	7,001,642.0	647.7	VESTAS V136-4.5 4500 136.0 !O! hub: ...	Yes	VESTAS	V136-4.5-4,500	4,500	136.0	112.0	1,802	10.4
T07	610,814.0	7,002,183.0	647.2	VESTAS V136-4.5 4500 136.0 !O! hub: ...	Yes	VESTAS	V136-4.5-4,500	4,500	136.0	112.0	1,802	10.4
T08	611,141.0	7,001,623.0	619.3	VESTAS V136-4.5 4500 136.0 !O! hub: ...	Yes	VESTAS	V136-4.5-4,500	4,500	136.0	112.0	1,802	10.4
T09	611,718.0	7,002,259.0	594.0	VESTAS V136-4.5 4500 136.0 !O! hub: ...	Yes	VESTAS	V136-4.5-4,500	4,500	136.0	112.0	1,802	10.4

Project:
Stokkfjellet

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Calculated:
17.11.2023 16:12/3.6.377

SHADOW - Main Result

Calculation: 202311_L01D_9xV136_4.5MW_112mHH_StokkfjelletII_wExisting

Shadow receptor-Input

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
A	611,850.6	7,000,690.5	571.4	2.0	2.0	2.0	90.0	"Green house mode"	4.0
B	609,505.6	7,003,031.5	531.5	2.0	2.0	2.0	90.0	"Green house mode"	4.0
C	609,465.6	7,002,879.5	554.9	2.0	2.0	2.0	90.0	"Green house mode"	4.0
D	612,749.6	7,002,735.5	564.5	2.0	2.0	2.0	90.0	"Green house mode"	4.0
E	609,305.6	7,002,705.5	564.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
F	609,446.6	7,001,998.5	609.9	2.0	2.0	2.0	90.0	"Green house mode"	4.0
G	609,823.6	7,001,180.5	595.5	2.0	2.0	2.0	90.0	"Green house mode"	4.0
H	611,889.6	7,000,713.5	570.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
I	612,645.6	7,002,270.5	561.5	2.0	2.0	2.0	90.0	"Green house mode"	4.0
J	612,788.6	7,002,481.5	566.4	2.0	2.0	2.0	90.0	"Green house mode"	4.0
L	610,004.6	7,004,697.5	534.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
M	609,835.6	7,003,018.5	595.9	2.0	2.0	2.0	90.0	"Green house mode"	4.0
N	610,801.6	6,999,723.5	619.7	2.0	2.0	2.0	90.0	"Green house mode"	4.0
O	609,955.6	7,003,925.5	555.8	2.0	2.0	2.0	90.0	"Green house mode"	4.0
P	609,968.6	7,003,878.5	560.7	2.0	2.0	2.0	90.0	"Green house mode"	4.0
Q	609,353.6	7,001,475.5	554.2	2.0	2.0	2.0	90.0	"Green house mode"	4.0
R	609,317.6	7,001,423.5	555.9	2.0	2.0	2.0	90.0	"Green house mode"	4.0
S	609,198.6	7,001,698.5	580.2	2.0	2.0	2.0	90.0	"Green house mode"	4.0
T	609,126.6	7,001,168.5	559.9	2.0	2.0	2.0	90.0	"Green house mode"	4.0
U	608,930.6	7,001,820.5	562.7	2.0	2.0	2.0	90.0	"Green house mode"	4.0
V	611,982.6	7,005,515.5	222.4	2.0	2.0	2.0	90.0	"Green house mode"	4.0
W	608,991.6	7,003,965.5	486.4	2.0	2.0	2.0	90.0	"Green house mode"	4.0
X	608,823.6	7,002,396.5	567.2	2.0	2.0	2.0	90.0	"Green house mode"	4.0
Y	612,173.6	7,004,963.5	215.5	2.0	2.0	2.0	90.0	"Green house mode"	4.0
Z	609,074.6	7,000,829.5	560.3	2.0	2.0	2.0	90.0	"Green house mode"	4.0
AB	609,177.6	7,000,286.5	554.3	2.0	2.0	2.0	90.0	"Green house mode"	4.0
AC	608,985.6	7,000,500.5	556.9	2.0	2.0	2.0	90.0	"Green house mode"	4.0
AD	612,413.6	7,004,781.5	222.4	2.0	2.0	2.0	90.0	"Green house mode"	4.0
AE	609,067.6	7,000,186.5	573.9	2.0	2.0	2.0	90.0	"Green house mode"	4.0
AF	609,059.6	7,000,064.5	576.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
AG	612,360.6	7,005,923.5	212.8	2.0	2.0	2.0	90.0	"Green house mode"	4.0
AH	612,719.6	7,004,583.5	200.8	2.0	2.0	2.0	90.0	"Green house mode"	4.0
AI	610,960.0	7,004,225.0	553.1	2.0	2.0	2.0	90.0	"Green house mode"	4.0
AJ	608,770.0	7,002,143.0	565.7	2.0	2.0	2.0	90.0	"Green house mode"	4.0

Calculation Results

Shadow receptor

No.	Shadow, worst case: Shadow hours per year [h/year]	Shadow, worst case: Shadow days per year [days/year]	Shadow, worst case: Max shadow hours per day [h/day]	Shadow, expected values: Shadow hours per year [h/year]
A	115:53	171	1:09	36:18
B	122:36	255	0:49	36:54
C	168:18	283	0:59	48:00
D	185:52	210	1:23	53:41
E	155:01	271	1:03	42:11
F	222:06	249	2:01	59:11
G	41:33	139	0:35	12:24
H	116:01	176	1:05	36:23
I	135:51	189	1:12	42:45
J	118:19	161	1:17	35:25
L	131:27	246	0:53	35:27
M	250:13	281	1:37	74:15
N	0:00	0	0:00	0:00
O	274:22	292	1:28	80:50
P	339:06	283	1:37	102:45
Q	70:57	193	0:38	19:20
R	71:08	196	0:43	19:04
S	136:31	197	1:18	34:02
T	56:52	178	0:29	14:23
U	68:33	167	0:58	17:26
V	0:00	0	0:00	0:00
W	53:22	149	0:43	15:56

To be continued on next page...

Project:
Stokkfjellet

Licensed user:
Meventus AS
Konsgård Allé 59
NO-4632 Kristiansand
+47 3860 7115
data / data@meventus.com
Calculated:
17.11.2023 16:12/3.6.377

SHADOW - Main Result

Calculation: 202311_L01D_9xV136_4.5MW_112mHH_StokkfjelletII_wExisting

...continued from previous page

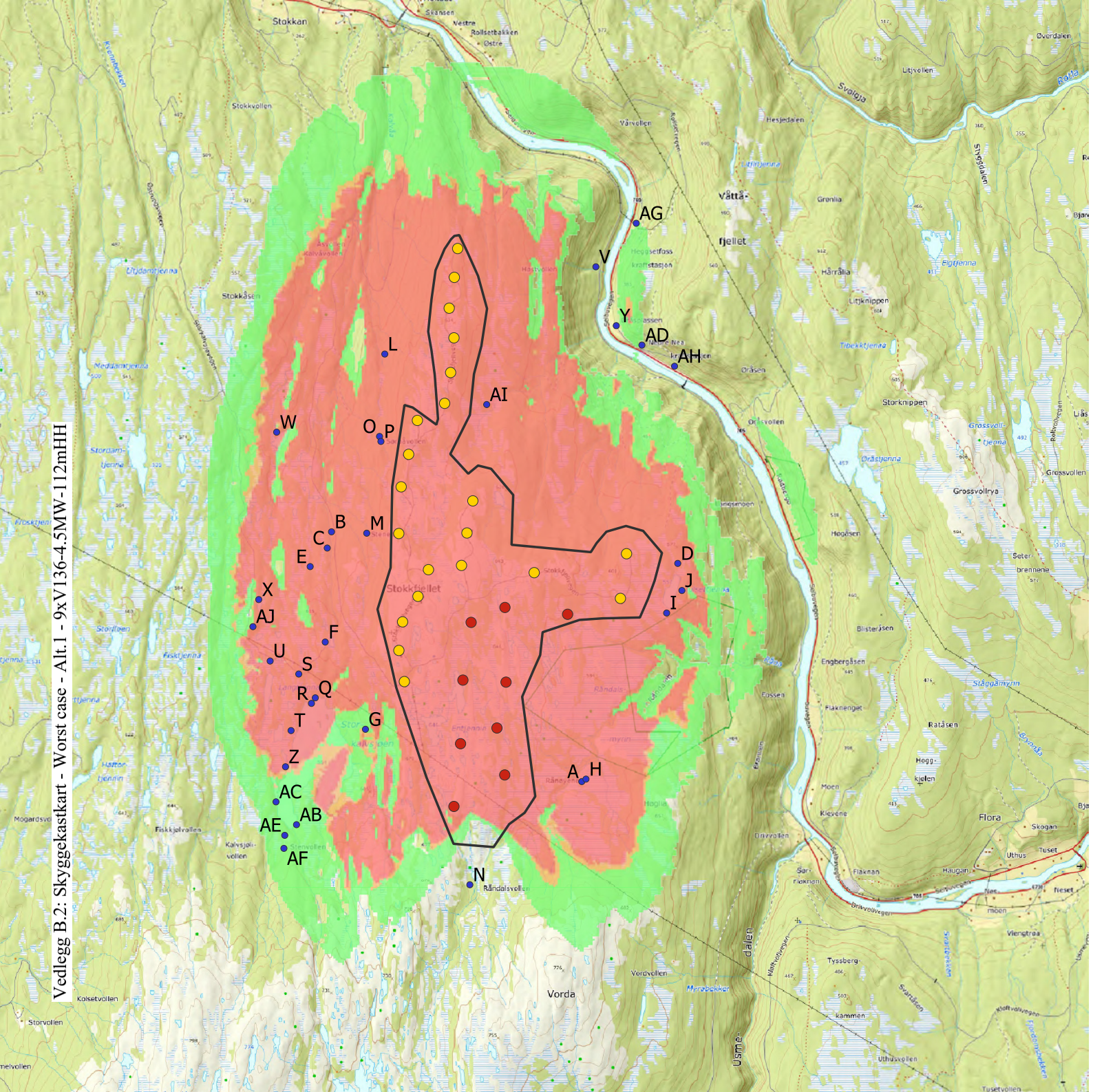
No.	Shadow, worst case Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow, expected values Shadow hours per year [h/year]
X	66:24	205	0:34	18:05
Y	0:00	0	0:00	0:00
Z	37:00	116	0:25	8:58
AB	16:54	64	0:22	4:25
AC	17:05	65	0:20	3:54
AD	0:00	0	0:00	0:00
AE	7:12	28	0:20	1:59
AF	7:13	28	0:20	1:54
AG	0:00	0	0:00	0:00
AH	0:00	0	0:00	0:00
AI	234:36	305	1:18	60:34
AJ	52:44	162	0:35	14:34

Total amount of flickering on the shadow receptors caused by each WTG

No.	Name	Worst case [h/year]	Expected [h/year]
A01	VESTAS V136-4.2-Tronder 4200 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (449)	142:53	41:50
A02	VESTAS V136-4.2-Tronder 4200 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (450)	16:22	4:44
A03	VESTAS V136-4.2-Tronder 4200 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (451)	49:21	13:10
A04	VESTAS V136-4.2-Tronder 4200 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (452)	0:00	0:00
A05	VESTAS V136-4.2-Tronder 4200 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (453)	0:00	0:00
A06	VESTAS V136-4.2-Tronder 4200 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (454)	0:00	0:00
B01	VESTAS V136-4.2-Tronder 4200 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (455)	172:20	47:04
B02	VESTAS V136-4.2-Tronder 4200 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (456)	161:38	43:02
B03	VESTAS V136-4.2-Tronder 4200 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (457)	364:16	98:53
B04	VESTAS V136-4.2-Tronder 4200 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (458)	143:29	35:23
B05	VESTAS V136-4.2-Tronder 4200 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (459)	298:40	93:12
B06	VESTAS V136-4.2-Tronder 4200 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (460)	86:25	23:35
C01	VESTAS V136-4.2-Tronder 4200 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (461)	44:53	11:49
C02	VESTAS V136-4.2-Tronder 4200 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (462)	43:28	10:23
C03	VESTAS V136-4.2-Tronder 4200 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (463)	39:48	8:48
C04	VESTAS V136-4.2-Tronder 4200 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (464)	42:36	12:37
C05	VESTAS V136-4.2-Tronder 4200 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (465)	188:22	54:47
C06	VESTAS V136-4.2-Tronder 4200 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (466)	160:06	50:56
D01	VESTAS V136-4.2-Tronder 4200 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (467)	195:51	53:10
D02	VESTAS V136-4.2-Tronder 4200 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (468)	180:29	49:53
D03	VESTAS V136-4.2-Tronder 4200 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (469)	189:14	51:50
T01	VESTAS V136-4.5 4500 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (795)	72:45	21:36
T02	VESTAS V136-4.5 4500 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (796)	83:17	25:33
T03	VESTAS V136-4.5 4500 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (797)	48:10	14:45
T04	VESTAS V136-4.5 4500 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (798)	52:22	17:02
T05	VESTAS V136-4.5 4500 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (799)	19:43	5:39
T06	VESTAS V136-4.5 4500 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (800)	53:49	15:44
T07	VESTAS V136-4.5 4500 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (801)	8:43	2:21
T08	VESTAS V136-4.5 4500 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (802)	6:10	1:30
T09	VESTAS V136-4.5 4500 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (803)	47:19	13:01

Total times in Receptor wise and WTG wise tables can differ, as a WTG can lead to flicker at 2 or more receptors simultaneously and/or receptors may receive flicker from 2 or more WTGs simultaneously.

The calculation of the total expected values for a given receptor assumes a weighted average directional reduction for all WTGs contributing to shadow flicker within the same day. In the case where shadow flicker from different WTGs is not concurrent within the day, the total expected time at a given receptor may deviate marginally from the individual flicker time caused by each turbine separately.



Vedlegg B.2: Skyggekastkart - Worst case - Alt.1 - 9xV136-4.5MW-112mHH

Stokkfjellet II Wind Farm

- Wind turbines (Planned)
- Wind turbines (Existing)
- Neighbors
- Planning area

	Hours/year
	0-30
	30-35
	>35

Calculation settings

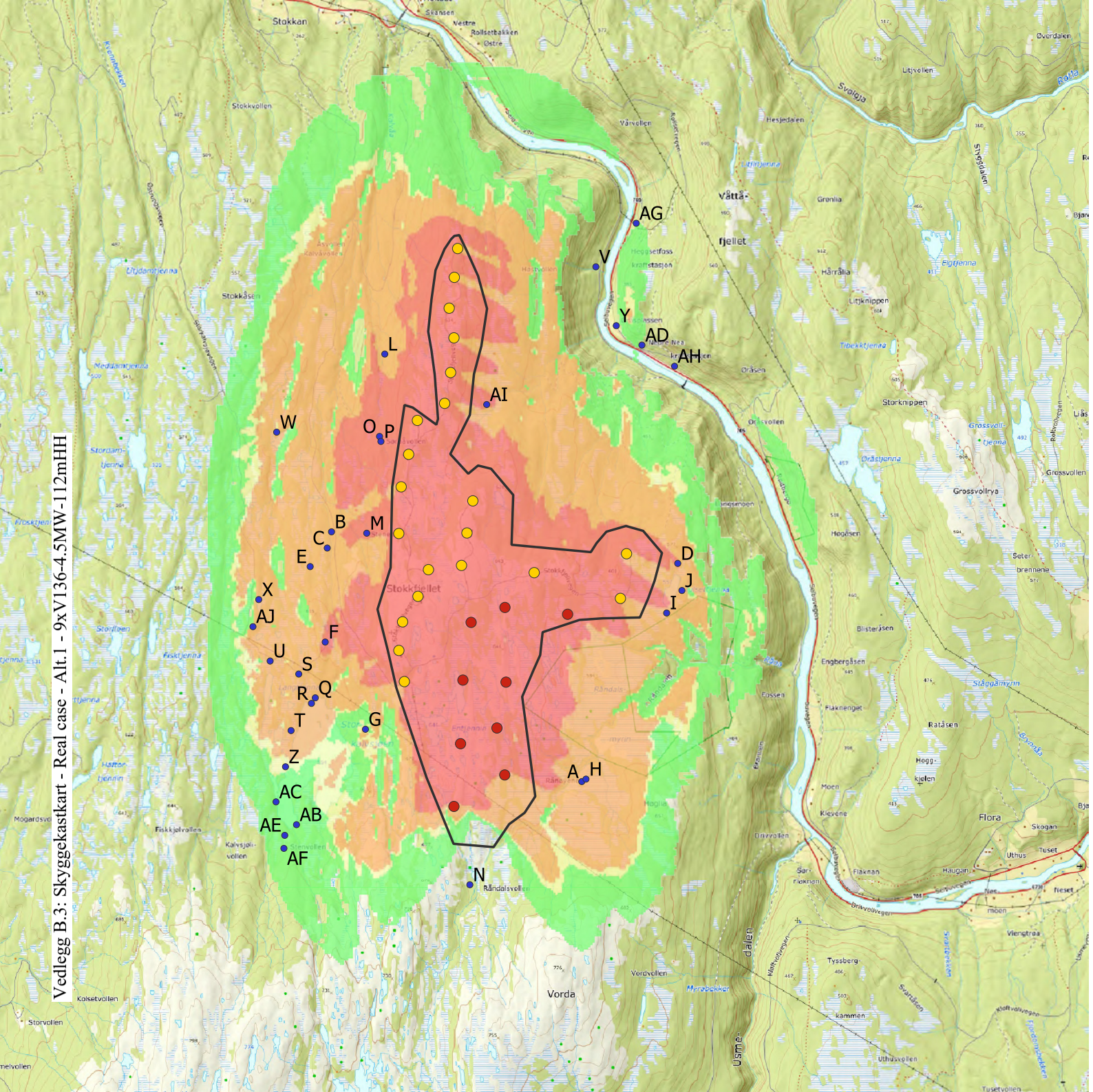
Software:	WindPRO v3.6.377
Model:	SHADOW
Calculation:	Worst case
Forest considered:	No

Layout Information

Layout name:	L01d
Number of turbines:	9
Turbine type:	V136-4.5MW
Rotor diameter:	136
Rated Power:	4.5 MW
Hub height:	112 m
Total height:	180 m

Performed by:	Meventus AS
Date:	17.11.2023

Meventus
Your partner in wind



Vedlegg B.3: Skyggekastkart - Real case - Alt.1 - 9xV136-4.5MW-112mHH

Stokkfjellet II Wind Farm

- Wind turbines (Planned)
- Wind turbines (Existing)
- Neighbors
- Planning area

	Hours/year
	0 - 8
	8 - 10
	10 - 50
	> 50

Calculation settings

Software:	WindPRO v3.6.377
Model:	SHADOW
Calculation:	Real case based on statistics
Forest considered:	No

Layout Information

Layout name:	L01d
Number of turbines:	9
Turbine type:	V136-4.5MW
Rotor diameter:	136
Rated Power:	4.5 MW
Hub height:	112 m
Total height:	180 m

Performed by:	Meventus AS
Date:	17.11.2023

Meventus
Your partner in wind

Project:
Stokkfjellet

Licensed user:
Meventus AS
Konsgård Allé 59
NO-4632 Kristiansand
+47 3860 7115
data / data@meventus.com

Calculated:
13.02.2026 10:19/4.2.285

SHADOW - Main Result

Calculation: 202602_21xV136_4.2MW_112mHH+9xN149_5.9MW_120mHH (Stokkfjellet I + II)

Assumptions for shadow calculations

Maximum distance for influence
Calculate only when more than 20 % of sun is covered by the blade
Please look in WTG table

Minimum sun height over horizon for influence	3 °
Day step for calculation	1 days
Time step for calculation	1 minutes

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

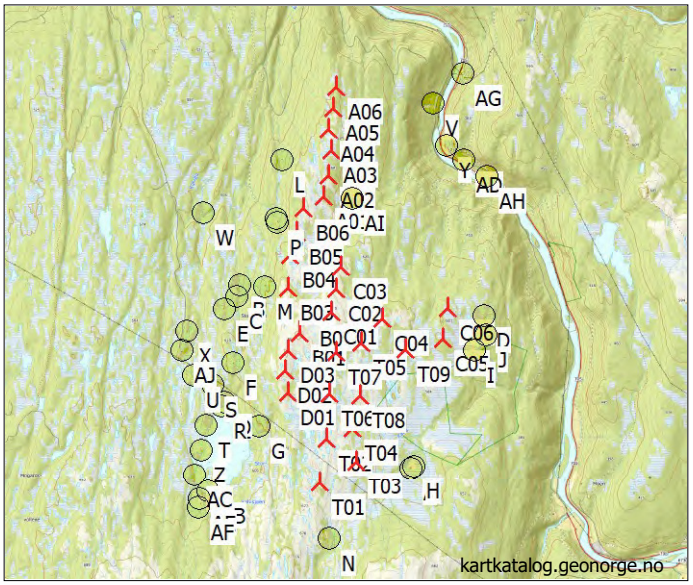
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
120	62	61	138	1,065	1,629	713	293	381	880	1,182	476	7,000

Monthly aggregation of real case reduction
A ZVI (Zones of Visual Influence) calculation is performed before flicker calculation so non visible WTG do not contribute to calculated flicker values. A WTG will be visible if it is visible from any part of the receiver window. The ZVI calculation is based on the following assumptions:
DHM: Elevation Grid Data Object: Stokkfjellet_DTM
Receptor grid resolution: 1.0 m
Topographic shadow included in calculation

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



Scale 1:100,000

New WTG Shadow receptor

WTGs

	Easting	Northing	Z	Row data/Description	WTG type Valid	Manufact.	Type-generator	Power, rated	Rotor diameter	Hub height	Shadow data Calculation distance	RPM
			[m]					[kW]	[m]	[m]	[m]	[RPM]
A01	610,565.9	7,004,236.0	635.6	VESTAS V136-4.2-Tronder 4200 136.0 !...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	1,802	10.4
A02	610,621.9	7,004,524.9	639.0	VESTAS V136-4.2-Tronder 4200 136.0 !...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	1,802	10.4
A03	610,653.2	7,004,850.0	632.9	VESTAS V136-4.2-Tronder 4200 136.0 !...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	1,802	10.4
A04	610,608.6	7,005,128.0	623.2	VESTAS V136-4.2-Tronder 4200 136.0 !...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	1,802	10.4
A05	610,656.8	7,005,416.9	613.5	VESTAS V136-4.2-Tronder 4200 136.0 !...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	1,802	10.4
A06	610,688.0	7,005,687.0	601.6	VESTAS V136-4.2-Tronder 4200 136.0 !...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	1,802	10.4
B01	610,316.0	7,002,427.1	700.8	VESTAS V136-4.2-Tronder 4200 136.0 !...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	1,802	10.4
B02	610,414.0	7,002,677.0	676.4	VESTAS V136-4.2-Tronder 4200 136.0 !...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	1,802	10.4
B03	610,136.4	7,003,015.9	660.5	VESTAS V136-4.2-Tronder 4200 136.0 !...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	1,802	10.4
B04	610,158.7	7,003,453.6	630.8	VESTAS V136-4.2-Tronder 4200 136.0 !...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	1,802	10.4
B05	610,228.9	7,003,758.1	626.4	VESTAS V136-4.2-Tronder 4200 136.0 !...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	1,802	10.4
B06	610,310.7	7,004,076.1	630.7	VESTAS V136-4.2-Tronder 4200 136.0 !...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	1,802	10.4
C01	610,724.0	7,002,717.0	671.6	VESTAS V136-4.2-Tronder 4200 136.0 !...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	1,802	10.4
C02	610,775.0	7,003,021.0	654.3	VESTAS V136-4.2-Tronder 4200 136.0 !...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	1,802	10.4
C03	610,830.0	7,003,321.9	642.0	VESTAS V136-4.2-Tronder 4200 136.0 !...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	1,802	10.4
C04	611,405.0	7,002,649.0	639.0	VESTAS V136-4.2-Tronder 4200 136.0 !...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	1,802	10.4
C05	612,213.0	7,002,408.0	596.5	VESTAS V136-4.2-Tronder 4200 136.0 !...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	1,802	10.4
C06	612,270.1	7,002,826.6	590.4	VESTAS V136-4.2-Tronder 4200 136.0 !...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	1,802	10.4
D01	610,188.5	7,001,628.1	666.1	VESTAS V136-4.2-Tronder 4200 136.0 !...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	1,802	10.4
D02	610,137.2	7,001,919.8	689.5	VESTAS V136-4.2-Tronder 4200 136.0 !...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	1,802	10.4
D03	610,171.9	7,002,188.0	698.6	VESTAS V136-4.2-Tronder 4200 136.0 !...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	1,802	10.4
T01	610,653.0	7,000,458.0	668.3	NORDEX N149/5.9-Conf 5900 149.0 !O!...	Yes	NORDEX	N149/5.9-Conf-5,900	5,900	149.0	120.0	1,808	10.7
T02	610,715.0	7,001,046.0	657.6	NORDEX N149/5.9-Conf 5900 149.0 !O!...	Yes	NORDEX	N149/5.9-Conf-5,900	5,900	149.0	120.0	1,808	10.7
T03	611,129.0	7,000,753.0	629.5	NORDEX N149/5.9-Conf 5900 149.0 !O!...	Yes	NORDEX	N149/5.9-Conf-5,900	5,900	149.0	120.0	1,808	10.7
T04	611,056.0	7,001,193.0	628.6	NORDEX N149/5.9-Conf 5900 149.0 !O!...	Yes	NORDEX	N149/5.9-Conf-5,900	5,900	149.0	120.0	1,808	10.7
T05	611,131.0	7,002,323.0	637.6	NORDEX N149/5.9-Conf 5900 149.0 !O!...	Yes	NORDEX	N149/5.9-Conf-5,900	5,900	149.0	120.0	1,808	10.7
T06	610,737.0	7,001,642.0	647.7	NORDEX N149/5.9-Conf 5900 149.0 !O!...	Yes	NORDEX	N149/5.9-Conf-5,900	5,900	149.0	120.0	1,808	10.7
T07	610,814.0	7,002,183.0	647.2	NORDEX N149/5.9-Conf 5900 149.0 !O!...	Yes	NORDEX	N149/5.9-Conf-5,900	5,900	149.0	120.0	1,808	10.7
T08	611,141.0	7,001,623.0	619.3	NORDEX N149/5.9-Conf 5900 149.0 !O!...	Yes	NORDEX	N149/5.9-Conf-5,900	5,900	149.0	120.0	1,808	10.7
T09	611,718.0	7,002,259.0	594.0	NORDEX N149/5.9-Conf 5900 149.0 !O!...	Yes	NORDEX	N149/5.9-Conf-5,900	5,900	149.0	120.0	1,808	10.7

Project:
Stokkfjellet

Licensed user:
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Konsgård Allé 59
NO-4632 Kristiansand
+47 3860 7115
data / data@meventus.com
Calculated:
13.02.2026 10:19/4.2.285

SHADOW - Main Result

Calculation: 202602_21xV136_4.2MW_112mHH+9xN149_5.9MW_120mHH (Stokkfjellet I + II)

Shadow receptor-Input

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
A	611,850.6	7,000,690.5	571.4	2.0	2.0	2.0	90.0	"Green house mode"	4.0
B	609,505.6	7,003,031.5	531.5	2.0	2.0	2.0	90.0	"Green house mode"	4.0
C	609,465.6	7,002,879.5	554.9	2.0	2.0	2.0	90.0	"Green house mode"	4.0
D	612,749.6	7,002,735.5	564.5	2.0	2.0	2.0	90.0	"Green house mode"	4.0
E	609,305.6	7,002,705.5	564.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
F	609,446.6	7,001,998.5	609.9	2.0	2.0	2.0	90.0	"Green house mode"	4.0
G	609,823.6	7,001,180.5	595.5	2.0	2.0	2.0	90.0	"Green house mode"	4.0
H	611,889.6	7,000,713.5	570.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
I	612,645.6	7,002,270.5	561.5	2.0	2.0	2.0	90.0	"Green house mode"	4.0
J	612,788.6	7,002,481.5	566.4	2.0	2.0	2.0	90.0	"Green house mode"	4.0
L	610,004.6	7,004,697.5	534.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
M	609,835.6	7,003,018.5	595.9	2.0	2.0	2.0	90.0	"Green house mode"	4.0
N	610,801.6	6,999,723.5	619.7	2.0	2.0	2.0	90.0	"Green house mode"	4.0
O	609,955.6	7,003,925.5	555.8	2.0	2.0	2.0	90.0	"Green house mode"	4.0
P	609,968.6	7,003,878.5	560.7	2.0	2.0	2.0	90.0	"Green house mode"	4.0
Q	609,353.6	7,001,475.5	554.2	2.0	2.0	2.0	90.0	"Green house mode"	4.0
R	609,317.6	7,001,423.5	555.9	2.0	2.0	2.0	90.0	"Green house mode"	4.0
S	609,198.6	7,001,698.5	580.2	2.0	2.0	2.0	90.0	"Green house mode"	4.0
T	609,126.6	7,001,168.5	559.9	2.0	2.0	2.0	90.0	"Green house mode"	4.0
U	608,930.6	7,001,820.5	562.7	2.0	2.0	2.0	90.0	"Green house mode"	4.0
V	611,982.6	7,005,515.5	222.4	2.0	2.0	2.0	90.0	"Green house mode"	4.0
W	608,991.6	7,003,965.5	486.4	2.0	2.0	2.0	90.0	"Green house mode"	4.0
X	608,823.6	7,002,396.5	567.2	2.0	2.0	2.0	90.0	"Green house mode"	4.0
Y	612,173.6	7,004,963.5	215.5	2.0	2.0	2.0	90.0	"Green house mode"	4.0
Z	609,074.6	7,000,829.5	560.3	2.0	2.0	2.0	90.0	"Green house mode"	4.0
AB	609,177.6	7,000,286.5	554.3	2.0	2.0	2.0	90.0	"Green house mode"	4.0
AC	608,985.6	7,000,500.5	556.9	2.0	2.0	2.0	90.0	"Green house mode"	4.0
AD	612,413.6	7,004,781.5	222.4	2.0	2.0	2.0	90.0	"Green house mode"	4.0
AE	609,067.6	7,000,186.5	573.9	2.0	2.0	2.0	90.0	"Green house mode"	4.0
AF	609,059.6	7,000,064.5	576.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
AG	612,360.6	7,005,923.5	212.8	2.0	2.0	2.0	90.0	"Green house mode"	4.0
AH	612,719.6	7,004,583.5	200.8	2.0	2.0	2.0	90.0	"Green house mode"	4.0
AI	610,960.0	7,004,225.0	553.1	2.0	2.0	2.0	90.0	"Green house mode"	4.0
AJ	608,770.0	7,002,143.0	565.7	2.0	2.0	2.0	90.0	"Green house mode"	4.0

Calculation Results

Shadow receptor

No.	Shadow, worst case: Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow, expected values: Shadow hours per year [h/year]
A	134:08	172	1:17	41:57
B	122:36	255	0:49	36:54
C	168:53	283	0:59	48:11
D	188:30	210	1:27	54:21
E	156:35	271	1:03	42:42
F	227:34	249	2:01	60:52
G	60:41	182	0:43	17:39
H	133:01	178	1:12	41:38
I	141:28	193	1:12	44:22
J	119:46	161	1:17	35:48
L	131:27	246	0:53	35:27
M	250:13	281	1:37	74:15
N	0:00	0	0:00	0:00
O	274:22	292	1:28	80:50
P	339:06	283	1:37	102:45
Q	76:50	198	0:40	21:06
R	77:56	200	0:46	21:04
S	139:20	200	1:18	34:52
T	60:39	184	0:29	15:30
U	68:33	167	0:58	17:26
V	0:00	0	0:00	0:00
W	53:22	149	0:43	15:56

To be continued on next page...

Project:
Stokkfjellet

Licensed user:
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Calculated:
13.02.2026 10:19/4.2.285

SHADOW - Main Result

Calculation: 202602_21xV136_4.2MW_112mHH+9xN149_5.9MW_120mHH (Stokkfjellet I + II)

...continued from previous page

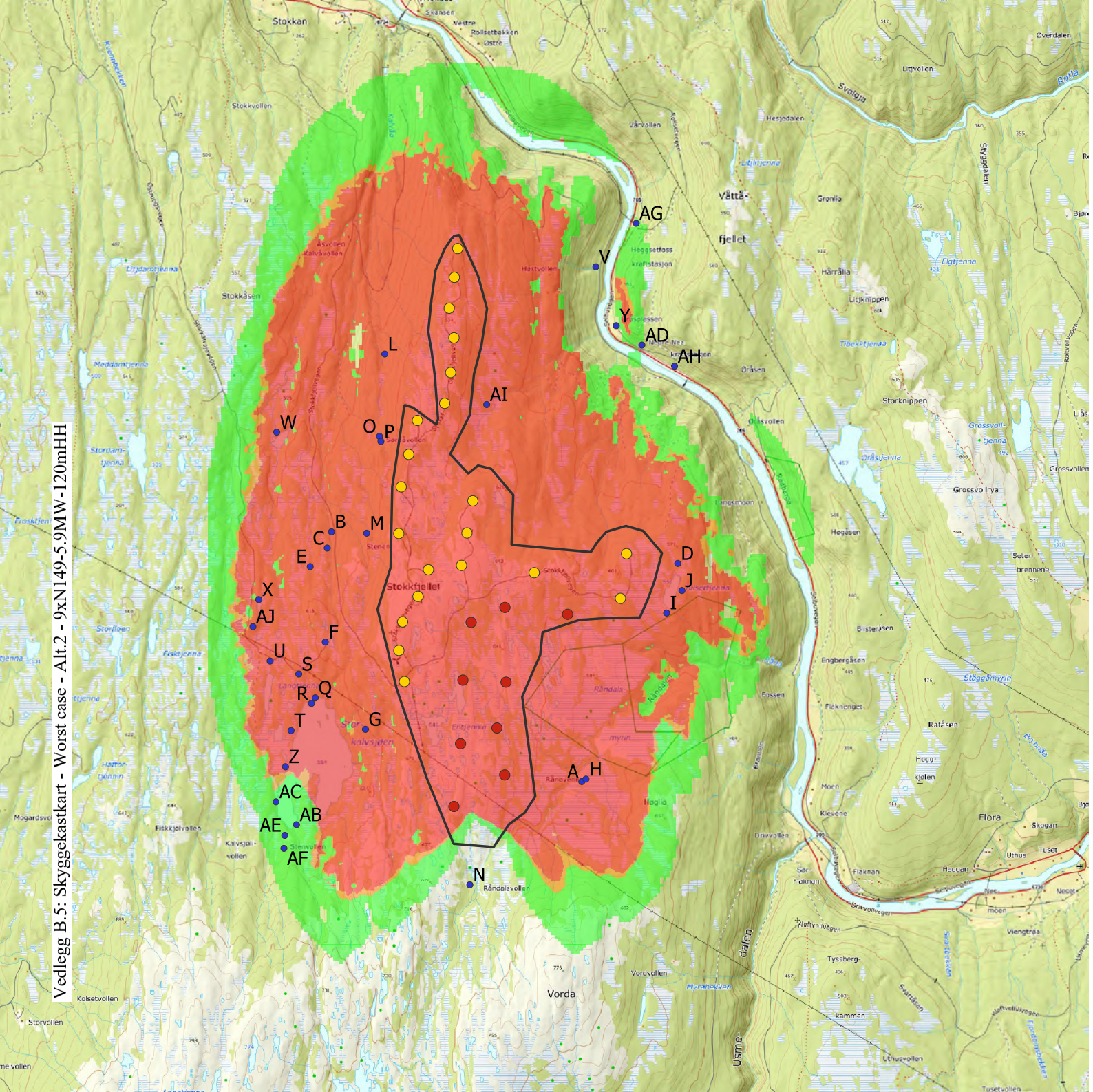
No.	Shadow, worst case: Shadow hours per year [h/year]	Shadow, worst case: Shadow days per year [days/year]	Shadow, worst case: Max shadow hours per day [h/day]	Shadow, expected values: Shadow hours per year [h/year]
X	66:24	205	0:34	18:05
Y	0:00	0	0:00	0:00
Z	39:35	120	0:25	9:45
AB	20:24	72	0:23	5:19
AC	18:23	69	0:21	4:18
AD	0:00	0	0:00	0:00
AE	8:40	31	0:22	2:24
AF	8:46	32	0:22	2:19
AG	0:00	0	0:00	0:00
AH	0:00	0	0:00	0:00
AI	234:36	305	1:18	60:34
AJ	52:44	162	0:35	14:34

Total amount of flickering on the shadow receptors caused by each WTG

No.	Name	Worst case [h/year]	Expected [h/year]
A01	VESTAS V136-4.2-Tronder 4200 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (449)	142:53	41:50
A02	VESTAS V136-4.2-Tronder 4200 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (450)	16:22	4:44
A03	VESTAS V136-4.2-Tronder 4200 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (451)	49:21	13:10
A04	VESTAS V136-4.2-Tronder 4200 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (452)	0:00	0:00
A05	VESTAS V136-4.2-Tronder 4200 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (453)	0:00	0:00
A06	VESTAS V136-4.2-Tronder 4200 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (454)	0:00	0:00
B01	VESTAS V136-4.2-Tronder 4200 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (455)	172:20	47:04
B02	VESTAS V136-4.2-Tronder 4200 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (456)	161:38	43:02
B03	VESTAS V136-4.2-Tronder 4200 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (457)	364:16	98:53
B04	VESTAS V136-4.2-Tronder 4200 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (458)	143:29	35:23
B05	VESTAS V136-4.2-Tronder 4200 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (459)	298:40	93:12
B06	VESTAS V136-4.2-Tronder 4200 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (460)	86:25	23:35
C01	VESTAS V136-4.2-Tronder 4200 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (461)	44:53	11:49
C02	VESTAS V136-4.2-Tronder 4200 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (462)	43:28	10:23
C03	VESTAS V136-4.2-Tronder 4200 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (463)	39:48	8:48
C04	VESTAS V136-4.2-Tronder 4200 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (464)	42:36	12:37
C05	VESTAS V136-4.2-Tronder 4200 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (465)	188:22	54:47
C06	VESTAS V136-4.2-Tronder 4200 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (466)	160:06	50:56
D01	VESTAS V136-4.2-Tronder 4200 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (467)	195:51	53:10
D02	VESTAS V136-4.2-Tronder 4200 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (468)	180:29	49:53
D03	VESTAS V136-4.2-Tronder 4200 136.0 !O! hub: 112.0 m (TOT: 180.0 m) (469)	189:14	51:50
T01	NORDEX N149/5.9-Conf 5900 149.0 !O! hub: 120.0 m (TOT: 194.5 m) (822)	84:59	25:13
T02	NORDEX N149/5.9-Conf 5900 149.0 !O! hub: 120.0 m (TOT: 194.5 m) (823)	100:26	30:48
T03	NORDEX N149/5.9-Conf 5900 149.0 !O! hub: 120.0 m (TOT: 194.5 m) (824)	59:05	18:07
T04	NORDEX N149/5.9-Conf 5900 149.0 !O! hub: 120.0 m (TOT: 194.5 m) (825)	57:56	18:48
T05	NORDEX N149/5.9-Conf 5900 149.0 !O! hub: 120.0 m (TOT: 194.5 m) (826)	23:42	6:48
T06	NORDEX N149/5.9-Conf 5900 149.0 !O! hub: 120.0 m (TOT: 194.5 m) (827)	71:45	20:27
T07	NORDEX N149/5.9-Conf 5900 149.0 !O! hub: 120.0 m (TOT: 194.5 m) (828)	14:43	4:00
T08	NORDEX N149/5.9-Conf 5900 149.0 !O! hub: 120.0 m (TOT: 194.5 m) (829)	7:42	1:54
T09	NORDEX N149/5.9-Conf 5900 149.0 !O! hub: 120.0 m (TOT: 194.5 m) (830)	56:48	15:39

Total times in Receptor wise and WTG wise tables can differ, as a WTG can lead to flicker at 2 or more receptors simultaneously and/or receptors may receive flicker from 2 or more WTGs simultaneously.

The calculation of the total expected values for a given receptor assumes a weighted average directional reduction for all WTGs contributing to shadow flicker within the same day. In the case where shadow flicker from different WTGs is not concurrent within the day, the total expected time at a given receptor may deviate marginally from the individual flicker time caused by each turbine separately.



Vedlegg B.5: Skyggekastkart - Worst case - Alt.2 - 9xN149-5.9MW-120mHH

Stokkfjellet II Wind Farm

- Wind turbines (Planned)
- Wind turbines (Existing)
- Neighbors
- Planning area

	Hours/year
	0-30
	30-35
	>35

Calculation settings

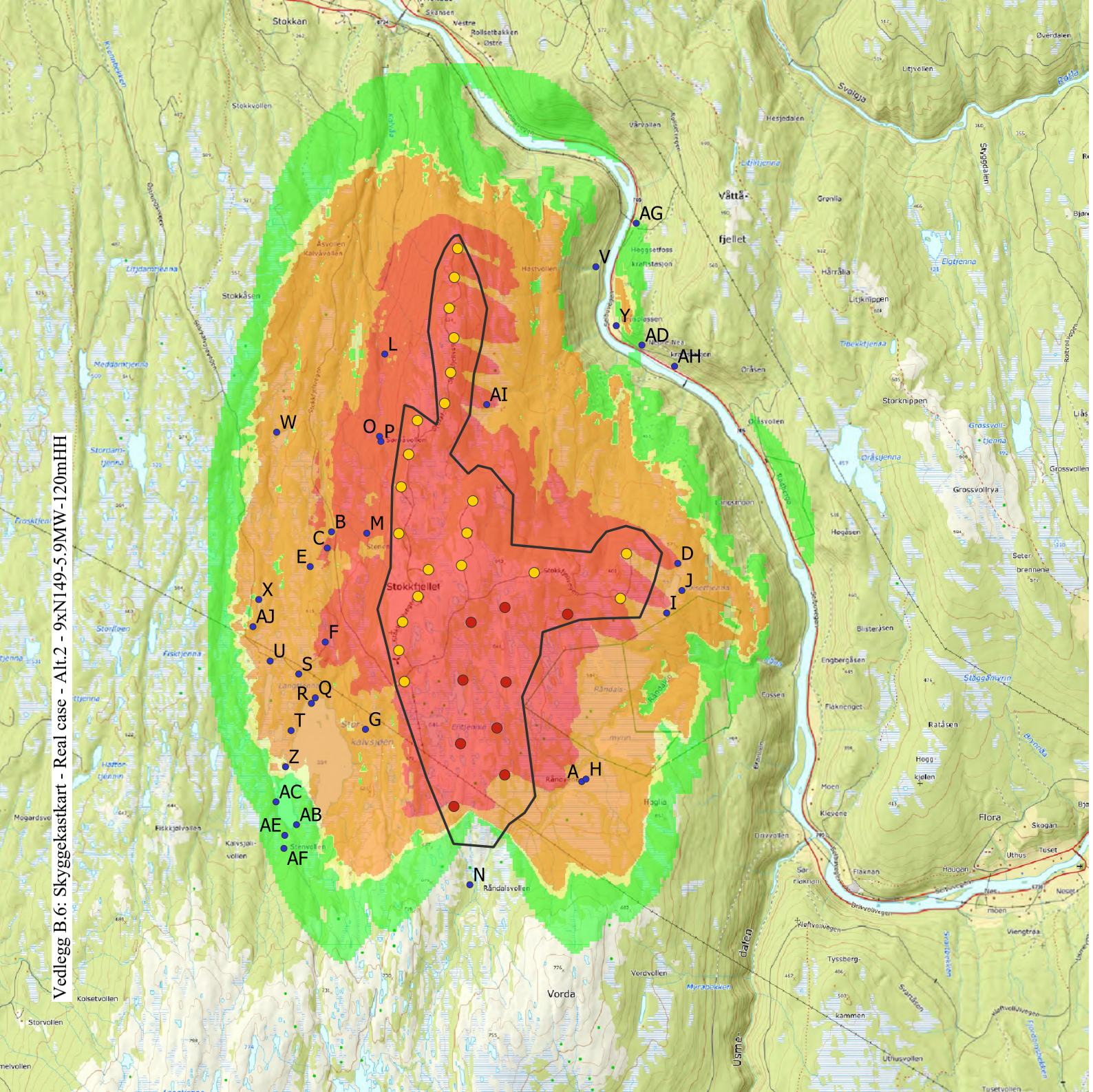
Software:	WindPRO v4.2.285
Model:	SHADOW
Calculation:	Worst case
Forest considered:	No

Layout Information

Layout name:	L01d
Number of turbines:	9
Turbine type:	N149-5.9MW
Rotor diameter:	149 m
Rated Power:	5.9 MW
Hub height:	120 m
Total height:	194.5 m

Performed by:	Meventus AS
Date:	13.02.2026

Meventus
Your partner in wind



Vedlegg B.6: Skyggekastkart - Real case - Alt.2 - 9xN149-5.9MW-120mHH

Stokkfjellet II Wind Farm

- Wind turbines (Planned)
- Wind turbines (Existing)
- Neighbors
- Planning area

	Hours/year
	0 - 8
	8 - 10
	10 - 50
	> 50

Calculation settings

Software:	WindPRO v.4.2.285
Model:	SHADOW
Calculation:	Real case based on statistics
Forest considered:	No

Layout Information

Layout name:	L01d
Number of turbines:	9
Turbine type:	N149-5.9MW
Rotor diameter:	149 m
Rated Power:	5.9 MW
Hub height:	120 m
Total height:	194.5 m

Performed by:	Meventus AS
Date:	13.02.2026

Meventus
Your partner in wind

Project:
Stokkfjellet

Description:
Calculations based on the following files provided by the customer as used in the MTA plan (4.12.2018/01) Nord2000 calculations:
Terrain Elevation - Stokkfjellet_hoyde_stor_utm32.map
Roughness – ROUGHNESSLINE_Stokkfjellet_1.map
Terrain type (Hardness) – REGIONS_Nord2000_2.w2r

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Calculated:
13.02.2026 11:47/4.2.285

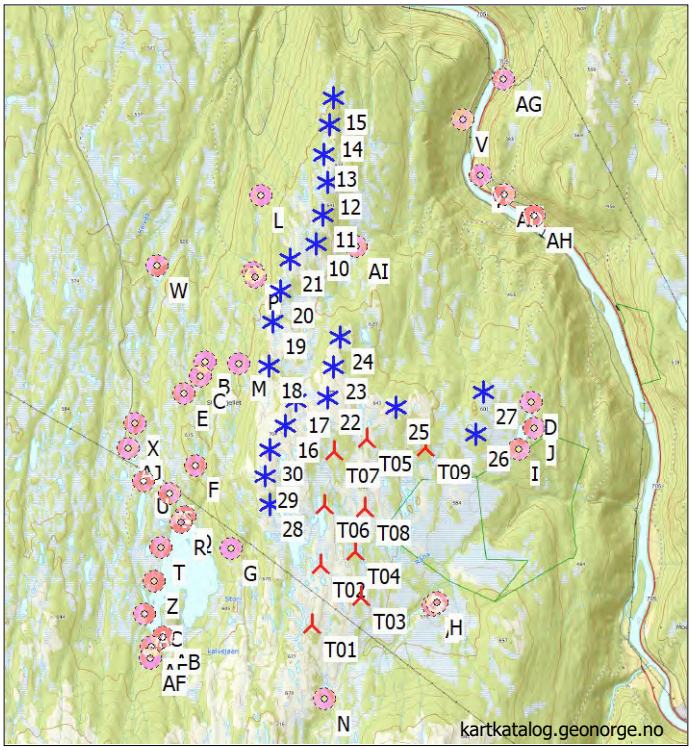
NORD2000 - Main Result

Calculation: 202602_L01D_9xV136_4.5MW_112mHH_StokkfjelletII_wExisting

Assumptions

Calculation model	Norwegian noise, worst case
Weather stability	
Relative humidity	70.0 %
Air temperature	3.0 °C
Height for air temperature	100.0 m
Stability parameters	Night;Clear sky
Inverse Monin Obukhov length	0.0100
Temperature scale T*	0.0500
Terrain	
Elevation based on object	
Height Contours: Stokkfjellet_hoyde_stor_utm32.map (17)	
Roughness based on line object	
Roughness Lines: ROUGHNESSLINE_Stokkfjellet_1.map (18)	
Terrain type based on area object	
REGIONS_Nord2000_2.w2r (5)	
Month for calculation	January
Uniform terrain	
Wind speed criteria	
Uniform wind speed at 10 m agl.	
Wind speed (at hubheight)	Highest noise value
Wind direction	
Selected option	All receptors downwind of all wind turbines
Height above ground level, when no value in NSA object	4.0 m; Don't allow override of model height with height from NSA object
Uncertainty margin	0.0 dB; Uncertainty margin in NSA has priority
Wind speed has been extrapolated to calculation height using	IEC profile shear (z0 = 0.05m)
Use stability correction	
Version	6.005

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



Scale 1:75,000
New WTG
Existing WTG
Noise sensitive area

WTGs

	Easting	Northing	Z [m]	Row data/Description	WTG type Valid	Manufact.	Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Noise data Setting	Creator	Name
T01	610,653.0	7,000,458.0	668.3	VESTAS V136-4.5 4500 1...	Yes	VESTAS	V136-4.5-4,500	4,500	136.0	112.0	Day	EMD	Level 0 - Measured - PO4 - 12-2022
											Evening	EMD	Level 0 - Measured - PO4 - 12-2022
											Night	EMD	Level 0 - Measured - PO4 - 12-2022
T02	610,715.0	7,001,046.0	657.3	VESTAS V136-4.5 4500 1...	Yes	VESTAS	V136-4.5-4,500	4,500	136.0	112.0	Day	EMD	Level 0 - Measured - PO4 - 12-2022
											Evening	EMD	Level 0 - Measured - PO4 - 12-2022
											Night	EMD	Level 0 - Measured - PO4 - 12-2022
T03	611,129.0	7,000,753.0	629.4	VESTAS V136-4.5 4500 1...	Yes	VESTAS	V136-4.5-4,500	4,500	136.0	112.0	Day	EMD	Level 0 - Measured - PO4 - 12-2022
											Evening	EMD	Level 0 - Measured - PO4 - 12-2022
											Night	EMD	Level 0 - Measured - PO4 - 12-2022
T04	611,056.0	7,001,193.0	628.5	VESTAS V136-4.5 4500 1...	Yes	VESTAS	V136-4.5-4,500	4,500	136.0	112.0	Day	EMD	Level 0 - Measured - PO4 - 12-2022
											Evening	EMD	Level 0 - Measured - PO4 - 12-2022
											Night	EMD	Level 0 - Measured - PO4 - 12-2022
T05	611,131.0	7,002,323.0	637.4	VESTAS V136-4.5 4500 1...	Yes	VESTAS	V136-4.5-4,500	4,500	136.0	112.0	Day	EMD	Level 0 - Measured - PO4 - 12-2022
											Evening	EMD	Level 0 - Measured - PO4 - 12-2022
											Night	EMD	Level 0 - Measured - PO4 - 12-2022
T06	610,737.0	7,001,642.0	647.7	VESTAS V136-4.5 4500 1...	Yes	VESTAS	V136-4.5-4,500	4,500	136.0	112.0	Day	EMD	Level 0 - Measured - PO4 - 12-2022
											Evening	EMD	Level 0 - Measured - PO4 - 12-2022
											Night	EMD	Level 0 - Measured - PO4 - 12-2022
T07	610,814.0	7,002,183.0	647.0	VESTAS V136-4.5 4500 1...	Yes	VESTAS	V136-4.5-4,500	4,500	136.0	112.0	Day	EMD	Level 0 - Measured - PO4 - 12-2022
											Evening	EMD	Level 0 - Measured - PO4 - 12-2022
											Night	EMD	Level 0 - Measured - PO4 - 12-2022
T08	611,141.0	7,001,623.0	619.4	VESTAS V136-4.5 4500 1...	Yes	VESTAS	V136-4.5-4,500	4,500	136.0	112.0	Day	EMD	Level 0 - Measured - PO4 - 12-2022
											Evening	EMD	Level 0 - Measured - PO4 - 12-2022
											Night	EMD	Level 0 - Measured - PO4 - 12-2022
T09	611,718.0	7,002,259.0	594.1	VESTAS V136-4.5 4500 1...	Yes	VESTAS	V136-4.5-4,500	4,500	136.0	112.0	Day	EMD	Level 0 - Measured - PO4 - 12-2022
											Evening	EMD	Level 0 - Measured - PO4 - 12-2022
											Night	EMD	Level 0 - Measured - PO4 - 12-2022
10	610,565.9	7,004,236.0	635.0	VESTAS V136-4.2-Trond...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	Day	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Evening	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Night	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
11	610,621.9	7,004,524.9	639.0	VESTAS V136-4.2-Trond...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	Day	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Evening	USER	V136 4.2 MW, Mode PO1, w Serrated Edges

To be continued on next page...

Project:
Stokkfjellet

Description:
Calculations based on the following files provided by the customer as used in the MTA plan (4.12.2018/01) Nord2000 calculations:
Terrain Elevation - Stokkfjellet_hoyde_stor_utm32.map
Roughness – ROUGHNESSLINE_Stokkfjellet_1.map
Terrain type (Hardness) – REGIONS_Nord2000_2.w2r

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data / data@meventus.com

Calculated:
13.02.2026 11:47/4.2.285

NORD2000 - Main Result

Calculation: 202602_L01D_9xV136_4.5MW_112mHH_StokkfjelletII_wExisting

...continued from previous page

	Easting	Northing	Z [m]	Row data/Description	WTG type Valid	Manufact.	Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Noise data Setting	Creator	Name
											Night	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
12	610,653.2	7,004,850.0	632.9	VESTAS V136-4.2-Trond...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	Day	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Evening	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Night	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
13	610,608.6	7,005,128.0	623.2	VESTAS V136-4.2-Trond...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	Day	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Evening	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Night	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
14	610,656.8	7,005,416.9	613.7	VESTAS V136-4.2-Trond...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	Day	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Evening	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Night	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
15	610,688.0	7,005,687.0	601.8	VESTAS V136-4.2-Trond...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	Day	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Evening	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Night	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
16	610,316.0	7,002,427.1	700.7	VESTAS V136-4.2-Trond...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	Day	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Evening	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Night	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
17	610,414.0	7,002,677.0	676.1	VESTAS V136-4.2-Trond...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	Day	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Evening	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Night	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
18	610,136.4	7,003,015.9	660.0	VESTAS V136-4.2-Trond...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	Day	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Evening	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Night	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
19	610,158.7	7,003,453.6	631.0	VESTAS V136-4.2-Trond...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	Day	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Evening	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Night	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
20	610,228.9	7,003,758.1	626.7	VESTAS V136-4.2-Trond...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	Day	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Evening	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Night	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
21	610,310.7	7,004,076.1	630.7	VESTAS V136-4.2-Trond...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	Day	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Evening	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Night	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
22	610,724.0	7,002,717.0	671.8	VESTAS V136-4.2-Trond...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	Day	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Evening	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Night	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
23	610,775.0	7,003,021.0	654.0	VESTAS V136-4.2-Trond...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	Day	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Evening	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Night	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
24	610,830.0	7,003,321.9	642.0	VESTAS V136-4.2-Trond...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	Day	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Evening	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Night	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
25	611,405.0	7,002,649.0	639.0	VESTAS V136-4.2-Trond...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	Day	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Evening	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Night	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
26	612,213.0	7,002,408.0	596.0	VESTAS V136-4.2-Trond...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	Day	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Evening	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Night	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
27	612,270.1	7,002,826.6	590.3	VESTAS V136-4.2-Trond...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	Day	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Evening	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Night	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
28	610,188.5	7,001,628.1	666.2	VESTAS V136-4.2-Trond...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	Day	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Evening	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Night	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
29	610,137.2	7,001,919.8	689.7	VESTAS V136-4.2-Trond...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	Day	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Evening	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Night	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
30	610,171.9	7,002,188.0	698.3	VESTAS V136-4.2-Trond...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	Day	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Evening	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Night	USER	V136 4.2 MW, Mode PO1, w Serrated Edges

Calculation Results

Sound level

Noise sensitive area					Demands	Sound level	Demands fulfilled?
No.	Name	Easting	Northing	Z [m]	Immission height [m]	Noise [dB(A)]	From WTGs [dB(A)]	Noise
A	Noise sensitive point: Norwegian - Yellow zone (466)	611,850.6	7,000,690.5	571.0	4.0	45	47	**No**
A	Day						41	
A	Evening						41	
A	Night						41	
B	Noise sensitive point: Norwegian - Yellow zone (467)	609,505.6	7,003,031.5	531.9	4.0	45	48	**No**
B	Day						41	
B	Evening						41	
B	Night						41	

To be continued on next page...

Project:
Stokkfjellet

Description:
Calculations based on the following files provided by the customer as used in the MTA plan (4.12.2018/01) Nord2000 calculations:
Terrain Elevation - Stokkfjellet_hoyde_stor_utm32.map
Roughness – ROUGHNESSLINE_Stokkfjellet_1.map
Terrain type (Hardness) – REGIONS_Nord2000_2.w2r

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Calculated:
13.02.2026 11:47/4.2.285

NORD2000 - Main Result

Calculation: 202602_L01D_9xV136_4.5MW_112mHH_StokkfjelletII_wExisting

...continued from previous page

Noise sensitive area						Demands	Sound level	Demands fulfilled?
No.	Name	Easting	Northing	Z [m]	Immission height [m]	Noise [dB(A)]	From WTGs [dB(A)]	Noise
C	Noise sensitive point: Norwegian - Yellow zone (468)	609,465.6	7,002,879.5	554.9	4.0	45	49	**No**
C	Day						42	
C	Evening						42	
C	Night						42	
D	Noise sensitive point: Norwegian - Yellow zone (469)	612,749.6	7,002,735.5	564.7	4.0	45	49	**No**
D	Day						42	
D	Evening						42	
D	Night						42	
E	Noise sensitive point: Norwegian - Yellow zone (470)	609,305.6	7,002,705.5	563.9	4.0	45	48	**No**
E	Day						41	
E	Evening						41	
E	Night						41	
F	Noise sensitive point: Norwegian - Yellow zone (471)	609,446.6	7,001,998.5	609.8	4.0	45	49	**No**
F	Day						42	
F	Evening						42	
F	Night						42	
G	Noise sensitive point: Norwegian - Yellow zone (472)	609,823.6	7,001,180.5	595.7	4.0	45	48	**No**
G	Day						41	
G	Evening						41	
G	Night						41	
H	Noise sensitive point: Norwegian - Yellow zone (473)	611,889.6	7,000,713.5	570.0	4.0	45	47	**No**
H	Day						41	
H	Evening						41	
H	Night						41	
I	Noise sensitive point: Norwegian - Yellow zone (474)	612,645.6	7,002,270.5	561.1	4.0	45	49	**No**
I	Day						42	
I	Evening						42	
I	Night						42	
J	Noise sensitive point: Norwegian - Yellow zone (475)	612,788.6	7,002,481.5	566.0	4.0	45	49	**No**
J	Day						43	
J	Evening						43	
J	Night						43	
L	Noise sensitive point: Norwegian - Yellow zone (477)	610,004.6	7,004,697.5	533.9	4.0	45	50	**No**
L	Day						43	
L	Evening						43	
L	Night						43	
M	Noise sensitive point: Norwegian - Yellow zone (478)	609,835.6	7,003,018.5	595.6	4.0	45	52	**No**
M	Day						46	
M	Evening						46	
M	Night						46	
N	Noise sensitive point: Norwegian - Yellow zone (479)	610,801.6	6,999,723.5	619.7	4.0	45	45	Yes
N	Day						39	
N	Evening						39	
N	Night						39	
O	Noise sensitive point: Norwegian - Yellow zone (480)	609,955.6	7,003,925.5	555.8	4.0	45	53	**No**
O	Day						47	
O	Evening						47	
O	Night						47	
P	Noise sensitive point: Norwegian - Yellow zone (481)	609,968.6	7,003,878.5	560.5	4.0	45	54	**No**
P	Day						47	
P	Evening						47	
P	Night						47	
Q	Noise sensitive point: Norwegian - Yellow zone (482)	609,353.6	7,001,475.5	554.2	4.0	45	47	**No**
Q	Day						40	
Q	Evening						40	
Q	Night						40	
R	Noise sensitive point: Norwegian - Yellow zone (483)	609,317.6	7,001,423.5	556.0	4.0	45	47	**No**
R	Day						40	
R	Evening						40	
R	Night						40	
S	Noise sensitive point: Norwegian - Yellow zone (484)	609,198.6	7,001,698.5	580.9	4.0	45	46	**No**
S	Day						40	
S	Evening						40	
S	Night						40	
T	Noise sensitive point: Norwegian - Yellow zone (485)	609,126.6	7,001,168.5	559.8	4.0	45	45	Yes

To be continued on next page...

Project:
Stokkfjellet

Description:
Calculations based on the following files provided by the customer as used in the MTA plan (4.12.2018/01) Nord2000 calculations:
Terrain Elevation - Stokkfjellet_hoyde_stor_utm32.map
Roughness – ROUGHNESSLINE_Stokkfjellet_1.map
Terrain type (Hardness) – REGIONS_Nord2000_2.w2r

Licensed user:
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data / data@meventus.com
Calculated:
13.02.2026 11:47/4.2.285

NORD2000 - Main Result

Calculation: 202602_L01D_9xV136_4.5MW_112mHH_StokkfjelletII_wExisting

...continued from previous page

Noise sensitive area						Demands	Sound level	Demands fulfilled?
No.	Name	Easting	Northing	Z [m]	Immission height [m]	Noise [dB(A)]	From WTGs [dB(A)]	Noise
T	Day						38	
T	Evening						38	
T	Night						38	
U	Noise sensitive point: Norwegian - Yellow zone (486)	608,930.6	7,001,820.5	562.7	4.0	45	45	Yes
U	Day						38	
U	Evening						38	
U	Night						38	
V	Noise sensitive point: Norwegian - Yellow zone (487)	611,982.6	7,005,515.5	222.2	4.0	45	32	Yes
V	Day						26	
V	Evening						26	
V	Night						26	
W	Noise sensitive point: Norwegian - Yellow zone (488)	608,991.6	7,003,965.5	486.6	4.0	45	45	**No**
W	Day						39	
W	Evening						39	
W	Night						39	
X	Noise sensitive point: Norwegian - Yellow zone (489)	608,823.6	7,002,396.5	567.3	4.0	45	45	**No**
X	Day						39	
X	Evening						39	
X	Night						39	
Y	Noise sensitive point: Norwegian - Yellow zone (490)	612,173.6	7,004,963.5	215.7	4.0	45	38	Yes
Y	Day						31	
Y	Evening						31	
Y	Night						31	
Z	Noise sensitive point: Norwegian - Yellow zone (491)	609,074.6	7,000,829.5	560.0	4.0	45	44	Yes
Z	Day						38	
Z	Evening						38	
Z	Night						38	
AB	Noise sensitive point: Norwegian - Yellow zone (493)	609,177.6	7,000,286.5	554.2	4.0	45	42	Yes
AB	Day						36	
AB	Evening						36	
AB	Night						36	
AC	Noise sensitive point: Norwegian - Yellow zone (494)	608,985.6	7,000,500.5	556.3	4.0	45	43	Yes
AC	Day						37	
AC	Evening						37	
AC	Night						37	
AD	Noise sensitive point: Norwegian - Yellow zone (495)	612,413.6	7,004,781.5	223.2	4.0	45	41	Yes
AD	Day						35	
AD	Evening						35	
AD	Night						35	
AE	Noise sensitive point: Norwegian - Yellow zone (496)	609,067.6	7,000,186.5	573.8	4.0	45	42	Yes
AE	Day						36	
AE	Evening						36	
AE	Night						36	
AF	Noise sensitive point: Norwegian - Yellow zone (497)	609,059.6	7,000,064.5	576.0	4.0	45	41	Yes
AF	Day						35	
AF	Evening						35	
AF	Night						35	
AG	Noise sensitive point: Norwegian - Yellow zone (498)	612,360.6	7,005,923.5	213.0	4.0	45	40	Yes
AG	Day						34	
AG	Evening						34	
AG	Night						34	
AH	Noise sensitive point: Norwegian - Yellow zone (499)	612,719.6	7,004,583.5	200.4	4.0	45	38	Yes
AH	Day						32	
AH	Evening						32	
AH	Night						32	
AI	Noise sensitive point: Norwegian - Yellow zone (500)	610,959.9	7,004,224.6	553.1	4.0	45	53	**No**
AI	Day						47	
AI	Evening						47	
AI	Night						47	
AJ	Noise sensitive point: Norwegian - Yellow zone (501)	608,770.0	7,002,143.0	565.7	4.0	45	45	Yes
AJ	Day						38	
AJ	Evening						38	
AJ	Night						38	

Project:
Stokkfjellet

Description:
Calculations based on the following files provided by the customer as used in the MTA plan (4.12.2018/01) Nord2000 calculations:
Terrain Elevation - Stokkfjellet_hoyde_stor_utm32.map
Roughness – ROUGHNESSLINE_Stokkfjellet_1.map
Terrain type (Hardness) – REGIONS_Nord2000_2.w2r

Licensed user:
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data / data@meventus.com

Calculated:
13.02.2026 11:47/4.2.285

NORD2000 - Assumptions for NORD2000 calculation

Calculation: 202602_L01D_9xV136_4.5MW_112mHH_StokkfjelletII_wExisting

Assumptions

Calculation model	Norwegian noise, worst case
Weather stability	
Relative humidity	70.0 %
Air temperature	3.0 °C
Height for air temperature	100.0 m
Stability parameters	Night;Clear sky
Inverse Monin Obukhov length	0.0100
Temperature scale T*	0.0500
Terrain	
Elevation based on object	
Height Contours: Stokkfjellet_hoyde_stor_utm32.map (17)	
Roughness based on line object	
Roughness Lines: ROUGHNESSLINE_Stokkfjellet_1.map (18)	
Terrain type based on area object	
REGIONS_Nord2000_2.w2r (5)	
Month for calculation	January
Uniform terrain	
Wind speed criteria	
Uniform wind speed at 10 m agl.	
Wind speed (at hubheight)	Highest noise value
Wind direction	
Selected option	All receptors downwind of all wind turbines
Height above ground level, when no value in NSA object	4.0 m; Don't allow override of model height with height from NSA object
Uncertainty margin	0.0 dB; Uncertainty margin in NSA has priority
Wind speed has been extrapolated to calculation height using	IEC profile shear (z0 = 0.05m)
Use stability correction	
Version	
	6.005

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

Setup for Lden calculation

Variant	Name	From hour	To hour	Hours	Penalty [dB]	Days per year
1	Day	7	19	12	0	365
2	Evening	19	23	4	5	365
3	Night	23	7	8	10	365

Project:
Stokkfjellet

Description:
Calculations based on the following files provided by the customer as used in the MTA plan (4.12.2018/01) Nord2000 calculations:
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Calculated:
13.02.2026 11:47/4.2.285

NORD2000 - Assumptions for NORD2000 calculation

Calculation: 202602_L01D_9xV136_4.5MW_112mHH_StokkfjelletII_wExisting
WTG: VESTAS V136-4.5 4500 136.0 !O!
Noise: Level 0 - Measured - PO4 - 12-2022

Source	Source/Date	Creator	Edited
Manufacturer	31.03.2021	EMD	16.12.2022 08:32

Based on Document 0101-0973_01.

Octave data

Wind speed (hh) [m/s]	LwA,ref [dB(A)]	63 [dB(A)]	125 [dB(A)]	250 [dB(A)]	500 [dB(A)]	1000 [dB(A)]	2000 [dB(A)]	4000 [dB(A)]	8000 [dB(A)]
9.0	103.9	83.3	91.6	96.8	99.1	98.2	94.3	87.5	77.4

WTG: VESTAS V136-4.2-Tronder 4200 136.0 !O!
Noise: V136 4.2 MW, Mode PO1, w Serrated Edges

Source	Source/Date	Creator	Edited
DMS no.: 0067-4732_03	03.05.2018	USER	12.09.2018 13:52

Octave data

Wind speed (hh) [m/s]	LwA,ref [dB(A)]	63 [dB(A)]	125 [dB(A)]	250 [dB(A)]	500 [dB(A)]	1000 [dB(A)]	2000 [dB(A)]	4000 [dB(A)]	8000 [dB(A)]
18.0	103.9	85.6	92.8	97.2	98.9	97.9	94.2	87.8	78.7

NSA: Noise sensitive point: Norwegian - Yellow zone (466)-A
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (467)-B
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (468)-C
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (469)-D
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (470)-E
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (471)-F
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (472)-G
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)

Project:
Stokkfjellet

Description:
Calculations based on the following files provided by the customer as used in the MTA plan (4.12.2018/01) Nord2000 calculations:
Terrain Elevation - Stokkfjellet_hoyde_stor_utm32.map
Roughness – ROUGHNESSLINE_Stokkfjellet_1.map
Terrain type (Hardness) – REGIONS_Nord2000_2.w2r

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Calculated:
13.02.2026 11:47/4.2.285

NORD2000 - Assumptions for NORD2000 calculation

Calculation: 202602_L01D_9xV136_4.5MW_112mHH_StokkfjelletII_wExisting

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (473)-H
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (474)-I
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (475)-J
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (477)-L
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (478)-M
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (479)-N
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (480)-O
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (481)-P
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (482)-Q
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (483)-R
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)

Project:
Stokkfjellet

Description:
Calculations based on the following files provided by the customer as used in the MTA plan (4.12.2018/01) Nord2000 calculations:
Terrain Elevation - Stokkfjellet_hoyde_stor_utm32.map
Roughness – ROUGHNESSLINE_Stokkfjellet_1.map
Terrain type (Hardness) – REGIONS_Nord2000_2.w2r

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data / data@meventus.com

Calculated:
13.02.2026 11:47/4.2.285

NORD2000 - Assumptions for NORD2000 calculation

Calculation: 202602_L01D_9xV136_4.5MW_112mHH_StokkfjelletII_wExisting

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (484)-S
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (485)-T
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (486)-U
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (487)-V
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (488)-W
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (489)-X
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (490)-Y
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (491)-Z
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (493)-AB
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (494)-AC
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)

Project:
Stokkfjellet

Description:
Calculations based on the following files provided by the customer as used in the MTA plan (4.12.2018/01) Nord2000 calculations:
Terrain Elevation - Stokkfjellet_hoyde_stor_utm32.map
Roughness – ROUGHNESSLINE_Stokkfjellet_1.map
Terrain type (Hardness) – REGIONS_Nord2000_2.w2r

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data / data@meventus.com
Calculated:
13.02.2026 11:47/4.2.285

NORD2000 - Assumptions for NORD2000 calculation

Calculation: 202602_L01D_9xV136_4.5MW_112mHH_StokkfjelletII_wExisting

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (495)-AD
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (496)-AE
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

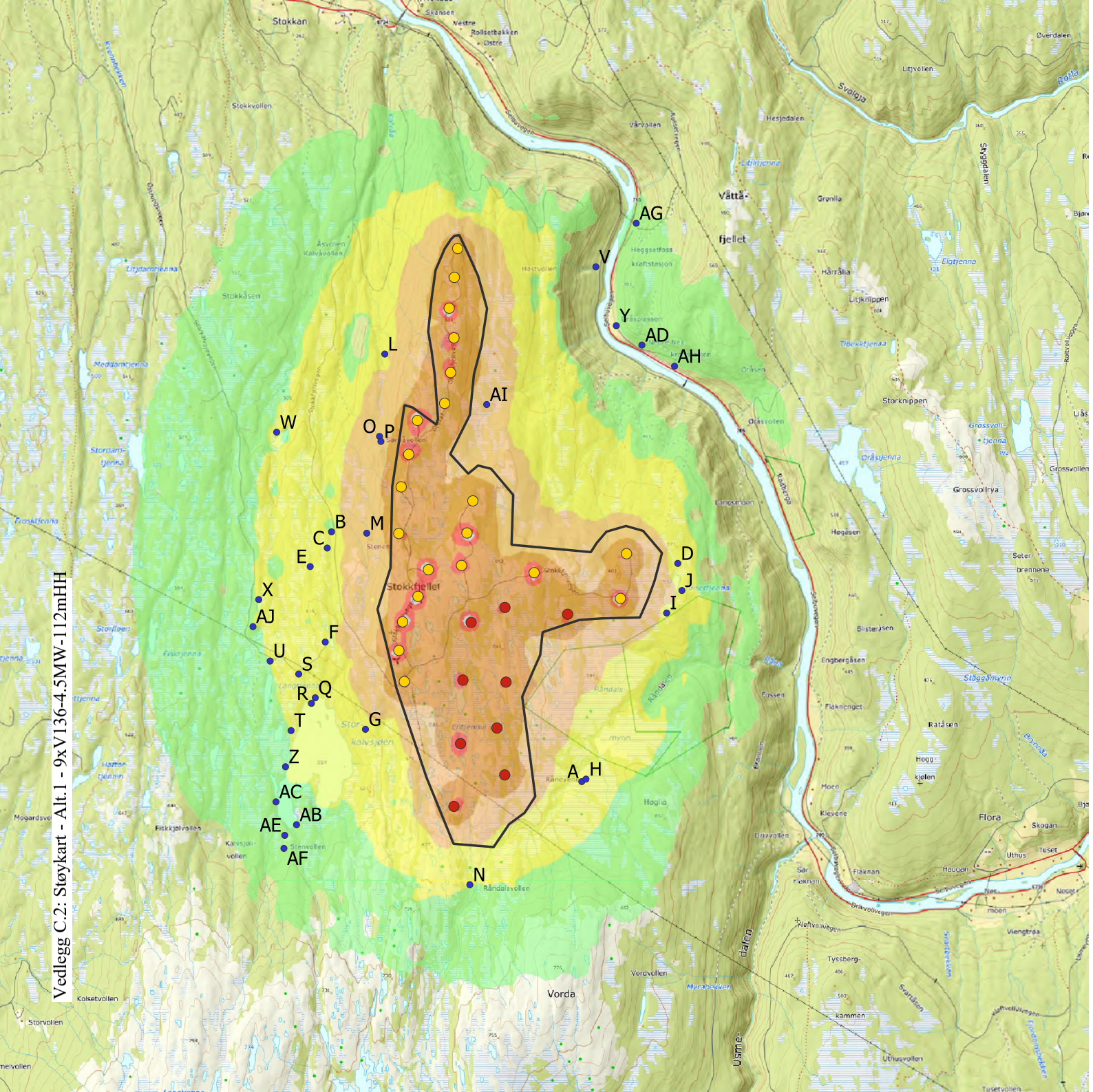
NSA: Noise sensitive point: Norwegian - Yellow zone (497)-AF
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (498)-AG
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (499)-AH
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (500)-AI
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (501)-AJ
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m



Vedlegg C.2: Støykart - Alt.1 - 9xV136-4.5MW-112mHH

Stokkfjellet II Wind Farm

- Wind turbines (Planned)
- Wind turbines (Existing)
- Neighbors
- Planning area

	dB (Lden)
	40-45
	45-50
	50-55
	55-60
	60-65
	> 65

Calculation settings

Software:	WindPRO v4.2.285
Model:	NORD2000
Calculation:	Worst case

Layout Information

Layout name:	L01d
Number of turbines:	9
Turbine type:	V136-4.5MW
Rotor diameter:	136 m
Rated Power:	4.5 MW
Hub height:	112 m
Total height:	180 m
Source Noise:	103.9 dB
Curtailment used:	No

Performed by: Meventus AS

Date: 13.02.2026

Meventus
Your partner in wind

Project:
Stokkfjellet

Description:
Calculations based on the following files provided by the customer as used in the MTA plan (4.12.2018/01) Nord2000 calculations:
Terrain Elevation - Stokkfjellet_hoyde_stor_utm32.map
Roughness – ROUGHNESSLINE_Stokkfjellet_1.map
Terrain type (Hardness) – REGIONS_Nord2000_2.w2r

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data / data@meventus.com

Calculated:
13.02.2026 09:22/4.2.285

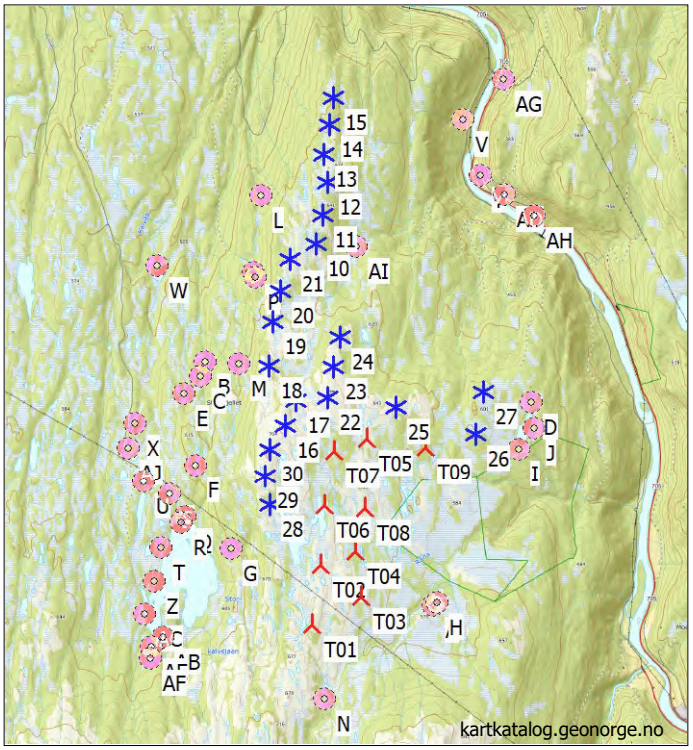
NORD2000 - Main Result

Calculation: 202602_L01D_9xN149_5.9MW_120mHH_StokkfjelletII_wExisting

Assumptions

Calculation model	Norwegian noise, worst case
Weather stability	
Relative humidity	70.0 %
Air temperature	3.0 °C
Height for air temperature	100.0 m
Stability parameters	Night;Clear sky
Inverse Monin Obukhov length	0.0100
Temperature scale T*	0.0500
Terrain	
Elevation based on object	
Height Contours: Stokkfjellet_hoyde_stor_utm32.map (17)	
Roughness based on line object	
Roughness Lines: ROUGHNESSLINE_Stokkfjellet_1.map (18)	
Terrain type based on area object	
REGIONS_Nord2000_2.w2r (5)	
Month for calculation	January
Uniform terrain	
Wind speed criteria	
Uniform wind speed at 10 m agl.	
Wind speed (at hubheight)	Highest noise value
Wind direction	
Selected option	All receptors downwind of all wind turbines
Height above ground level, when no value in NSA object	4.0 m; Don't allow override of model height with height from NSA object
Uncertainty margin	0.0 dB; Uncertainty margin in NSA has priority
Wind speed has been extrapolated to calculation height using	IEC profile shear (z0 = 0.05m)
Use stability correction	
Version	6.005

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



Scale 1:75,000
New WTG
Existing WTG
Noise sensitive area

WTGs

	Easting	Northing	Z [m]	Row data/Description	WTG type Valid	Manufact.	Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Noise data Setting	Creator	Name
T01	610,653.0	7,000,458.0	668.3	NORDEX N149/5.9-Conf 5...	Yes	NORDEX	N149/5.9-Conf-5,900	5,900	149.0	120.0	Day	USER	Mode 0.a (5.9 MW) (105.6 dB) w Serrated Edges
											Evening	USER	Mode 0.a (5.9 MW) (105.6 dB) w Serrated Edges
											Night	USER	Mode 0.a (5.9 MW) (105.6 dB) w Serrated Edges
T02	610,715.0	7,001,046.0	657.3	NORDEX N149/5.9-Conf 5...	Yes	NORDEX	N149/5.9-Conf-5,900	5,900	149.0	120.0	Day	USER	Mode 0.a (5.9 MW) (105.6 dB) w Serrated Edges
											Evening	USER	Mode 0.a (5.9 MW) (105.6 dB) w Serrated Edges
											Night	USER	Mode 0.a (5.9 MW) (105.6 dB) w Serrated Edges
T03	611,129.0	7,000,753.0	629.4	NORDEX N149/5.9-Conf 5...	Yes	NORDEX	N149/5.9-Conf-5,900	5,900	149.0	120.0	Day	USER	Mode 0.a (5.9 MW) (105.6 dB) w Serrated Edges
											Evening	USER	Mode 0.a (5.9 MW) (105.6 dB) w Serrated Edges
											Night	USER	Mode 0.a (5.9 MW) (105.6 dB) w Serrated Edges
T04	611,056.0	7,001,193.0	628.5	NORDEX N149/5.9-Conf 5...	Yes	NORDEX	N149/5.9-Conf-5,900	5,900	149.0	120.0	Day	USER	Mode 0.a (5.9 MW) (105.6 dB) w Serrated Edges
											Evening	USER	Mode 0.a (5.9 MW) (105.6 dB) w Serrated Edges
											Night	USER	Mode 0.a (5.9 MW) (105.6 dB) w Serrated Edges
T05	611,131.0	7,002,323.0	637.4	NORDEX N149/5.9-Conf 5...	Yes	NORDEX	N149/5.9-Conf-5,900	5,900	149.0	120.0	Day	USER	Mode 0.a (5.9 MW) (105.6 dB) w Serrated Edges
											Evening	USER	Mode 0.a (5.9 MW) (105.6 dB) w Serrated Edges
											Night	USER	Mode 0.a (5.9 MW) (105.6 dB) w Serrated Edges
T06	610,737.0	7,001,642.0	647.7	NORDEX N149/5.9-Conf 5...	Yes	NORDEX	N149/5.9-Conf-5,900	5,900	149.0	120.0	Day	USER	Mode 0.a (5.9 MW) (105.6 dB) w Serrated Edges
											Evening	USER	Mode 0.a (5.9 MW) (105.6 dB) w Serrated Edges
											Night	USER	Mode 0.a (5.9 MW) (105.6 dB) w Serrated Edges
T07	610,814.0	7,002,183.0	647.0	NORDEX N149/5.9-Conf 5...	Yes	NORDEX	N149/5.9-Conf-5,900	5,900	149.0	120.0	Day	USER	Mode 0.a (5.9 MW) (105.6 dB) w Serrated Edges
											Evening	USER	Mode 0.a (5.9 MW) (105.6 dB) w Serrated Edges
											Night	USER	Mode 0.a (5.9 MW) (105.6 dB) w Serrated Edges
T08	611,141.0	7,001,623.0	619.4	NORDEX N149/5.9-Conf 5...	Yes	NORDEX	N149/5.9-Conf-5,900	5,900	149.0	120.0	Day	USER	Mode 0.a (5.9 MW) (105.6 dB) w Serrated Edges
											Evening	USER	Mode 0.a (5.9 MW) (105.6 dB) w Serrated Edges
											Night	USER	Mode 0.a (5.9 MW) (105.6 dB) w Serrated Edges
T09	611,718.0	7,002,259.0	594.1	NORDEX N149/5.9-Conf 5...	Yes	NORDEX	N149/5.9-Conf-5,900	5,900	149.0	120.0	Day	USER	Mode 0.a (5.9 MW) (105.6 dB) w Serrated Edges
											Evening	USER	Mode 0.a (5.9 MW) (105.6 dB) w Serrated Edges
											Night	USER	Mode 0.a (5.9 MW) (105.6 dB) w Serrated Edges
10	610,565.9	7,004,236.0	635.0	VESTAS V136-4.2-Tronde...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	Day	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Evening	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Night	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
11	610,621.9	7,004,524.9	639.0	VESTAS V136-4.2-Tronde...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	Day	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Evening	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Night	USER	V136 4.2 MW, Mode PO1, w Serrated Edges

To be continued on next page...

Project:
Stokkfjellet

Description:
Calculations based on the following files provided by the customer as used in the MTA plan (4.12.2018/01) Nord2000 calculations:
Terrain Elevation - Stokkfjellet_hoyde_stor_utm32.map
Roughness – ROUGHNESSLINE_Stokkfjellet_1.map
Terrain type (Hardness) – REGIONS_Nord2000_2.w2r

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data / data@meventus.com

Calculated:
13.02.2026 09:22/4.2.285

NORD2000 - Main Result

Calculation: 202602_L01D_9xN149_5.9MW_120mHH_StokkfjelletII_wExisting

...continued from previous page

					WTG type							Noise data		
	Easting	Northing	Z	Row data/Description	Valid	Manufact.	Type-generator	Power, rated	Rotor diameter	Hub height	Setting	Creator	Name
			[m]					[kW]	[m]	[m]			
12	610,653.2	7,004,850.0	632.9	VESTAS V136-4.2-Tronde...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	Day	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Evening	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Night	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
13	610,608.6	7,005,128.0	623.2	VESTAS V136-4.2-Tronde...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	Day	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Evening	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Night	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
14	610,656.8	7,005,416.9	613.7	VESTAS V136-4.2-Tronde...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	Day	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Evening	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Night	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
15	610,688.0	7,005,687.0	601.8	VESTAS V136-4.2-Tronde...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	Day	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Evening	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Night	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
16	610,316.0	7,002,427.1	700.7	VESTAS V136-4.2-Tronde...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	Day	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Evening	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Night	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
17	610,414.0	7,002,677.0	676.1	VESTAS V136-4.2-Tronde...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	Day	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Evening	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Night	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
18	610,136.4	7,003,015.9	660.0	VESTAS V136-4.2-Tronde...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	Day	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Evening	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Night	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
19	610,158.7	7,003,453.6	631.0	VESTAS V136-4.2-Tronde...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	Day	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Evening	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Night	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
20	610,228.9	7,003,758.1	626.7	VESTAS V136-4.2-Tronde...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	Day	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Evening	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Night	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
21	610,310.7	7,004,076.1	630.7	VESTAS V136-4.2-Tronde...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	Day	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Evening	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Night	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
22	610,724.0	7,002,717.0	671.8	VESTAS V136-4.2-Tronde...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	Day	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Evening	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Night	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
23	610,775.0	7,003,021.0	654.0	VESTAS V136-4.2-Tronde...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	Day	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Evening	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Night	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
24	610,830.0	7,003,321.9	642.0	VESTAS V136-4.2-Tronde...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	Day	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Evening	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Night	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
25	611,405.0	7,002,649.0	639.0	VESTAS V136-4.2-Tronde...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	Day	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Evening	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Night	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
26	612,213.0	7,002,408.0	596.0	VESTAS V136-4.2-Tronde...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	Day	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Evening	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Night	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
27	612,270.1	7,002,826.6	590.3	VESTAS V136-4.2-Tronde...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	Day	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Evening	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Night	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
28	610,188.5	7,001,628.1	666.2	VESTAS V136-4.2-Tronde...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	Day	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Evening	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Night	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
29	610,137.2	7,001,919.8	689.7	VESTAS V136-4.2-Tronde...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	Day	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Evening	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Night	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
30	610,171.9	7,002,188.0	698.3	VESTAS V136-4.2-Tronde...	Yes	VESTAS	V136-4.2-Tronder-4,200	4,200	136.0	112.0	Day	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Evening	USER	V136 4.2 MW, Mode PO1, w Serrated Edges
											Night	USER	V136 4.2 MW, Mode PO1, w Serrated Edges

Calculation Results

Sound level

Noise sensitive area					Demands	Sound level	Demands fulfilled?
No.	Name	Easting	Northing	Z [m]	Immission height [m]	Noise [dB(A)]	From WTGs [dB(A)]	Noise
A	Noise sensitive point: Norwegian - Yellow zone (466)	611,850.6	7,000,690.5	571.0	4.0	45	48	**No**
A	Day						42	
A	Evening						42	
A	Night						42	
B	Noise sensitive point: Norwegian - Yellow zone (467)	609,505.6	7,003,031.5	531.9	4.0	45	48	**No**
B	Day						41	
B	Evening						41	
B	Night						41	
C	Noise sensitive point: Norwegian - Yellow zone (468)	609,465.6	7,002,879.5	554.9	4.0	45	49	**No**
C	Day						42	
C	Evening						42	

To be continued on next page...

Project:
Stokkfjellet

Description:
Calculations based on the following files provided by the customer as used in the MTA plan (4.12.2018/01) Nord2000 calculations:
Terrain Elevation - Stokkfjellet_hoyde_stor_utm32.map
Roughness – ROUGHNESSLINE_Stokkfjellet_1.map
Terrain type (Hardness) – REGIONS_Nord2000_2.w2r

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Calculated:
13.02.2026 09:22/4.2.285

NORD2000 - Main Result

Calculation: 202602_L01D_9xN149_5.9MW_120mHH_StokkfjelletII_wExisting

...continued from previous page

Noise sensitive area						Demands	Sound level	Demands fulfilled?
No.	Name	Easting	Northing	Z [m]	Immission height [m]	Noise [dB(A)]	From WTGs [dB(A)]	Noise
C	Night						42	
D	Noise sensitive point: Norwegian - Yellow zone (469)	612,749.6	7,002,735.5	564.7	4.0	45	49	**No**
D	Day						42	
D	Evening						42	
D	Night						42	
E	Noise sensitive point: Norwegian - Yellow zone (470)	609,305.6	7,002,705.5	563.9	4.0	45	48	**No**
E	Day						41	
E	Evening						41	
E	Night						41	
F	Noise sensitive point: Norwegian - Yellow zone (471)	609,446.6	7,001,998.5	609.8	4.0	45	49	**No**
F	Day						42	
F	Evening						42	
F	Night						42	
G	Noise sensitive point: Norwegian - Yellow zone (472)	609,823.6	7,001,180.5	595.7	4.0	45	48	**No**
G	Day						41	
G	Evening						41	
G	Night						41	
H	Noise sensitive point: Norwegian - Yellow zone (473)	611,889.6	7,000,713.5	570.0	4.0	45	48	**No**
H	Day						42	
H	Evening						42	
H	Night						42	
I	Noise sensitive point: Norwegian - Yellow zone (474)	612,645.6	7,002,270.5	561.1	4.0	45	49	**No**
I	Day						43	
I	Evening						43	
I	Night						43	
J	Noise sensitive point: Norwegian - Yellow zone (475)	612,788.6	7,002,481.5	566.0	4.0	45	49	**No**
J	Day						43	
J	Evening						43	
J	Night						43	
L	Noise sensitive point: Norwegian - Yellow zone (477)	610,004.6	7,004,697.5	533.9	4.0	45	50	**No**
L	Day						43	
L	Evening						43	
L	Night						43	
M	Noise sensitive point: Norwegian - Yellow zone (478)	609,835.6	7,003,018.5	595.6	4.0	45	52	**No**
M	Day						46	
M	Evening						46	
M	Night						46	
N	Noise sensitive point: Norwegian - Yellow zone (479)	610,801.6	6,999,723.5	619.7	4.0	45	46	**No**
N	Day						39	
N	Evening						39	
N	Night						39	
O	Noise sensitive point: Norwegian - Yellow zone (480)	609,955.6	7,003,925.5	555.8	4.0	45	53	**No**
O	Day						47	
O	Evening						47	
O	Night						47	
P	Noise sensitive point: Norwegian - Yellow zone (481)	609,968.6	7,003,878.5	560.5	4.0	45	54	**No**
P	Day						47	
P	Evening						47	
P	Night						47	
Q	Noise sensitive point: Norwegian - Yellow zone (482)	609,353.6	7,001,475.5	554.2	4.0	45	47	**No**
Q	Day						40	
Q	Evening						40	
Q	Night						40	
R	Noise sensitive point: Norwegian - Yellow zone (483)	609,317.6	7,001,423.5	556.0	4.0	45	47	**No**
R	Day						41	
R	Evening						41	
R	Night						41	
S	Noise sensitive point: Norwegian - Yellow zone (484)	609,198.6	7,001,698.5	580.9	4.0	45	47	**No**
S	Day						40	
S	Evening						40	
S	Night						40	
T	Noise sensitive point: Norwegian - Yellow zone (485)	609,126.6	7,001,168.5	559.8	4.0	45	45	Yes
T	Day						39	
T	Evening						39	
T	Night						39	

To be continued on next page...

Project:
Stokkfjellet

Description:
Calculations based on the following files provided by the customer as used in the MTA plan (4.12.2018/01) Nord2000 calculations:
Terrain Elevation - Stokkfjellet_hoyde_stor_utm32.map
Roughness – ROUGHNESSLINE_Stokkfjellet_1.map
Terrain type (Hardness) – REGIONS_Nord2000_2.w2r

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Calculated:
13.02.2026 09:22/4.2.285

NORD2000 - Main Result

Calculation: 202602_L01D_9xN149_5.9MW_120mHH_StokkfjelletII_wExisting

...continued from previous page

Noise sensitive area						Demands	Sound level	Demands fulfilled?
No.	Name	Easting	Northing	Z [m]	Immission height [m]	Noise [dB(A)]	From WTGs [dB(A)]	Noise
U	Noise sensitive point: Norwegian - Yellow zone (486)	608,930.6	7,001,820.5	562.7	4.0	45	45	**No**
U	Day						39	
U	Evening						39	
U	Night						39	
V	Noise sensitive point: Norwegian - Yellow zone (487)	611,982.6	7,005,515.5	222.2	4.0	45	32	Yes
V	Day						26	
V	Evening						26	
V	Night						26	
W	Noise sensitive point: Norwegian - Yellow zone (488)	608,991.6	7,003,965.5	486.6	4.0	45	45	**No**
W	Day						39	
W	Evening						39	
W	Night						39	
X	Noise sensitive point: Norwegian - Yellow zone (489)	608,823.6	7,002,396.5	567.3	4.0	45	45	**No**
X	Day						39	
X	Evening						39	
X	Night						39	
Y	Noise sensitive point: Norwegian - Yellow zone (490)	612,173.6	7,004,963.5	215.7	4.0	45	38	Yes
Y	Day						31	
Y	Evening						31	
Y	Night						31	
Z	Noise sensitive point: Norwegian - Yellow zone (491)	609,074.6	7,000,829.5	560.0	4.0	45	45	Yes
Z	Day						38	
Z	Evening						38	
Z	Night						38	
AB	Noise sensitive point: Norwegian - Yellow zone (493)	609,177.6	7,000,286.5	554.2	4.0	45	43	Yes
AB	Day						36	
AB	Evening						36	
AB	Night						36	
AC	Noise sensitive point: Norwegian - Yellow zone (494)	608,985.6	7,000,500.5	556.3	4.0	45	44	Yes
AC	Day						37	
AC	Evening						37	
AC	Night						37	
AD	Noise sensitive point: Norwegian - Yellow zone (495)	612,413.6	7,004,781.5	223.2	4.0	45	41	Yes
AD	Day						35	
AD	Evening						35	
AD	Night						35	
AE	Noise sensitive point: Norwegian - Yellow zone (496)	609,067.6	7,000,186.5	573.8	4.0	45	43	Yes
AE	Day						36	
AE	Evening						36	
AE	Night						36	
AF	Noise sensitive point: Norwegian - Yellow zone (497)	609,059.6	7,000,064.5	576.0	4.0	45	42	Yes
AF	Day						36	
AF	Evening						36	
AF	Night						36	
AG	Noise sensitive point: Norwegian - Yellow zone (498)	612,360.6	7,005,923.5	213.0	4.0	45	40	Yes
AG	Day						34	
AG	Evening						34	
AG	Night						34	
AH	Noise sensitive point: Norwegian - Yellow zone (499)	612,719.6	7,004,583.5	200.4	4.0	45	38	Yes
AH	Day						32	
AH	Evening						32	
AH	Night						32	
AI	Noise sensitive point: Norwegian - Yellow zone (500)	610,959.9	7,004,224.6	553.1	4.0	45	53	**No**
AI	Day						47	
AI	Evening						47	
AI	Night						47	
AJ	Noise sensitive point: Norwegian - Yellow zone (501)	608,770.0	7,002,143.0	565.7	4.0	45	45	**No**
AJ	Day						39	
AJ	Evening						39	
AJ	Night						39	

Project:
Stokkfjellet

Description:
Calculations based on the following files provided by the customer as used in the MTA plan (4.12.2018/01) Nord2000 calculations:
Terrain Elevation - Stokkfjellet_hoyde_stor_utm32.map
Roughness – ROUGHNESSLINE_Stokkfjellet_1.map
Terrain type (Hardness) – REGIONS_Nord2000_2.w2r

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NORD2000 - Assumptions for NORD2000 calculation

Calculation: 202602_L01D_9xN149_5.9MW_120mHH_StokkfjelletII_wExisting

Assumptions

Calculation model	Norwegian noise, worst case
Weather stability	
Relative humidity	70.0 %
Air temperature	3.0 °C
Height for air temperature	100.0 m
Stability parameters	Night;Clear sky
Inverse Monin Obukhov length	0.0100
Temperature scale T*	0.0500
Terrain	
Elevation based on object	
Height Contours: Stokkfjellet_hoyde_stor_utm32.map (17)	
Roughness based on line object	
Roughness Lines: ROUGHNESSLINE_Stokkfjellet_1.map (18)	
Terrain type based on area object	
REGIONS_Nord2000_2.w2r (5)	
Month for calculation	January
Uniform terrain	
Wind speed criteria	
Uniform wind speed at 10 m agl.	
Wind speed (at hubheight)	Highest noise value
Wind direction	
Selected option	All receptors downwind of all wind turbines
Height above ground level, when no value in NSA object	4.0 m; Don't allow override of model height with height from NSA object
Uncertainty margin	0.0 dB; Uncertainty margin in NSA has priority
Wind speed has been extrapolated to calculation height using	IEC profile shear (z0 = 0.05m)
Use stability correction	
Version	
	6.005

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

Setup for Lden calculation

Variant	Name	From hour	To hour	Hours	Penalty [dB]	Days per year
1	Day	7	19	12	0	365
2	Evening	19	23	4	5	365
3	Night	23	7	8	10	365

WTG: NORDEX N149/5.9-Conf 5900 149.0 !O!
Noise: Mode 0.a (5.9 MW) (105.6 dB) w Serrated Edges

Source	Source/Date	Creator	Edited
F008_275a_A17_EN Revision 02, 2020-12-04	04.12.2020	USER	03.05.2022 14:32

Octave data

Wind speed (hh) [m/s]	LwA,ref [dB(A)]	63 [dB(A)]	125 [dB(A)]	250 [dB(A)]	500 [dB(A)]	1000 [dB(A)]	2000 [dB(A)]	4000 [dB(A)]	8000 [dB(A)]
8.0	105.6	87.3	93.5	97.2	99.8	100.5	98.0	90.4	82.4

Project:
Stokkfjellet

Description:
Calculations based on the following files provided by the customer as used in the MTA plan (4.12.2018/01) Nord2000 calculations:
Terrain Elevation - Stokkfjellet_hoyde_stor_utm32.map
Roughness – ROUGHNESSLINE_Stokkfjellet_1.map
Terrain type (Hardness) – REGIONS_Nord2000_2.w2r

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NORD2000 - Assumptions for NORD2000 calculation

Calculation: 202602_L01D_9xN149_5.9MW_120mHH_StokkfjelletII_wExisting
WTG: VESTAS V136-4.2-Tronder 4200 136.0 !O!
Noise: V136 4.2 MW, Mode PO1, w Serrated Edges

Source	Source/Date	Creator	Edited
DMS no.: 0067-4732_03	03.05.2018	USER	12.09.2018 13:52

		Octave data							
Wind speed (hh) [m/s]	LwA,ref [dB(A)]	63 [dB(A)]	125 [dB(A)]	250 [dB(A)]	500 [dB(A)]	1000 [dB(A)]	2000 [dB(A)]	4000 [dB(A)]	8000 [dB(A)]
18.0	103.9	85.6	92.8	97.2	98.9	97.9	94.2	87.8	78.7

NSA: Noise sensitive point: Norwegian - Yellow zone (466)-A
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (467)-B
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (468)-C
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (469)-D
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (470)-E
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (471)-F
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (472)-G
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (473)-H
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

Project:
Stokkfjellet

Description:
Calculations based on the following files provided by the customer as used in the MTA plan (4.12.2018/01) Nord2000 calculations:
Terrain Elevation - Stokkfjellet_hoyde_stor_utm32.map
Roughness – ROUGHNESSLINE_Stokkfjellet_1.map
Terrain type (Hardness) – REGIONS_Nord2000_2.w2r

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NORD2000 - Assumptions for NORD2000 calculation

Calculation: 202602_L01D_9xN149_5.9MW_120mHH_StokkfjelletII_wExisting

NSA: Noise sensitive point: Norwegian - Yellow zone (474)-I
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (475)-J
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (477)-L
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (478)-M
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (479)-N
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (480)-O
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (481)-P
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (482)-Q
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (483)-R
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (484)-S
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

Project:
Stokkfjellet

Description:
Calculations based on the following files provided by the customer as used in the MTA plan (4.12.2018/01) Nord2000 calculations:
Terrain Elevation - Stokkfjellet_hoyde_stor_utm32.map
Roughness – ROUGHNESSLINE_Stokkfjellet_1.map
Terrain type (Hardness) – REGIONS_Nord2000_2.w2r

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Calculated:
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NORD2000 - Assumptions for NORD2000 calculation

Calculation: 202602_L01D_9xN149_5.9MW_120mHH_StokkfjelletII_wExisting

NSA: Noise sensitive point: Norwegian - Yellow zone (485)-T
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (486)-U
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (487)-V
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (488)-W
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (489)-X
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (490)-Y
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (491)-Z
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (493)-AB
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (494)-AC
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (495)-AD
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

Project:
Stokkfjellet

Description:
Calculations based on the following files provided by the customer as used in the MTA plan (4.12.2018/01) Nord2000 calculations:
Terrain Elevation - Stokkfjellet_hoyde_stor_utm32.map
Roughness – ROUGHNESSLINE_Stokkfjellet_1.map
Terrain type (Hardness) – REGIONS_Nord2000_2.w2r

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Calculated:
13.02.2026 09:22/4.2.285

NORD2000 - Assumptions for NORD2000 calculation

Calculation: 202602_L01D_9xN149_5.9MW_120mHH_StokkfjelletII_wExisting

NSA: Noise sensitive point: Norwegian - Yellow zone (496)-AE
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

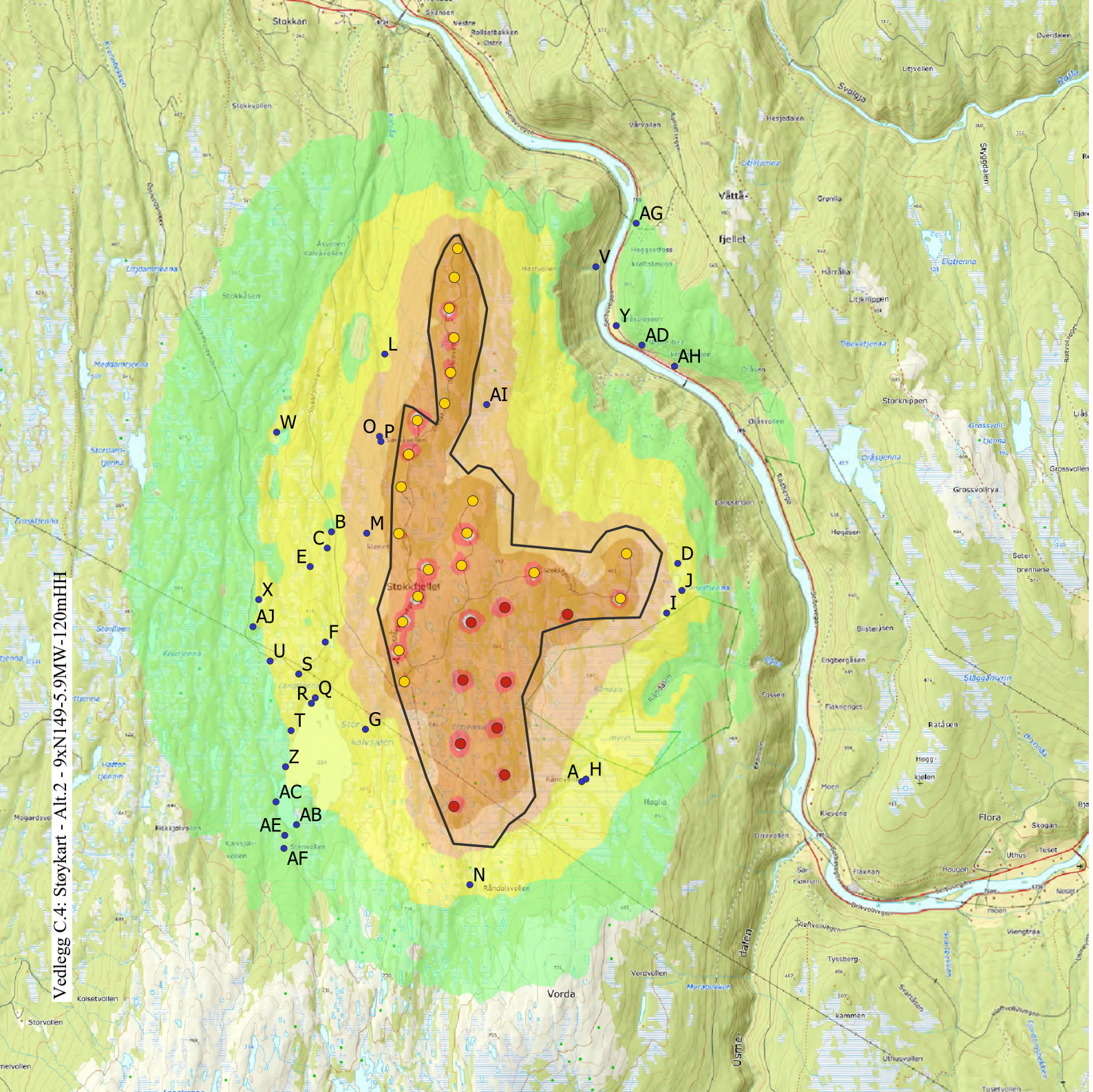
NSA: Noise sensitive point: Norwegian - Yellow zone (497)-AF
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (498)-AG
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (499)-AH
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (500)-AI
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (501)-AJ
Predefined calculation standard: Yellow zone
Immission height(a.g.l.): Use standard value from calculation model
Uncertainty margin: Use default value from calculation model
Noise demand: 45.0 dB(A)
Distance demand: 0.0 m



Vedlegg C.4: Støykart - Alt.2 - 9xN149-5.9MW-120mHH

Stokkfjellet II Wind Farm

- Wind turbines (Planned)
- Wind turbines (Existing)
- Neighbors
- Planning area

	dB (Lden)
	40-45
	45-50
	50-55
	55-60
	60-65
	> 65

Calculation settings

Software:	WindPRO v4.2.285
Model:	NORD2000
Calculation:	Worst case

Layout Information

Layout name:	L01d
Number of turbines:	9
Turbine type:	N149-5.9MW
Rotor diameter:	149 m
Rated Power:	5.9 MW
Hub height:	120 m
Total height:	194.5 m
Source Noise:	105.6 dB
Curtailment used:	No

Performed by: Meventus AS

Date: 13.02.2026

Meventus
Your partner in wind