

SMALL WIND CERTIFICATION COUNCIL

Small Wind Turbine Certification Policy



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Contents

Acknowledgements.....	2
A. Introduction.....	3
B. Purpose and Scope.....	3
C. Definitions.....	4
D. Policy Abbreviations.....	5
E. Certification Commission.....	5
F. Certification Eligibility Requirements.....	6
G. Certification Fees.....	8
H. Application Requirements.....	9
I. Qualified Testing Organizations.....	10
J. Test and Analysis Report Requirements.....	11
K. Labeling/Certificate.....	16
L. Certification Maintenance, Renewal, and Conditions.....	16
M. Confidentiality of Applications/Conflict of Interest.....	17
N. Certification Holder Deficiencies, Violations, and Sanctions.....	17
O. Deficiency and Violation Decision Appeals.....	19
Annex A: SWCC Certificate Format.....	20
Annex B: Notice of Intent to Submit an Application Format.....	22
Annex C: Certification Process Summary.....	24
Annex D: References.....	26
Annex E: Certification Fee Schedule.....	27

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A. Introduction

The Small Wind Certification Council (SWCC) was established as an independent, third-party certification body in order to properly certify that small wind turbines (SWT or turbines) meet the requirements of the AWEA *Small Wind Turbine Performance and Safety Standard* (AWEA Standard).

SWCC Certification is based on the evaluation of both a wind turbine structural analysis and field testing. Field testing includes a power performance test, acoustic sound test, safety and function test, and duration test. The results of such field testing and structural analysis are documented in a final report, which is submitted to SWCC for review. SWCC Certification is granted on the basis of an assessment of the completeness and correctness of the final report, and whether the SWT conforms to all requirements of the AWEA Standard.

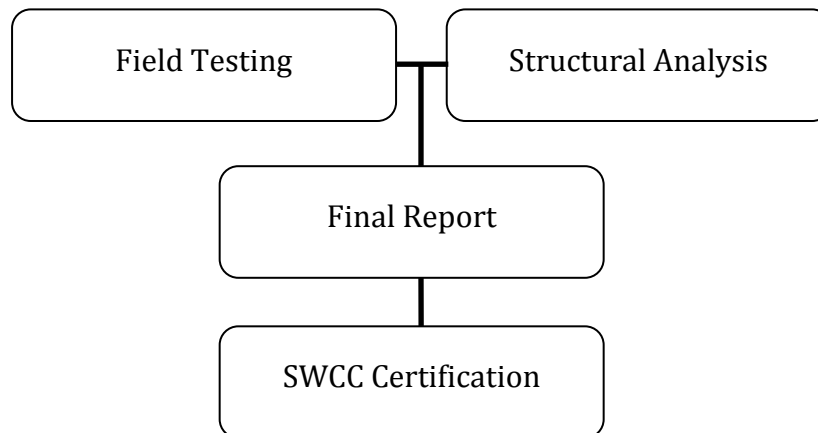


Figure A – Modules of SWCC Certification

B. Purpose and Scope

1. Purpose. This Certification Policy (Policy) has been adopted by the SWCC Board of Directors to define appropriate rules and procedures for the voluntary certification of eligible SWTs. The Policy is the sole and exclusive means by which an Applicant may apply for SWCC Certification.

The Policy serves to define the process and requirements for:

- a. Structural analysis of a SWT for the purpose of certification;
- b. Testing of a SWT for the purpose of certification;

- c. Reporting requirements related to such testing and analysis;
 - d. SWCC Certification of a SWT;
 - e. Maintenance and renewal of SWCC Certification;
 - f. Consumer labeling of a certified SWT; and,
 - g. Reviewing and resolving certification deficiencies and violation matters.
2. Scope. The scope of this Policy is to establish an objective and otherwise appropriate process to assess and certify that a SWT meets the requirements of the *AWEA Small Wind Turbine Performance and Safety Standard*.

C. Definitions

The following definitions have been adopted by SWCC for the identified terms used in this Policy.

1. Annual energy production. An estimate of the total energy production of a wind turbine during a one (1) year period as calculated by applying the measured power curve to a Rayleigh frequency distribution at a specified hub height annual average wind speed, assuming 100 % availability.
2. AWEA Standard. *AWEA Small Wind Turbine Performance and Safety Standard* (AWEA Standard 9.1 – 2009), hereinafter referred to as the AWEA Standard. The AWEA Standard incorporates, in part, the IEC 61400 series of Standards relevant to SWTs with regard to Power Performance (IEC Standard 61400-12-1), Acoustic Noise (IEC Standard 61400-11), and Design Requirements (IEC Standard 61400-2).
3. BWEA Standard. *BWEA Small Wind Turbine Performance and Safety Standard*, hereinafter referred to as the BWEA Standard. The BWEA Standard incorporates, in part, the IEC 61400 series of Standards relevant to SWTs with regard to Power Performance (IEC Standard 61400-12-1), Acoustic Noise (IEC Standard 61400-11), and Design Requirements (IEC Standard 61400-2).
4. Qualified Testing Organization. A testing organization that is qualified under this Policy and applicable SWCC requirements to perform SWT testing for the purpose of certification. In order to receive SWCC Qualified Testing Organization status, the organization must demonstrate compliance with all relevant requirements of the AWEA Standard and ISO/IEC Standard 17025.

D. Policy Abbreviations

1. AC: alternating current
2. AEP: annual energy production
3. AWEA: American Wind Energy Association
4. BWEA: British Wind Energy Association
5. C_p: power coefficient
6. ed: edition
7. HAWT: horizontal axis wind turbine
8. IEC: International Electrotechnical Commission
9. ISO: International Organization for Standardization
10. OTF: operational time fraction
11. SWCC: Small Wind Certification Council
12. SWT: small wind turbine
13. VAWT: vertical axis wind turbine

E. Certification Commission

The Certification Commission (Commission) has been established by the SWCC Board of Directors to supervise the evaluation of turbines for SWCC Certification. The Commission is composed of three (3), qualified and independent industry experts appointed by the Board of Directors. The Commission has been delegated the authority to review and approve SWT certification applications in consultation with the Technical Director. Among other responsibilities, and consistent with this Policy, the Commission will: review in consultation with the Technical Director, each certification application and relevant supporting information under the applicable SWCC Certification standards; determine by majority vote whether each certification application is granted, conditionally granted, or rejected; determine whether each certification renewal application is granted, conditionally granted, or rejected; determine whether a Certification Holder must submit a new certification application when a product has been modified; require the submission of additional application renewal information when appropriate; and, review and determine the appropriateness of design changes related to certified SWTs.

F. Certification Eligibility Requirements

1. Applicant Eligibility. Applicants eligible to submit applications for SWCC Certification are persons or entities that design and/or manufacture the SWT, or their authorized designee. The Applicant must own the rights to manufacture and/or distribute the SWT. If the Applicant is an authorized designee, the designee must submit written proof of authorization from the person or entity that has designed and/or manufactured the SWT.
2. Equipment Eligibility. Turbines eligible for SWCC Certification must meet the size and type requirements defined in the AWEA Standard. Eligible SWTs are currently defined as newly manufactured, electricity-producing wind turbines with a swept area up to 200 m². Except as required by the AWEA Standard, towers and foundation are not part of the scope of SWCC Certification.

Applicants may submit one (1) application for multiple SWT configurations of the same turbine type, provided that the SWTs are similar in design and other significant characteristics. In this regard, SWCC will make every reasonable effort to consolidate the testing requirements applicable under this Policy, based on SWCC's review of the information contained in an Applicant's Notice of Intent to Submit an Application. However, each SWT configuration will be issued a separate certification, provided all certification eligibility requirements are met.

3. Certification Eligibility. A turbine is eligible for certification if all of the following requirements are satisfied in full:
 - a. The SWT is compliant with the AWEA Standard in all applicable respects;
 - b. The SWT has been tested properly by a Qualified Testing Organization consistent with this Policy and the AWEA Standard, and such tests demonstrate that the SWT is compliant with the AWEA Standard;
 - c. A structural design analysis of the SWT has been performed consistent with this Policy and the AWEA Standard, and such analysis demonstrates that the turbine is compliant with the AWEA Standard;
 - d. All other SWCC Certification requirements and conditions have been satisfied;
 - e. The Applicant has submitted a complete Notice of Intent to Submit an Application to SWCC;
 - f. The Applicant has signed a Certification Agreement with SWCC, which details the responsibilities of the Applicant and SWCC with respect to the certification application review process;

- g. The Applicant has submitted a complete SWT Certification Application to SWCC;
- h. The Applicant has submitted all additional information and materials required by the Certification Commission or the Technical Director;
- i. The Applicant has submitted all required fees in full; and,
- j. The Certification Commission has determined that the turbine is eligible for certification, and grants certification to the SWT.

4. Conditional Temporary Certification.

- a. Under certain limited circumstances, and for a period of not more than two (2) years following the final adoption of the initial AWEA Standard, SWCC may grant Conditional Temporary Certification (Conditional Certification) to a SWT. Such Conditional Certification is time-limited and will be effective for a period of not more than eighteen (18) months.
- b. In order to be eligible for Conditional Certification, the testing and analysis of the SWT must have been performed by a Qualified Testing Organization consistent with the following Standards:
 - 1. IEC 61400 series of Standards: IEC Standard 61400-2 ed.2 (Design Requirements); IEC Standard 61400-11 (Acoustic Noise); and, IEC Standard 61400-12-1 (Performance); or,
 - 2. BWEA Standard.
- c. Conditional Certification may be granted by SWCC where a SWT has been tested and analyzed pursuant to the IEC 61400 series of Standards or the BWEA Standard (which are similar to the AWEA Standard); however, certain requirements of the AWEA Standard have not been met.

If Conditional Certification is granted, SWCC may require that the Applicant satisfy identified conditions or additional requirements within the eighteen (18) month Conditional Certification period in order for the SWT to be eligible to apply for full SWCC Certification.

- d. At the end of the temporary certification period, the Conditional Certification will expire. Conditional Certifications may not be re-issued.
- e. An Applicant may apply for full SWCC Certification at any time during the Conditional Certification period by demonstrating that all conditions and certification eligibility requirements established by SWCC policies have been satisfied.

G. Certification Fees

All SWCC Certification fees are established by the SWCC Board of Directors, or its authorized designee. The SWCC Certification Fee Schedule is provided in Policy Annex E. All current fees are subject to change. Fees may be paid by check or by wire transfer. Checks must be in U.S. funds drawn on a U.S. bank and payable to Small Wind Certification Council.

1. Preliminary Review Fee. A non-refundable fee paid by the Applicant with the Notice of Intent to Submit an Application. This fee satisfies all costs related to: an initial review of the SWT design and test plans concerning the SWT seeking certification; and, the development of the Certification Agreement(s).
2. Test Site Evaluation Fee. A non-refundable fee paid by the Applicant related to the on-site evaluation of a non-accredited testing organization, if such an evaluation is deemed necessary by SWCC to fulfill the requirements of this Policy. This fee will be charged to the Applicant once the Test Site Evaluation has been scheduled and must be paid prior to the scheduled evaluation. Any additional site evaluation expenses to be charged will be determined by SWCC based upon the actual costs incurred to complete the evaluation. Additional expenses related to site evaluation will be payable upon completion of the Test Site Evaluation. If the evaluation identifies deficiencies requiring corrective actions, additional fees will apply for any necessary SWCC reevaluation of the Applicant's completion of the corrective actions.
3. Test Site Travel Expenses. Non-refundable expenses paid by the Applicant related to the travel of SWCC representatives with respect to the Test Site Evaluation. Such expenses will be estimated in accordance with the SWCC Travel Policy and will be charged to the Applicant once the Test Site Evaluation has been scheduled. Such expenses must be paid prior to the scheduled evaluation. Eligible travel expenses include:
 - a. Airfare;
 - b. Railroad fare;
 - c. Car rental and fuel;
 - d. Taxi and bus fare;
 - e. Parking;
 - f. Meals and incidental expenses per federal rates;
 - g. Person mileage at the federal rate; and,

h. Lodging.

4. Certification Application Fee. A non-refundable fee paid by the Applicant with the Certification Application. This fee satisfies the costs related to: the technical review of test and structural analysis reports; the resolution of application issues; Certification Commission application review; labeling; and, the publishing of SWT data.
5. Conditional to Full Certification Fee. A non-refundable fee paid by an Applicant seeking to convert Conditional Certification to full Certification. This fee is determined by SWCC based on the specific items that were not determined to be in compliance with the AWEA Standard, and that require evaluation in order to meet the eligibility requirements for SWCC Certification.
6. Annual Certification Maintenance Fee. A non-refundable fee paid by the Certification Holder with the required Annual Certification Report.
7. Certification Renewal Fee. A non-refundable fee paid by the Certification Holder to satisfy the costs associated with the required five (5) year re-evaluation of the SWT and renewal of the Certification.

H. Application Requirements

In order to complete the SWCC Certification application process, each Applicant must submit the following completed application materials.

1. Notice of Intent to Submit an Application. An Applicant intending to seek SWCC Certification will first submit a Notice of Intent to Submit an Application (Notice of Intent). After receiving this Notice of Intent, SWCC will review the details of the SWT to be certified and the plans for testing. SWCC will use this information to determine the Certification Fee and develop a Certification Agreement. Guidelines for preparing the Notice of Intent are provided in Policy Annex B.

An SWCC Configuration Description Form will be included in the Application materials. This Form must be completed for each turbine seeking SWCC Certification and must be submitted with the Notice of Intent.

2. Certification Agreement with Applicant. After acceptance of the Notice of Intent by SWCC, the Applicant will sign an Agreement with SWCC, which provides detailed information concerning: the turbine to be certified; the test plans; and, the roles and responsibilities of each party. As part of this Agreement, the Applicant must agree to provide all design documents and raw data, or subsets of processed data (e.g., results for a particular date range), in a suitable format, if requested by SWCC. This Certification Agreement will be presented to the Applicant following the review of the Notice of Intent.

3. Publication of Application Status. In the Notice of Intent, an Applicant may request to have the status of the application published on the SWCC website as “Application Pending”, following execution of the Certification Agreement and prior to the grant of SWCC Certification.
4. Testing Agreement with Testing Organization. Non-accredited testing organizations that intend to perform testing for certification must sign a Testing Agreement with SWCC, which provides detailed information concerning: the turbine to be certified; the test plans; and, the roles and responsibilities of each party. The Testing Agreement will be presented to the Testing Organization after the Applicant has signed the Certification Agreement.
5. Certification Application. Once all required testing and reporting have been completed and the SWT otherwise is eligible for Certification, the Applicant will submit a complete Certification Application, including the final test report. The Certification Application is a separate form available from SWCC.

I. Qualified Testing Organizations

Qualified Testing Organizations must satisfy, and comply with, all relevant requirements of ISO/IEC Standard 17025: *General Requirements for the Competence of Calibration and Testing Laboratories*. In order to be designated as a Qualified Testing Organization, the testing organization must be either: accredited under ISO/IEC Standard 17025 by an authorized third-party accreditation body with a scope that covers the required testing; or, evaluated and approved by SWCC under the ISO/IEC Standard. The three (3) types of Qualified Testing Organizations, and the related requirements, are as follows:

1. Accredited Testing Organization. Test reports will be accepted for turbines tested by an organization accredited to ISO/IEC Standard 17025 by an authorized national or international accreditation body. The scope of the accreditation must include testing to at least one of the following:
 - a. The AWEA Standard;
 - b. The BWEA Standard; and/or,
 - c. The IEC Standard 61400-2 (Design), 61400-11 (Acoustics), and 61400-12-1 (Performance).
2. Non-Accredited Testing Organization. For SWTs tested by a non-accredited testing organization, SWCC will perform an on-site audit of the test facility to determine suitability and compliance with ISO/IEC Standard 17025. The audit will document conformance with the AWEA Standard, and will include:

- a. An evaluation of the testing organization's quality assurance system using ISO/IEC Standard 17025 as a guide. This quality audit will involve SWCC review and verification of the organization's: staff; procedures; instruments; calibrations; signal quality to data acquisition system; data quality procedures; and/or, validated data analysis procedures; and,
 - b. An evaluation of the testing organization's test environment using the AWEA Standard as a guide. For power performance testing, this audit will include a review of the site assessment for obstacles and terrain per IEC Standard 61400-12-1.
3. Manufacturer Testing. For turbines tested at a facility operated by the SWT manufacturer, SWCC will conduct an on-site audit and evaluation for non-accredited testing organizations, consistent with the requirements listed in Policy Section I.2. In addition to the audit, the manufacturer must also agree to the following terms:
- a. Unannounced site inspections by SWCC;
 - b. Periodic surveillance of data by SWCC; and,
 - c. Test site personnel must pass an SWCC proficiency test relating to the testing of SWTs.

J. Test and Analysis Report Requirements

1. Test and Analysis Reports submitted to SWCC must clearly and specifically state how each requirement of the AWEA Standard has been met with respect to the SWT tested. The following information and elements must be included in the final Test and Analysis Report in the format required by SWCC.
 - a. Introduction. A brief summary of the turbine that was tested, including: serial number and control software revision; the date and location of testing; and, the standards and technical specifications that were followed.
 - b. Reference Documents. All documents used in the production of the Test and Analysis Report.
 - c. Summary Report. A summary report, which will be publicly available once a SWCC Certification has been granted, and must include:
 1. Introduction from Policy Section J.1.a;
 2. Tabulated AEP (kWh) vs. hub height annual average wind speeds (m/s) at standard conditions;

3. AEP curve (kWh) vs. hub height annual average wind speeds (m/s) at standard conditions;
 4. Tabulated wind speed (m/s) and power data (kW) at standard conditions;
 5. Graph of Power (kW) vs. wind speed (m/s) at standard conditions;
 6. Measured sound pressure levels (per Section 9.4 of IEC 61400-11 ed.2);
 7. AWEA Rated Annual Energy @ 5 m/s;
 8. AWEA Rated Sound Level;
 9. AWEA Rated Power @ 11 m/s; and,
 10. Summary of the manufacturer's tower design requirements.
- d. Power Performance Test Report.
1. Description of test setup, including photographs;
 2. Summary of the site assessment for obstacles and terrain per IEC 61400-12-1;
 3. Measurement Sector(s) (degrees);
 4. Test Start Date & Time;
 5. Test End Date & Time;
 6. Total Valid Data Collected (hrs);
 7. Completed Bins;
 8. Average Air Density (kg/m³);
 9. Cut-in Wind Speed (m/s);
 10. Cut-out Wind Speed (m/s);
 11. Maximum Power (kW);
 12. Maximum Voltage (V);

13. Maximum Current(s) (A);
 14. AWEA Rated Annual Energy @ 5 m/s (kWh);
 - 15.
 16. AWEA Rated Power @ 11 m/s (kW);
 17. Tabulated wind speed (m/s) and power data (kW) at standard conditions, including number of data points and C_p for each bin;
 18. Graph of Power (kW) and C_p vs. wind speed (m/s) at standard conditions. The C_p must be calculated from the power and wind speed data tabulated in item 16;
 19. Graph of binned Power (kW) and a scatter plot of Power (kW) vs. wind speed (m/s) at standard conditions;
 20. Tabulated AEP (kWh); A and B uncertainties; and Extrapolated AEP (kWh) at standard conditions;
 21. AEP curve (kWh) vs. annual average wind speed (m/s) at standard conditions;
 22. Tabulated AEP (kWh) vs. annual average wind speed at standard conditions;
 23. Any data rejection criteria that differ from the data rejection criteria listed in section 7.4 of IEC 61400-12-1; and,
 24. A summary and sample of the data analysis tool(s) utilized in this test.
- e. Acoustic Test Report.
1. Description of test instrumentation and setup, including photographs;
 2. Acoustic data per section 9.4 of IEC 61400-11 ed.2;
 3. AWEA Rated Sound Level (dBA);
 4. Description of any obvious changes in sound at high wind speeds where overspeed protection becomes active;
 5. Characterization of any prominent tones observed during the test; and,
 6. A summary and sample of the data analysis tool(s) utilized in this test.

f. Duration Test Report.

1. Description of test setup, including photographs;
2. Test Start Date & Time;
3. Test End Date & Time;
4. Operational time fraction (OTF) (%);
5. Monthly summary of the OTF (%);
6. Explanation of any OTF classifications not clearly attributable to the conditions listed in section 9.4.2.2 of IEC 61400-2 ed.2;
7. Verification of reliable operation during the test period;
8. Characterization of any tower vibrations observed during the test period;
9. Verification that the tower used in the duration test complies with the tower design requirements provided by the manufacturer;
10. Total months of operation;
11. Total hours of power production in winds of any velocity;
12. Total hours of power production in winds in excess of 6.0, 7.5, 8.5 and 10.0 m/s;
13. Total hours of power production in winds in excess of 10.8, 13.5, 15.3 and 18.0 m/s;
14. Total hours in winds of 15 m/s and above;
15. Average turbulence intensity at 15 m/s;
16. Maximum instantaneous wind speed during the test (m/s); and.
17. Power production degradation test results;
18. Results of the post-test detailed inspection of the SWT; and,
19. A summary and sample of the data analysis tool(s) utilized in this test.

- g. Safety and Function Test Report.
1. Summary of the safety and function test;
 2. Summary of additional safety evaluation per section 4.3 of the AWEA Standard; and,
 3. All SWT manuals.
- h. Structural Analysis Report. The information required by this Report section concerns a structural analysis of the SWT outside of any turbine testing by a Qualified Testing Organization. The identified information must be submitted by the Applicant in the manner specified below.
1. A licensed Professional Engineer or Chartered Engineer shall be commissioned by the Applicant to perform an evaluation of the structural analysis of the SWT. The structural analysis report shall be provided in a format that enables SWCC to properly review the structural evaluation methods used. The engineer shall represent and confirm, by a stamped letter, that:
 - a. All required load cases were modeled using acceptable methods as described in the AWEA Standard; and,
 - b. The major components of the SWT were adequately designed, based on the results of the above-reference load modeling and per the requirements described in the AWEA Standard. Major components include the:
 1. blade root or blade connection point;
 2. main shaft;
 3. yaw axis (for HAWTs);
 4. connection to the tower or support structure; and,
 5. other components as required by SWCC following a review of the SWT design.
 2. Dynamic Analysis. For single/dual speed SWT or any SWT that has exhibited tower dynamics problems during the duration test, the Applicant must provide an evaluation of potential dynamic interactions between turbine and tower, and must demonstrate that potentially harmful dynamic interactions will be avoided.

- i. Log Book. A dedicated log book must be maintained during the testing. This log book must be submitted to SWCC when applying for Certification.

K. Labeling/Certificate

SWCC will prepare, and provide to Certification Holders, consumer labels that are consistent with the AWEA Standard. Turbine ratings will be included on each SWCC Certificate, consistent with the SWCC Certificate Format provided in Policy Annex A.

L. Certification Maintenance, Renewal, and Conditions

1. Period of Certification Validity. SWCC Certification is valid for a period of five (5) years so long as the following Certification Maintenance conditions are met:
 - a. Changes to the turbine design have been reported to SWCC by the Certification Holder as required by this Policy and the Certification Commission;
 - b. The Annual Certification Maintenance Fee has been paid in full;
 - c. The turbine has not been changed in any respect that significantly alters the original design approved in the SWCC Certification;
 - d. All field failures and malfunctions of the SWT have been reported to SWCC consistent with this Policy;
 - e. All SWCC marks and labels have been used properly, and in a manner consistent with SWCC policies; and,
 - f. The Certification Holder has not been the subject of any legal or government complaints related to the turbine or their business practices.
2. Certification Maintenance Requirements.
 - a. Annual Certification Report. In order to maintain SWCC Certification, the Certification Holder is required to prepare and submit an Annual Certification Report to SWCC on or before a date specified by SWCC. In order to be accepted, the Annual Certification Report must include the following information in detail:
 1. All abnormal operating experiences, equipment failures, and other problems related to the certified turbine; and,
 2. All modifications to the certified SWT, including all hardware and software changes.

- b. Significant SWT Modifications. In the event that a certified turbine is, or will be, modified in any significant respect, the Certification Holder must report such modification to SWCC in a timely and accurate manner, no more than thirty (30) days after such SWT design changes have occurred.

The Certificate holder is required to consult with the Technical Director to determine whether a product change is minor or significant. Thereafter, the Technical Director will consult with the Certification Commission to determine whether there is a material deviation from the initial certified turbine design that may significantly affect durability, function, or performance. Once SWCC determines whether a significant modification to the certified SWT has been proposed, SWCC may: require more information regarding the change; require a design analysis or partial design analysis; require re-testing or partial re-testing; required re-certification of the turbine; or, determine that the change is minor and no action is required. The Certification Holder must provide all required information and documentation to SWCC.

3. Renewal. After a period of five (5) years, the turbine design will be re-evaluated by SWCC to determine if further testing, evaluation, or re-certification is required.

M. Confidentiality of Applications/Conflict of Interest

Certification applications, and the information contained therein, will be treated as confidential material by SWCC. The review of certification applications by SWCC staff, consultants, and Certification Commissioners will be confidential and conducted in private meetings. However, once certification is granted, a summary report, as described in Section J, and the SWCC Certificate, as described in Policy Annex A, will be made available to the public. All other turbine information will remain confidential.

Prior to a certification determination, SWCC may publish the name of the Applicant and the SWT upon request by the Applicant. All other application information will remain confidential until a certification determination has been issued by SWCC.

An SWCC representative with a potential conflict of interest related to an SWCC Certification Application will disclose such potential conflict to the Certification Commission, and will not participate in the consideration of such Application.

N. Certification Holder Deficiencies, Violations, and Sanctions

1. Notice of Deficiency and Resolution Process. In the event that a Certification Holder violates, or otherwise does not comply with, the provisions of this Policy or other SWCC requirements, the Certification Commission shall issue a Notice of Deficiency and Violation (Notice) to the Certification Holder. Within thirty (30) days of receipt

of such Notice, the Certification Holder shall: respond to each identified deficiency and/or violation; provide all relevant information and materials; and, otherwise satisfy all requirements set forth in the Notice. Following the timely submission of such response to the Notice, all deficiency and violation matters shall be resolved pursuant to this Policy Section, or in the event of a Certification Holder's objection to a Commission decision, pursuant to the SWCC Certification Appeal Policy (Appeal Policy).

2. Failure to Respond. In the event that the Certification Holder does not provide a timely and complete response to a Notice, the Certification Commission may issue any sanction(s) or corrective action(s) authorized by this Policy, or any other applicable SWCC Policy. The Certification Holder shall comply fully with all sanctions and/or corrective actions issued by the Commission.
3. Grounds for Sanction and Corrective Actions. The circumstances under which the Certification Commission may issue certification sanctions and/or corrective actions include, but are not limited to, the following:
 - a. A Certification Application contains a material misrepresentation;
 - b. A Certification Holder makes a public misrepresentation concerning its activities, operations, or a tested product;
 - c. A Certification Holder fails to comply with a condition of the certification;
 - d. A Certification Holder violates SWCC Policy;
 - e. A Certification Holder fails to remit required certification fees and charges to SWCC consistent with the terms; or,
 - f. Other good and reasonable cause exists and supports the issuance of sanctions or corrective actions.
4. Deficiency and Violation Decision. Based on the information available, the Certification Commission, in its sole discretion, shall determine whether a deficiency or violation exists, or dismiss the Notice. Upon the finding of any deficiency or violation, the Certification Commission shall review the record, determine the severity of such deficiency(ies) or violation(s), and issue a Deficiency/Violation Decision. In its sole and exclusive discretion, the Commission may issue one or more of the following actions:
 - a. Private or Public Reprimand.
 - b. Conditions of Continued Certification.

- c. Certification Probation. The term of a probationary period shall be in one (1) month increments through an initial six (6) months. The Commission may determine the duration of the probationary period within this six (6) month time frame.
- d. Certification Suspension. The term of a suspension shall be in six (6) month increments, as determined by the Commission.
- e. Certification Revocation. After revocation of SWCC certification, a manufacturer may apply for certification after two (2) years following the date of the revocation.

O. Deficiency and Violation Decision Appeals

A Certification Holder may appeal an adverse Deficiency Violation Decision, or any part thereof, to the SWCC Appeals Committee, pursuant to the terms of SWCC Appeal Policy.

Annex A: SWCC Certificate Format

(to be made publicly available once a SWCC Certification has been granted)



This Certificate is issued to:

XXXX
Street
City
Country

For the wind turbine:

XXXX

This Certificate represents that the above-identified Small Wind Turbine (SWT) is in compliance with the *AWEA Small Wind Turbine Performance and Safety Standard (AWEA Standard 9.1 – 2009)*.

Changes to the Small Wind Turbine system design are to be approved by SWCC. If changes are made to the SWT without approval, this Certificate is not valid and is not in effect.

The wind turbine specifications relevant to this Certificate are provided on the following page.

This Certificate is valid until: mm.dd.yy.

Signature(s)

SWCC

Date

Applicant

Date

SWCC Certificate, Page 2

Wind Turbine Specification:

Turbine parameters

Model	
Manufacturer and Country	
Power Form	
Overspeed Control	
Rotor Diameter	[m]
Rotor Swept Area	[m ²]
Cut-In Wind Speed	[m/s]
Cut-Out Wind Speed	[m/s]
Maximum Power	[kW]
Maximum Voltage	[V]
Maximum Current(s)	[A]

Turbine Ratings

AWEA Rated Annual Energy @ 5 m/s	[kWh]
AWEA Rated Sound Level	[dBA]
AWEA Rated Power @ 11 m/s	[kW]

Design and Duration

Turbine design complies with IEC class X for average wind speeds (V_{ave}) of XX and reference wind speeds (V_{ref}) of XX.

Turbine duration test complies with class Y for average wind speeds (V_{ave}) of YY and reference wind speeds (V_{ref}) of YY.

Tower Design Requirements

Mechanical and electrical connections
 Minimum blade/tower clearance
 Maximum tower top loads
 Maximum allowable tower top deflection

Annex B: Notice of Intent to Submit an Application Format

Notice of Intent to Submit an Application for SWCC Certification

Please submit this form and all attachments electronically to the e-mail address below. Send a hard copy of this form with payment of the preliminary review fee to the mailing address below:

To: Small Wind Certification Council
56 Clifton Country Road, Suite 202
Clifton Park, NY 12065
info@smallwindcertification.org

Date (mm/dd/yyyy) _____

Applicant Name _____

Company _____

Website _____

Address 1 _____

Address 2 _____

City, State, Zip, Country _____

Email _____

Phone 1 _____

Phone 2 _____

Re: **Notice of Intent to Submit an Application for SWCC Certification**

The Applicant identified above represents the following:

1. The Applicant is the designer and/or manufacturer of the SWT, or the authorized designee of the designer/manufacturer.
2. The rotor swept area is **200 m² or less**.
3. The Applicant has:
 - ✓ Received and accepted the SWCC Small Wind Turbine Certification Policy;
 - ✓ Received and accepted the AWEA *Small Wind Turbine Performance and Safety*;
 - ✓ Received and accepted the necessary IEC 61400 Standards referenced within the AWEA Standard, including IEC 61400-2; and,
 - ✓ Included the SWCC **Preliminary Review Fee**.

Applicant Signature - Applicant agrees to the above representations

Preliminary review fee

- Notice of Intent to Submit an Application for one (1) SWT **US\$ 2500**
- For each additional SWT submitted when multiple SWT configurations of the same turbine type are included in the Notice of Intent, provided that SWCC confirms that the SWTs are similar in design and other significant characteristics. **US\$ 1250**
- Fees may be paid by check or by wire transfer. Checks must be in U.S. funds drawn on a U.S. bank and payable to Small Wind Certification Council. Contact SWCC for wire instructions.

Turbine information. Please provide the following information for each turbine to be certified:

Model: _____

Rotor: _____

Rotor diameter (m): _____

Swept area (m²): _____

Power form: _____

*(Please complete the **SWCC Configuration Description Form** for each turbine)*

(Please include turbine cut sheets, operation manuals and photo)

Testing and evaluation plans. Please describe the Qualified Testing Organization that will be testing the turbine(s) to be certified:

Testing organization: _____

Address: _____

Contact: _____

Phone: _____

Website: _____

Email: _____

Publication of Application Status.

If the Applicant chooses to be listed on the SWCC website as “Application Pending”, pursuant to section H.3 of the SWCC Certification Policy, **please indicate by checking one box below:**

- Yes, I authorize SWCC to publicly list the Applicant’s name and SWT model on the SWCC website as “Application Pending” for the time period following execution of the Certification Agreement and prior to the grant of SWCC Certification.
- No, I would like the Applicant’s name and SWT model to remain confidential as we pursue certification.

Annex C: Certification Process Summary

The following is an informative summary of the SWCC Certification process.

1. Applicant will acquire from the SWCC website:
 - a. The **SWCC Small Wind Turbine Certification Policy**;
 - b. The **AWEA Standard**;
 - c. The **Notice of Intent to Submit an Application form**; and,
 - d. The **SWCC Configuration Description Form**.
2. SWCC will receive a Notice of Intent to Submit an Application (Notice of Intent) along with the SWCC Configuration Description Form and Preliminary Review Fee
3. SWCC will evaluate Applicant's Notice of Intent to determine detailed plans for testing and analysis, and will communicate with the Applicant and Testing Organization as required.
4. Applicant will sign a Certification Agreement with SWCC, which details the turbine to be certified, the test plans, the requirements of the structural analysis, and the Certification Fees.
5. If the Applicant chooses to allow SWCC to publicly list the Applicant's name and SWT model as "Application Pending", such information will be listed on the SWCC website.
6. A non-accredited testing organization (if applicable) will sign an Agreement with SWCC, agreeing to perform appropriate tests on the turbine to be certified, and agreeing to the test plans and SWCC test site evaluation.
7. After testing, analysis, and reporting are complete, Applicant must submit to SWCC:
 - a. A complete Certification Application;
 - b. Final testing and structural design analysis report(s); and,
 - c. The Certification Fee (determined after a review of the Notice of Intent; this fee varies depending on the particular details of the turbine and test plans).

8. SWCC Technical Director, and other experts as needed, will review Application materials, test reports, and the structural design analysis report, and communicate with the Applicant and testing organization to resolve issues.
9. Technical Director will send a technical review report to Certification Commission.
10. Certification Commission will review the Technical Director report, and determine whether the Certification Application is granted, conditionally granted, or rejected.
11. SWCC will grant certification to the SWT, or issue a rejection of the Certification Application describing the reasons for such determination.
12. If certification is granted, SWCC will prepare technical data and labeling for publication on the SWCC Internet site and distribution by the Certification Holder.
13. Certification Holder will sign an SWCC Certification Certificate.
14. SWCC will post technical data on the SWCC Internet site.

Annex D: References

The following documents were used in the creation of, or are referenced within, this Policy.

1. AWEA *Small Wind Turbine Performance and Safety Standard* (AWEA Standard 9.1 – 2009).
2. BWEA *Small Wind Turbine Performance and Safety Standard*.
3. IEC 61400-2 (2006): *Wind Turbines – Part 2: Design requirements of small wind turbines*.
4. IEC 61400-12-1 (2005): *Wind Turbines – Part 12-1: Power performance measurements of electricity producing wind turbines*.
5. IEC 61400-11 (2006): *Wind turbine generator systems - Part 11: Acoustic noise measurement techniques*.
6. IEC TS 61400-22 (2008): *Wind turbines - Part 22: Conformity testing and certification of wind turbines*.
7. IEC/ISO Guide 65 (1996): *General requirements for bodies operating product certification systems*.
8. ISO/IEC 17025 (2005): *General requirements for the competence of calibration and testing laboratories*.

Annex E: Certification Fee Schedule

All fees are non-refundable. Section G of this Policy defines each Certification fee in detail.

Payments may be made by check or by wire transfer. Payments made by check must be in U.S. funds drawn on a U.S. bank and payable to Small Wind Certification Council. If you wish to wire funds, please contact SWCC for wire instructions.

Preliminary review fee

- | | |
|--|-----------|
| <ul style="list-style-type: none"> ▪ Notice of Intent to Submit an Application for one (1) SWT | US\$ 2500 |
| <ul style="list-style-type: none"> ▪ For each additional SWT submitted when multiple SWT configurations of the same turbine type are included in the Notice of Intent, provided that SWCC confirms that the SWTs are similar in design and other significant characteristics. | US\$ 1250 |

Test site evaluation fee	Varies
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Certification application fee	Varies
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Conversion from Conditional to full Certification	Varies
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Annual certification maintenance fee	US\$ TBD
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Certification renewal fee	US\$ TBD
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