

Guidelines for SWT test sites



NWTC

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Guidelines to select a SWT test site

IEC 61400-12-1 Appendix A&B

But if you do not want to *Start* with the rigor of
The Standard,

- Use the following guidelines
- Then note exceptions to the standard on test results

SWT test site –General

What size of SWT will be tested?

20 D_{rotor} is radius of interest

- AirX = 23m; ARE110 = 72m; Entegreity = 300m

SWT test site –Location

Wind

- High annual average wind speed
- Not high turbulence

Physical Access

- Easy & convenient to access
- Able to take time for inspection & repairs

SWT test site –terrain

1. Generally clear of obstructions; especially up wind
2. Space for met tower $2.5 D_{\text{rotor}}$ upwind
3. Mostly Flat: $< 5\%$ slope out to $10 D_{\text{rotor}}$
4. Other turbines $2 D_{\text{rotor}}$ away
5. Multiple turbine align perpendicular to prevailing wind

SWT test site –Legal

- Land ownership or long term agreement
- Zoning issues
- Height ordinance
- wildlife refuge or environmental concerns, need for NEPA study
- local zoning issues

SWT test site –Data

Data transmission capability

- Check data regularly
- Download from data logger
- Cell connection
- Internet

SWT test site –Data Shed on site

Not necessary, but nice to have

- Grid power & UPS to keep monitoring system available at all times
- Computer for data analysis
- Internet & phone
- storage for:
 - Climbing gear
 - Winch
 - Equipment
 - Spares
 - Books, Documentation, & **Test Logs**

SWT test site –Acoustic testing

- Minimal extraneous noise sources: highways, vegetation, birds, insects, people, other turbines, etc.
- Reflective sources; avoid structures near the microphone or down wind of turbine
- Need access to turbine in downwind position
- Avoid ridges/water in downwind position