

Back to the Basics

Wind-Site Problems and Logistics

A good wind-site assessment report should identify potential landmines.

By MICK SAGRILLO

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In the Nov./Dec. issue of *SOLAR TODAY*, I described the broad outlines of the report a good wind-site assessor will produce. Beyond that, the assessment report should go into specifics regarding problems that might be encountered in the construction phase. These are potential landmines for the installation. For example, where is the septic tank and field? You certainly do not want a backhoe excavating for a tower anchor in the leach field. Nor do you want a crane driving over the septic tank.

Other critical questions about the site include —

- What is the location of the well and any water lines?
- Is there an underground gas or LP line in the area?
- What about other underground services such as utility or phone lines?
- What's the soil type? Critical soils consisting of gravel or muck won't support a standard tower foundation.
- Does the property have a high water table, which might impact the foundation design?
- How deep is the bedrock on the property? This too may affect the foundation design.

Infrastructure issues include —

- What is the capacity of the electrical service? Is the circuit breaker box adequate?
- What about the utility transformer on the pole at the road? Is it adequately sized?
- Are there any plans for future buildings on the property?

Consider hazards to aviation, such as —

- Where are the nearest airstrips or heliports? Does the FAA need to be notified?
- Does anyone engage in aerial applications of pesticides on neighboring fields?

Zoning issues you should consider include —

- Are there any height restrictions in the township or county?
- What setback restrictions from roads or property lines would apply to the tower?

Keep utility interconnection issues in mind, such as —

- What are the local utility's regulations for interconnecting the system to the grid? Are there any turbine capacity limitations?
- Is there a requirement for a wind system disconnect switch? If so, is there a specified location for this disconnect?
- What are the insurance requirements of the utility?
- Will the insurance company insure the system without charging a substantial premium?

Siting logistics you'll want to think about include —

- Where is the proposed wire run to terminate?
- Will bedrock or buried water, gas, phone or electric lines interfere with the wire run?

- Is there a secure and environmentally conditioned location for the balance-of-system components (e.g., controls and inverter) that has an adequate circuit-breaker box? Is there adequate space for all such components?
- Can the wire run be minimized by siting the turbine close to the controls and inverter without compromising the wind resource or creating more turbulence due to ground clutter?
- Is there an elevated area on the property that is relatively close to the location of the balance-of-system components that can be utilized to optimize the wind resource?
- Where are the site obstacles and trees relative to the prevailing wind directions? It is important to site the tower upwind of such obstacles to maximize wind speed and minimize turbulence.
- What is the distance and mature height of the trees in the area (which are usually the tallest obstacles that must be overcome by the tower)? Plan for mature tree height 20 to 30 years into the future, not today's tree height.
- What is the planned future use for the location of the tower? Are there any activities or planned structures that will either interfere with the installation or with accessing the tower for future maintenance and repair work?
- Are there any overhead power lines that could pose a danger during installation or while workers and service personnel are on the tower?

Installation logistics to consider —

- If the tower style chosen is guyed, is there adequate room for the guy cables?
- If a tilt-up tower will be installed, is there sufficient space to lower the tower to the ground, and possibly leave it in that position for periods of time?
- Can a concrete truck access the site to pour the foundation?
- Will a crane be able to access the location to set the tower and turbine in place?
- Will either of these heavy pieces of equipment need to drive over the septic tank or field? Is there other infrastructure that could be damaged by heavy weight?

Food for Thought

It may take awhile to read and digest the assessment report. Don't procrastinate — read it, and then read it again. The assessor may put a score of hours into preparing the report. There's a lot of valuable information there, so make sure you read it thoroughly. You will probably have questions. Be sure to contact the assessor for answers in a timely manner. The fresher the visit and report are in everyone's head, the more valuable the entire effort will be. 57



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A good wind-site assessment report will address potential obstacles your turbine installation might encounter.