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First Turbines Awarded Conditional Temporary Certification Field testing complete or nearly complete for several small wind turbine models

The Small Wind Certification Council (SWCC) has granted “Conditional Temporary Certification” to three turbine models, as more turbines near completion of the field testing phase of the certification process. SWCC expects to certify up to nine turbines by December 31, 2011.

SWCC Conditional Temporary Certification status indicates the turbine has been tested and certified under the UK’s Microgeneration Certification Scheme, but certain requirements of the American Wind Energy Association (AWEA) [Small Wind Turbine Performance and Safety Standard](#) have not been met. The Applicant may also need to satisfy additional requirements within the 18-month Conditional Certification period to be eligible for full SWCC Certification and consumer labels with ratings.

To increase transparency and public disclosure of key milestones in the process, SWCC is now reporting when its pending applicants are “Under Test” and have submitted test and analysis reports for review. [SWCC’s website](#) reports the dates that seven wind turbine models, in addition to the three with Conditional Temporary Certification, achieved “Under Test” status. An additional 16 wind turbine models are currently “Under Contract” with an executed Agreement pursuing certification by SWCC.

Recognizing that small wind incentives are often based on power performance ratings and estimates, SWCC’s Board of Directors approved offering a new optional service to applicants of “Limited Power Performance Certification” for small wind turbine models that have completed power performance testing in accordance with SWCC and AWEA Standard requirements. While power performance field testing can be completed relatively quickly, the time required for duration testing can result in a lengthy process. If full SWCC certification is not granted within an 18-month period, the limited certification of the turbine’s power curve and annual estimated production terminates.

The growth of small wind is often tied to incentives, and agencies and utilities providing funding for small wind systems are asking for greater assurance of safety and functionality to justify their investments. Two programs are currently on hold as they re-examine production and safety issues.

The California Energy Commission (CEC) also saw a big surge of interest in small wind and received 314 applications in the past year, about six times the state’s previous annual small wind installation rate. However, about 85% of the requests totaling \$6.7 million were for rebate amounts close or equal to the total installed cost of the systems. Realizing that consumers and installers had little interest in

verifying systems would generate enough electricity to provide benefit, the CEC recently announced a “time out” to get the program back on track.

Recent equipment failures and malfunctions in New Jersey also led to a temporary freeze of its rebates for small wind turbines this spring, although the state’s Board of Public Utilities has now lifted the hold on nine models after collecting additional documentation on each manufacturer’s field experience.

The suspension California’s program, the nation’s longest-running small wind incentive, has affected the entire industry. Basing incentive levels on certified power performance ratings – and setting a cap on the portion of system costs that rebates offset – can avert such problems and prevent “free” turbine sales. SWCC is actively working with the CEC as well as the U.S. Department of Agriculture, Massachusetts, and several other state programs to incorporate certification requirements into small wind turbine funding programs to establish consistency in turbine ratings.

Other state programs are either moving toward or are requiring certification to be eligible for incentives. New York State Energy Research and Development Authority (NYSERDA) requires certification either by SWCC or other independent certifying agency, an EN45011 accredited international organization, or a Nationally Recognized Testing Laboratory for turbines not already on their approved list to qualify for rebates. Both NYSEDA and the CEC have seen record numbers of applicants in the past year. Numerous other state and utility programs rely on the NYSEDA list to qualify small wind turbines for incentives.

Programs in Oregon and Wisconsin have set a deadline of January 1, 2012 for turbines to be certified to be eligible for incentives. The Massachusetts Clean Energy Center now requires either SWCC certification or NYSEDA qualification. Programs in California, Colorado, Iowa, Maine, Maryland, Minnesota, Nevada, and Vermont have indicated their intention to follow suit.

SWCC’s Incentives webpage provides further background about eligibility criteria and direct links to several programs requiring or expecting to require certification. SWCC has developed options for agencies and utilities to consider for incorporating certification requirements and structuring incentives, including suggestions for wind turbines with a swept area of more than 200 m² and therefore outside the scope of the AWEA Standard.

SWCC certification is an independent confirmation that a small wind turbine has been tested and designed according to the requirements of the AWEA Standard. More information on the certification process is attached, or visit www.smallwindcertification.org. SWCC updates the [application status](#) table on its website as milestones are reached.

A complete list of turbine models pending application is included in the attached media guide and available at www.smallwindcertification.org.

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MEDIA BACKGROUND INFORMATION

SWCC has pending applications from the following turbines:

Applicant	Turbine	Under Contract ¹	Under Test ²	Reports Submitted ³	Certification Granted ⁴	Certification Number ⁵
American Zephyr Corp.	Airdolphin GTO	5/20/10	2/12/10			Application Pending
Bergey Windpower Co.	Bergey 5kW	5/27/10				Application Pending
Bergey Windpower Co.	Bergey Excel-S	6/15/10	6/24/10			Application Pending
BRI Energy Solutions, Ltd.	Vbine 10-05	1/31/11				Application Pending
Endurance Wind Power	Endurance S-343	6/7/10				Application Pending
Enertech, Inc.	Enertech E13	9/27/10				Application Pending
Evance Wind Turbines Ltd.	Evance R9000	8/13/10	Certified Under MCS		5/13/11 Conditional Temporary Certification	SWCC-10-27
Eveready Diversified Products (Pty) Ltd.	Kestrel e400i 3kW 250V	6/18/10				Application Pending
Eveready Diversified Products (Pty) Ltd.	Kestrel e400i 3kW 48Vdc	6/18/10				Application Pending
Evoco Energy	Evoco 10kW	2/14/11	Certified Under MCS		5/5/11 Conditional Temporary Certification	SWCC-11-01
Gaia Wind Ltd.	GW 133 - 11kW	12/20/10	Certified Under MCS			Application Pending
Polaris America LLC	P15-50	10/15/10				Application Pending
Polaris America LLC	P10-20	11/19/10				Application Pending
Potencia Industrial S.A.	10kW Hummingbird	9/23/10				Application Pending
Renewegy, LLC	Renewegy VP-20	5/25/10				Application Pending
Seaforth Energy	AOC 15/50	6/16/10				Application Pending
Southwest Windpower	Skystream 3.7	6/7/10	Certified Under MCS		5/13/11 Conditional Temporary Certification	SWCC-10-20
Taisei Techno Co.	TTK-10kW	10/20/10				Application Pending
Talk, Inc.	Suelflow 100	2/8/11				Application Pending
Urban Green Energy	UGE-1K	11/30/10				Application Pending
Urban Green Energy	UGE-4K	11/30/10				Application Pending
UrWind Inc.	UrWind O2	6/15/10	12/13/10			Application Pending
Ventera Energy Corp.	Ventera VT10	6/11/10	7/14/10			Application Pending
Windspire Energy	Windspire - 800040	6/4/10				Application Pending
Xzeres Wind Corporation	Xzeres-442SR	6/3/10	Certified Under MCS			Application Pending

¹ **“Under Contract”** is the date that the Applicant executed a Certification Agreement with the SWCC.

² **“Under Test”** is the date that the small wind turbine began collecting data at the test site after completion of installation, commissioning and instrumentation. **“Certified Under MCS”** indicates that the product is listed under the UK’s [Microgeneration Certification Scheme](#) but SWCC has not yet conducted a review of data collected.

³ **“Reports Submitted”** is the date that the Applicant submitted a complete Test and Analysis Report to the SWCC with a Certification Application.

⁴ **“Conditional Temporary Certification”** indicates that SWCC has granted this certification as defined in Section F4 of the [SWCC Certification Policy](#). NOTE: SWCC labels, certificates and summary reports are pending for such turbines until Conditional Temporary Certifications become full Certifications.

⁵ **“Application Pending”** designates that a company has submitted a complete [Notice of Intent to Submit an Application \(NOI\)](#), [Configuration Description form](#), [Preliminary Review Fee](#) and has signed a customized [Certification Agreement](#) with the SWCC confirming plans for testing and analysis.

What is SWCC Certification?

The SWCC certification is an independent, third-party verification that a small wind turbine meets the requirements of the AWEA Standard, *AWEA 9.1 - 2009 Small Wind Turbine Performance and Safety Standard*. The AWEA Standard incorporates, with modifications, existing International Electrotechnical Commission (IEC) standards for small wind turbines. The certification is available for turbines with a swept area up to 200 square meters (approximately 2,150 square feet or 50-65 kW).

The SWCC certification process includes both field testing and structural analysis of the wind turbine. Tests must be conducted according to the AWEA Standard and SWCC policies. Turbines must be tested at actual sites in “free air” - wind tunnel testing is not permitted under AWEA or IEC small wind turbine standards. Testing a small wind turbine to the requirements of the AWEA standard can be expected to take at least 6 months, depending on the wind regime in which the test facility is located. Testing and reporting may take as much as 1 or 2 years to complete. The structural analysis of the wind turbine can be performed in parallel with the field-testing. Structural design consultants and testing organizations described below provide resources to applicants as they pursue certification.

Who Conducts Strength Analysis?

The AWEA Standard requires the mechanical strength of the turbine system to be assessed using either the simple equations or aeroelastic modeling methods in IEC 61400-2. This strength analysis is typically performed by the manufacturer in conjunction with an engineer. SWCC has recently assembled a [list of small wind turbine structural design consultants](#) who may be able to assist manufacturers with this portion of turbine certification. The list is not an endorsement of any organization and may not be all-inclusive.

Who Conducts Testing?

SWCC accepts tests from different test sites. Some testing organizations, such as the [National Renewable Energy Laboratory \(NREL\)](#), are accredited to perform power performance, duration and acoustic testing to recognized standards. Test reports from accredited organizations will require the minimum level of scrutiny from the SWCC. Testing performed by non-accredited organizations will require on-site audits and a higher level of scrutiny to independently verify the test setup complies with the standard, the competence of the organization, and the quality of the test reports.

A number of different testing organizations will test the turbines with pending SWCC applications. SWCC has posted a [list of potential test organizations](#) (not an endorsement; may not be all-inclusive) that wish to test small wind turbines for the North American market.

The U.S. Department of Energy, the New York State Energy Research and Development Authority, and other sponsors have provided financial assistance to SWCC to aid start-up of the small wind turbine certification program. A list of all [funders is on the SWCC website](#).

Who Uses Certification?

In a 2006 SWCC poll, numerous state and utility incentive program managers indicated that certification could help expand their programs for small wind turbines. More than half of the states, utilities, and funding agencies with existing requirements for small wind turbines who responded to

the SWCC survey indicated that they expect to use certification to supplement or replace their existing procedures.

Currently, several states, including Colorado, rely on the NYSERDA list to qualify small wind turbines for incentive programs. NYSERDA itself now requires certification either by SWCC or other independent certifying agency, an EN45011 accredited international organization, or a Nationally Recognized Testing Laboratory for wind turbines that are not already on their approved list to qualify for rebates.

As more turbines become certified, program managers for those incentives plan on simplifying the qualification procedures by adopting SWCC certification as a means for eligibility.

Wisconsin's Focus on Energy has joined with Energy Trust of Oregon in leading the way to require certification for small wind turbines to qualify for incentives beginning January 1, 2012. Energy Trust of Oregon recently revised its eligibility and will end its internal review process and require certification from an independent certification body such as the SWCC for incentives as of January 1, 2012. The Massachusetts Clean Energy Center (MassCEC) currently requires certification by SWCC or NYSERDA qualification, and intends to rely primarily on the SWCC certified turbine list in the future.

"Vermont looks forward to incorporating the SWCC's certification process into the state Incentive Program," notes Gabrielle Stebbins, Program Administrator for the Vermont Renewable Energy Incentive Program. "Improving the reliability of performance estimates is a significant step towards increasing customer adoption of wind technology."

[The Database for State Incentives for Renewables and Efficiency \(DSIRE\) Database](#) has current information on dozens of state and utility policies for small wind incentive programs, and [SWCC's website provides direct links](#) to several expecting to require certification.

What is the SWCC Application Process?

The 25 applicants listed above have initiated SWCC certification review by submitting of a [Notice of Intent to Submit an Application](#), which includes the details of the wind turbine and proposed test plans. These include the submission of a Configuration Description form and a Preliminary Review Fee. Based on the information provided, SWCC develops a customized Certification Agreement between the applicant and SWCC confirming requirements for testing, analysis, and other details of the certification process.

To complete the certification application, turbines must provide complete results of testing. Certification applicants may choose to use an accredited or non-accredited laboratory or to conduct the testing themselves. Non-accredited testing organizations are required to sign a testing agreement with the SWCC, agreeing to perform appropriate tests on the turbine to be certified and agreeing to the test plans and SWCC test site evaluation.

The process of completing SWCC certification will depend on the quality of the test reports and level of issue resolution required. SWCC certification is expected to take approximately 2 to 4 months once test reports and an application is received. Once a product has been certified, SWCC will issue a summary report, which will contain the rated annual energy, rated power, rated sound level, and other technical

information. The report will also note that the turbine model meets the durability and safety requirements of the AWEA Standard.

Upcoming Events

Small Wind Installers Conference, June 14-15, 2011, Stevens Point, WI

AWEA Small & Community Windpower Conference & Exhibition, September 15-17, 2011, Des Moines, IA

Links and References

SWCC list of pending applications: www.smallwindcertification.org/certified_turbines.html

Small Wind Turbine Performance and Safety Standard: www.smallwindcertification.org/standard.html

New York State Energy Research and Development Authority (NYSERDA):
www.nyserda.org/Funding/1098pon.asp

Massachusetts Clean Energy Center (MassCEC): www.masscec.com/microwind

Discussion of SWCC requirement: <http://www.masscec.com/masscec/file/CWIPMS-03-Solicitation.pdf>

Energy Trust of Oregon: <http://energytrust.org/shared-resources/info/small-wind-turbines.aspx?src=residential>

Focus on Energy (Wisconsin): http://www.focusonenergy.com/files/document_management_system/renewables/windincentive_policy.pdf

Direct links to other small wind incentive programs requiring or expecting to require certification:
<http://www.smallwindcertification.org/incentives.html>

The Database for State Incentives for Renewables and Efficiency (DSIRE) Database: www.dsireusa.org/

National Renewable Energy Laboratory (NREL) Small Wind Independent Testing:
http://www.nrel.gov/wind/smallwind/independent_testing.html

Potential test organizations: http://smallwindcertification.org/pdfs/small_wind_test_orgs_SWCC.pdf

Structural design consultants: http://www.smallwindcertification.org/pdfs/SWT_design_contacts.pdf

SWCC Policies: <http://www.smallwindcertification.org/policies.html>

SWCC Frequently Asked Questions: <http://www.smallwindcertification.org/faq.html>

About Us

The Small Wind Certification Council (SWCC), an independent certification body, certifies that small wind turbines meet or exceed the requirements of the AWEA Small Wind Turbine Performance and Safety Standard. This certification provides a common North American standard for reporting turbine energy and sound performance, and helps small wind technology gain mainstream acceptance. For more information see www.smallwindcertification.org or call 518-213-9440.