

# North American Certification for Small Wind Turbines:

*The Case for Funding Consumer-Friendly Performance Ratings for Homes, Farms & Businesses*  
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Establishing small wind turbine consumer ratings will facilitate the growth of wind power as a source of clean renewable energy. Funding a certification program is critical in aiding this under-financed residential and farm-scale wind market segment in maturing. This "Case Statement" describes a critical gap in the small wind marketplace and why North American manufacturers need support in advancing a tailored certification program.

Small wind turbines have great potential to serve increasing demands for distributed generation, providing cost-effective electricity for many farms, schools and other end-users. Small wind turbines offer increased security of energy supply as well as community awareness of clean energy options. However, several obstacles have hindered greater use, including:

- Performance specifications are not standardized, and manufacturer reports are optimistic and inconsistent.
- Consumers do not have user-friendly tools to compare turbines or accurately estimate energy performance.
- Consumers and incentive managers need greater assurance of safety, functionality, and durability to justify investments.

Small turbine ratings, on which most incentives are based, vary by as much as 40%. The most effective approach to surmounting these hurdles is through a certification process with easy-to-understand labels allowing consumers to make "apples-to-apples" comparisons of different small wind turbines. While certification processes are in place for large wind turbines (through IEC, GL, UL etc.), the nascent status of the small wind market means that an affordable option is not yet available for small turbine manufacturers.

## **The Solution**

The Small Wind Certification Council (SWCC), as an independent certification body, will certify that small wind turbines meet or exceed performance, durability, and safety requirements. This certification will provide a

common standard for reporting turbine energy and sound performance, helping small wind technology gain mainstream acceptance.

SWCC will issue certified turbines easy-to-understand labels for "SWCC Rated Annual Energy Output," "SWCC Rated Power," and "SWCC Rated Sound Level," similar to EPA mile-per-gallon ratings. The label will also confirm the turbine meets durability and safety requirements. SWCC's web directory will include Power Curves, Annual Energy Performance Curves and measured sound levels for each model certified.

As part of its certifying function, SWCC will determine the testing requirements. SWCC will not conduct tests, but will verify and certify test results submitted by others.

With certification labels, consumers can compare products and funding agencies and utilities will gain greater confidence that small turbines installed with public assistance are safe and perform as expected. Certification can help prevent unethical marketing and false claims, thereby ensuring consumer protection and industry credibility.

## **The Need for Small Wind Certification**

- The North American economy stands to benefit considerably from increasing the competitiveness of U.S. and Canadian wind turbine manufacturers. Establishing rating labels will increase the marketability of North American-manufactured small wind turbines, help drive down the cost of on-site wind-generated electricity, and create local jobs in installation and maintenance, with a positive effect on the economic attractiveness of rural communities.
- Government agencies and utilities will directly benefit from implementation of consistent turbine hardware performance ratings for use in incentive programs.
- Certification is essential for industry credibility and leveraging incentive funds.

- Certification can level the playing field between turbines, specifically with rated power and annual production claims.

A survey of small wind turbine manufacturers, state agencies and utilities conducted in September 2006 reinforced the pressing need for small wind turbine certification and its role in building consumer confidence, finding that:

- 89% of manufacturers said certification is important to their business, with 33% indicating certification is critical, essential or required to reach the mainstream.
- 27 suppliers targeting the North American market expect to submit up to 70 certification applications within two years. 15 states plan to or may require certification for small wind incentives.

Implementation of consistent turbine hardware performance testing standards will considerably aid the small wind industry in maturing to move the market from 'early-adopters' to 'mass-production' and truly reach the mainstream.

#### **Funds Required for SWCC Start-up**

Grants and contracts have funded the work thus far. The initial funders recognized that the SWCC will benefit their constituents and have offered support for organizational start-up. Manufacturer fees to certify turbines are expected to cover 23% of SWCC's expenses in the first year of operation, increasing to 100% of operational expenses in Year 5, eliminating the need for future grants.

However, the fledgling industry alone is not able to finance SWCC's launch, which will require additional funding to complete organizational development and begin to review certification applications.

SWCC needs to secure an additional \$75,000 by Fall 2007 and another \$275,000 by early 2008 for startup costs in order to begin accepting certification applications. A comprehensive plan is in place to secure the remaining budget. One-time sponsorships ranging from \$10,000 to \$125,000 are requested to fill our remaining financing needs. For more information, please contact Larry Sherwood at [larry@sherwoodassociates.com](mailto:larry@sherwoodassociates.com).

Dozens of organizations have provided in-kind support, and more than \$185,000 of direct funding has been committed to date by:

- Nevada State Office of Energy
- New York State Energy Research and Development Authority
- Energy Trust of Oregon
- Wisconsin Division of Administration
- Canadian Wind Energy Association (with funds from Natural Resources Canada)
- Casper College, Wyoming
- Iowa Energy Center

#### **Small Wind Certification Working Group**

##### *Manufacturer Members:*

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