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SMALL TURBINE COLUMN:

Questions Any Wind Installer Should Be Able To Answer

by Mick Sagrillo

Last month, I laid out a series of questions that any wind turbine manufacturer should be able to answer about their products. This month we'll look at similar questions, but focused on wind installers.

The advent of state public benefits programs funding renewable energy projects, including wind, has spurred explosive growth in every aspect of the renewables sector: manufacturers, online purveyors of equipment, and system installers. The question that arises, then, is: How exactly does one screen out the fly-by-night company who pops up to make a quick buck from the company or person who will do a good job for you?

As with wind turbine manufacturers and their products, turbine installers' promises and price invariably make poor screening tools. Are you interested in the cheapest quote or a wind installation that will provide you with reliable electricity for the next 20-30 years? These two paths are usually mutually exclusive.

So, if you are not going to shop based on price, how do you compare one installer to another? Again, as is recommended when identifying wind turbine manufacturers, my suggestion is to begin by interviewing prospective installers about their company, the work they do, their product choices, and their experience. Some of the questions that I think any wind installer should be able to answer, regardless of the manufacturers they represent or turbines they sell, include the following, with comments in italics:

- How long has your company been in business? *As with manufacturers, expect some exaggeration on this answer that includes when they first printed up business cards, long before they ever cranked a tower bolt. That's not important at this time.*
- How many systems similar in size to the one I want have you installed? How many such systems have you installed in the last few years? *Again, like years in business, quantity may not be important. One good wind installation two years ago is far superior to a dozen fiascos that went in last month.*

- Can you provide references and contact information from a few satisfied customers? Can you provide references and contact information from a few dissatisfied customers? *Several points here. First of all, do not expect references from dissatisfied customers—no business does that. What you are looking for is their reaction to the question.*

Once you have the references, be sure to call them. You will not be bothering these folks. Far from it. People with wind turbines seem to like to talk to others about their systems. One caution about the references however: make sure that the person you are calling is not just a “shill” for the company—that is, someone who has a relationship with the installer and who is compensated in some way for giving a good review.

- How long will this installation take? *Once the equipment has been delivered, expect the foundation to go in, followed by a month to allow the concrete to adequately cure before the tower is set on the foundation.*

But you also may need to be realistic in your expectations. I’ve been installing wind turbines for customers for over 28 years, seventeen when I owned a wind company, and now for prospective owners willing to host wind installation workshops. Problems can and will arise. There are few installations that go “perfectly.” There are simply too many skills, technologies, and companies involved in the manufacture, delivery, and installation of a wind system to have everything under control all the time.

Remember that any special requests or changes of equipment will delay delivery, sometimes significantly. Try to be understanding about this.

- When can you start the project? *The answer may be tough to accept because all of us want attention immediately if not sooner. You may need to be really, really patient. While good installers are usually busy, that does not mean that an installer available immediately is not worth hiring. There are just too many variables to jump to such a conclusion. What time of year is it? What other construction projects are going on? Does the manufacturer have a six-month lead time for the turbine or tower, or are they sitting on the shelf ready to ship?*
- Does your company perform all of the work, or do you subcontract work out to other companies? If you subcontract work, what work will this be and who are the other subcontractors or companies? *Companies are increasingly beginning to subcontract out some of the work, especially the concrete foundations.*
- Does the installation estimate include all costs, or are there other costs that are not listed that I will be responsible for? *Don’t laugh—I know of homeowners who were billed over and above the “turnkey” installation cost for such things as the crane, excavation, shipping, and concrete. All of the following items should be included in an installation estimate, but confirm these.*

- *Shipping*

- *Excavation and backfilling*
- *Concrete and rebar*
- *Possibly a fork lift for equipment assembly*
- *Tower assembly*
- *Turbine assembly*
- *Trenching for the wire run*
- *Wire, conduit, and all electrical supplies for the wire run*
- *Tower wiring and junction box*
- *Crane to lift and set the tower and turbine*
- *Possibly an electrician to do some or all of the electrical work*
- *Electrical components for the inverter and utility interconnection*
- *All labor*
- *Mileage and expenses*
- *Sales tax*

The one exception to this list is repair of any damage to your lawn that was caused by heavy equipment—the backhoe, concrete truck, or crane. The company you are hiring is a wind installation company, not a landscaping firm. Be realistic and reasonable—no one has any control over the ruts in your lawn. It will be far cheaper for you to deal with this on your own than to expect the wind installation company to provide such a service.

Note that the estimate will be for a total installation price. It is not reasonable to expect the estimate to be itemized for all of the above individual costs.

- *What warranty do you provide for the installation? While manufacturers' warranties usually run from one to five years, people rarely ask about the warranty on the installation. This essentially consists of workmanship—that is, assuring that the turbine, tower, tower wiring and wire run, inverter, electrical, and foundation(if this was not farmed out) have all been installed correctly and that the installer will make good on any problems that crop up after the installation. The installation warranty need not be for a long time. One year is usually adequate for any installation related problems to crop up if they are going to arise at all. Note that the installation warranty is meant to cover labor and not necessarily such things as electrical wiring and conduit, hardware, or other materials purchased from the turbine or tower manufacturer and other suppliers. These materials should be covered by warranties from the appropriate supplier.*
- *Do you offer maintenance and repair services? This is one of the most important reasons to hire an installer in the first place—you will need a person familiar with the equipment and installation for the 20-30 year life of your wind system. Be very wary of any company that responds that they only do installations—this essentially means that, not only do you not have an installation warranty regardless of what the installer says during the sales pitch, but that you are on your own when it comes time for annual inspections and maintenance, as well as for any service or repairs that are needed over the life of the system.*

- Will you train me or my family as to the proper operation and shutdown of the system? *This is critical—not understanding how the system operates can result in some family member doing something that will possibly void your equipment warranty.*
- What payment schedule do you require in your contract? *Typical payments run something like 50-25-25—50% down when the contract is signed in order to place an equipment order, 25% upon delivery of the turbine and tower, and the remaining 25% after the system has been successfully installed and is operating. You can probably expect some variation of the above, as this is about the approximate cost breakdown for the various components and labor for a wind installation, give or take 10% or so. Therefore, do not get involved with a company that requires 80% to 90% up front—you have no leverage over such an installer to actually get the installation completed or operating properly.*
- Will you work with local building permit officials and/or inspectors to secure the required building or zoning permits? *This is not a given. In fact, most homeowners will do this job themselves simply to save money, which is fine. You need to realize that a protracted zoning permit process can and sometimes does drag out for a year. Because of the great unknown that this process represents, I know of few installers, and only for the largest of small turbine installations, that take on the building permit responsibility without some sort of separate retainer or fee. Zoning and building permits can be a black hole that is out of the installer’s control and therefore a time sink. If you wish the installer to take this task on, be prepared to pay for the service.*
- If you do not or will not secure the building permits, will you supply the required documentation for the wind turbine, tower, foundation, and wiring and interconnection diagrams so that I can apply for the permits? *This is a reasonable request, as no building or zoning authority will issue you a permit without some idea and documentation of what you are intending to construct.*
- Will you work with the local utility on the interconnection requirements and application? *As with the building permit process, you can expect the installer to charge for this service. Unlike the building or zoning permit, however, the utility may require technical documentation of the wind system that only the installer or manufacturer can provide, especially assurances that the system will shut down in the event of a power outage. This job is best left to the installer, but again, you may have to pay for this service on a “time and materials” basis.*
- Do you retain the services of a master electrician for the electrical work? *The need for an electrician is really dependent on the local electrical code. In Wisconsin where I live, this is not a requirement anywhere in the state except in urban or suburban locales. Other states, Colorado for example, require that a master electrician do all of the wiring on the system regardless of the location—even on the Great Plains where the nearest neighbor is 20 miles away. Different state, different requirements. Find out the requirements in your area so that you have a system that will pass an electrical inspection, should one be required.*
- Have you ever been sued? *Again, don’t laugh about broaching the subject. What you are interested in is the tone of the response rather than the actual answer. In 28 years of doing wind installations, I have twice been threatened with a lawsuit*

by owners, neither of which went anywhere. Both were a ploy on the part of the other party to get out from some financial responsibility, and I have no qualms about explaining this.

It also does not hurt to do a Web search on the companies you are considering. Make sure you also check with the Better Business Bureau or state division of consumer protection for any complaints that have been filed. Keep in mind that it takes two to make a relationship, and even though you may unearth a complaint, it may have been filed by a customer who would not be satisfied even if the installation was given to them for free.

The answers to these questions should give you a pretty good idea of the capabilities and competencies of the companies you are considering to install your wind system. Don't be surprised by what you discover, and don't jump to conclusions. If a firm two hours away gives far better answers than one 10 miles away, by all means, hire the better company and not the local one. Remember, you are going to need to rely on these folks for the 20-30-year life of the system, and the last thing you need is someone with a short attention span or who is learning the job on your dime. I often rely more on the installer's attitude than their answers, although both are equally important.

And be reasonable. Few companies are experts or completely experienced in all aspects of small wind—there are simply too many new innovations, tower styles, and tower heights for any one company to have done one of everything. What you are looking for is a company with enough experience to be able to think on its feet through any problems with the installation that it will invariably encounter on any given job.

Also remember that while you are screening the installers, they are also screening you. What installers are keeping a watchful eye out for are people with unreasonable expectations, or customers who may be demanding as to deadlines that could end up not being met for reasons out of the control of the installer, such as equipment delays, items lost in shipping, or back-ordered components. The customer who is overly demanding or insistent on saving a dime on every line item will be without of a contractor in short order.

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