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ICC-SRCC™ Medium Wind Turbine (MWT) Certification Policy

April 27, 2017

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Introduction

Solar Rating & Certification Corporation (ICC-SRCC) is an independent, third-party certification body that certifies wind turbines. For medium wind turbines (MWTs), with a rotor swept area that is greater than 200 m² and less than 1000 m², ICC-SRCC offers certification services related to wind turbine power performance, acoustic performance, and design certification (Medium Wind Certification).

ICC-SRCC Medium Wind Certification represents conformity assessment to IEC 61400-12-1 (Power Performance), IEC 61400-11 (Acoustic Performance) and IEC 61400-1 (Design Requirements), hereinafter referred to as the IEC Standards. Applicants may choose to pursue one, two or all of the following Medium Wind Certification elements:

- ICC-SRCC MWT Power Performance Certification;
- ICC-SRCC MWT Acoustic Performance Certification; and
- ICC-SRCC MWT Design Certification.

For all Medium Wind Certification services, ICC-SRCC Small Wind Certification is granted on the basis of an assessment of the completeness and correctness of the final reports, and whether the performance testing and/or design of the MWT conforms to all requirements of the IEC Standards.

1. PURPOSE

This Certification Policy (Policy) has been adopted by ICC-SRCC to define appropriate rules and procedures for the voluntary certification of eligible MWTs while ensuring the impartiality and objectivity of ICC-SRCC's certification decisions. The Policy is the sole and exclusive means by which an Applicant may apply for ICC-SRCC Medium Wind Certification.

The Policy serves to define the process and requirements for:

- a. Testing of a MWT for the purpose of power and acoustic performance certification;
- b. Design requirements of a MWT for the purpose of design certification;
- c. Reporting requirements;
- d. ICC-SRCC Certification of a MWT;
- e. Maintenance and renewal of ICC-SRCC MWT Certification; and,

- f. Reviewing and resolving certification deficiencies and violation matters.

2. SCOPE

ICC-SRCC Small Wind Certification requirements, evaluations, and decisions are based on appropriate standards and information specifically related to the purposes and scope of the certification. The scope of this Policy is to establish an objective and otherwise appropriate process to assess and certify that a MWT meets the requirements of the IEC 61400 Standards for power performance and/or acoustic performance and/or design requirements.

3. REFERENCES

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

- IEC 61400-1 (2005): *Wind Turbines - Part 1: Design requirements.*
- IEC 61400-11 (2006): *Wind turbine generator systems - Part 11: Acoustic noise measurement techniques.*
- IEC 61400-11 (2012): *Wind turbines - Part 11: Acoustic noise measurement techniques.*
- IEC 61400-12-1 (2005): *Wind Turbines – Part 12-1: Power performance measurements of electricity producing wind turbines.*
- IEC 61400-22 (2010): *Wind turbines - Part 22: Conformity testing and certification.*
- IEC 61400-23 (2014): *Wind turbines - Part 23: Full-scale structural testing of rotor blades*
- ISO/IEC 17025 (2005): *General requirements for the competence of calibration and testing laboratories.*
- ISO/IEC 17065 (2012): *Conformity assessment - Requirements for bodies certifying products, processes and services.*
- ISO 9001 (2008): *Quality management systems – Requirements.*

4. DEFINITIONS

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

Annual Energy Production (AEP). 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.

IEC Standards. International Standards developed by the International Electrotechnical Commission. For the purpose of ICC-SRCC Medium Wind Turbine Certification; IEC 61400-11: Wind turbines - Part 11: Acoustic noise measurement techniques, IEC 61400-12-1: Wind turbines - Part 12-1: Power performance measurements of electricity producing wind turbines, and IEC 61400-1: Wind turbines – Design Requirements and any other relevant IEC standards referenced in this Policy. These IEC Standards were prepared by IEC technical committee 88: Wind turbines.

Medium Wind Turbine. For the purpose of ICC-SRCC Medium Wind Turbine Certification; electricity-producing wind turbine with a swept area greater than 200 m² and less than 1000 m².

Peak Power. Highest bin-averaged power output of all filled wind speed bins per the power curve from IEC 61400-12-1. Also termed “nameplate capacity”.

Qualified Testing Organization. A testing organization that is qualified under this Policy and applicable ICC-SRCC requirements to perform MWT testing for the purpose of certification. In order to receive ICC-SRCC Qualified Testing Organization status, the organization must demonstrate compliance with all relevant requirements of ISO/IEC Standard 17025.

Reference Power. Highest bin-averaged power output of all filled wind speed bins up to 11 m/s per the power curve from IEC 61400-12-1.

Reference Annual Energy. Calculated total energy that would be produced during a one-year period at an average wind speed of 5.0 m/s at hub height, assuming a Rayleigh wind speed distribution, 100 % availability, and the power curve derived from IEC 61400-12-1. For this definition, reference annual energy is AEP-measured and sea-level normalized.

Reference Sound Pressure Level. Sound pressure level that will not be exceeded 95% of the time, assuming an average wind speed of 5 m/s (11.2 mph), a Rayleigh wind speed distribution, 100% availability, and an observer location 60 m (~ 200 ft.) from the rotor center. Calculated from the Apparent Sound Power Level at 9.8 m/s.

Remanufactured. A turbine which has been previously used, and subsequently disassembled, repaired, and reassembled to be used again.

Small Wind Turbine. Electricity-producing wind turbine having a swept area that is less than or equal to 200 m².

5. ABBREVIATIONS

- HAWT: horizontal axis wind turbine
- OTF: operational time fraction
- MWT: medium wind turbine

6. GENERAL

6.1 Certification Commission

The ICC-SRCC Certification Commission (Commission) has been established to supervise the evaluation of turbines for the ICC-SRCC small and medium wind certification programs. The structure and composition of the Commission has been developed to ensure impartiality in all matters pertaining to its role.

The Commission is composed of three (3), qualified and independent industry experts appointed by ICC-SRCC. The Commission has been delegated the authority to review and approve MWT certification applications in consultation with the Technical Director. Among other responsibilities, and consistent with this Policy, the Commission will: review each certification application and relevant supporting information under the applicable standards, in consultation with the Director of Technical Services; 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 Participants must submit a new certification application when a product has been modified; initiate, review, and resolve all deficiency and violation matters under this Policy related to Participants and Applicants, and determine whether to issue certification sanctions or other appropriate actions; require the submission of additional application renewal information when appropriate; and, review and determine the appropriateness of design changes related to certified MWTs.

6.2 Certification Eligibility Requirements

1. General Policy Requirements. ICC-SRCC eligibility policies are administered in an objective and non-discriminatory manner, and ICC-SRCC provides certification services to any Applicant that satisfies the conditions in this Policy. ICC-SRCC will not impede or inhibit Applicant access to ICC-SRCC services in any unlawful or improper preferential manner.

ICC-SRCC makes its services accessible to all Applicants whose activities fall within its declared field of operation. All Application and Certification Fees will be

applied uniformly to all Applicants. Access to -SRCC Medium Wind Certification is not conditioned on the Applicant's size, membership in any association or group, nor the number of certifications previously issued by ICC-SRCC.

2. Applicant Eligibility. ICC-SRCC Medium Wind Certification Applications may be submitted only by the holder of all ownership rights in and to the MWT (MWT Manufacturer), or the authorized designee of such MWT Manufacturer. If the Applicant is such an authorized designee, the Applicant must submit written proof of authorization from the MWT Manufacturer to seek ICC-SRCC Small Wind Certification. ICC-SRCC will have the sole and exclusive right to determine whether such a designee is properly authorized to seek ICC-SRCC Medium Wind Certification.

If the Applicant is an authorized designee, the non-Applicant MWT Manufacturer will be required to accept and agree to comply with all terms of ICC-SRCC policies, including the *ICC-SRCC Trademark and Certification Mark Use Policy*, prior to ICC-SRCC issuing MWT Certification.

3. Equipment Eligibility. Eligible MWTs are defined as newly-manufactured, electricity-producing wind turbines with a swept area greater than 200 m² and less than 1000 m². Previous versions of a MWT design that are no longer available to the market are not eligible for ICC-SRCC certification. Remanufactured MWTs are not eligible for ICC-SRCC MWT.

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

4. Certification Eligibility. A turbine is eligible for certification if all of the following requirements are satisfied in full:
 - a. The MWT is compliant with the relevant IEC Standard(s) in all applicable respects;
 - b. The MWT has been tested properly by a Qualified Testing Organization consistent with this Policy and the relevant IEC Standard(s), and such tests demonstrate compliance with the IEC Standards;

- c. All other ICC-SRCC Medium Wind Certification requirements and conditions have been satisfied;
- d. The Applicant has submitted a complete *ICC-SRCC Notice of Intent to Submit an Application* to ICC-SRCC;
- e. The Applicant has signed a Certification Agreement with ICC-SRCC, which details the responsibilities of the Applicant and ICC-SRCC with respect to the certification application review process;
- f. The Applicant has submitted a complete MWT Certification Application to ICC-SRCC;
- g. The Applicant has submitted all additional information and materials required by the Certification Commission or the Director of Technical Services;
- h. The Applicant has submitted all required fees in full; and,
- i. The Certification Commission has determined that the turbine is eligible for certification, and grants certification to the MWT.

7. CERTIFICATION FEES

All ICC-SRCC Medium Wind Certification fees are established in the *ICC-SRCC Fee Schedule for Small and Medium Wind Certification*, which is available online at: www.smallwindcertification.org. 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 Solar Rating & Certification Corporation.

8. GENERAL CERTIFICATION PROCEDURES

In order to complete the ICC-SRCC Small Wind Certification application process, each Applicant must submit the following completed application materials.

1. ICC-SRCC Notice of Intent to Submit an Application. An Applicant intending to seek ICC-SRCC Medium Wind Certification will first submit an ICC-SRCC Notice of Intent to Submit an Application (NOI). After receiving this NOI, ICC-SRCC will review the details of the MWT to be certified and the plans for testing. ICC-SRCC will use this information to determine the Certification Fee and develop a Certification Agreement. The NOI is then reviewed by the Certification Commission, who must approve it before the application proceeds.

An *ICC-SRCC Configuration Description Form (CD)* will be included in the Application materials. This Form must be completed for each turbine seeking ICC-SRCC Medium Wind Certification and must be submitted with the Notice of Intent.

2. Certification Agreement with Applicant. After acceptance of the NOI by ICC-SRCC, the Applicant will sign an *ICC-SRCC™ Medium Wind Turbine (MWT) Certification Program Agreement (Certification Agreement)* with ICC-SRCC, 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 ICC-SRCC. This Certification Agreement will be presented to the Applicant following the review of the Notice of Intent.
3. Testing Agreement with Testing Organization. Testing organizations that intend to perform testing for certification must sign a Testing Agreement with ICC-SRCC, 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.
4. Certification Application. Once all eligibility conditions have been satisfied and all required testing and reporting have been completed, the Applicant will submit a complete Certification Application, including the final test report, to ICC-SRCC.
5. Publication of Application Status. In the NOI, an Applicant may request to have the status of the Application published on the ICC-SRCC website. Following acceptance of the Certification Agreement, ICC-SRCC will publish on the ICC-SRCC website the Applicant's name, MWT model, and Application Status with the following status information:
 - “Under Contract” which indicates that the Applicant has executed a Certification Agreement with ICC-SRCC;
 - “Under Test” which indicates that the MWT has been installed at the test site, commissioned, instrumented and is collecting data;
 - “Reports Submitted” which indicates that the Applicant has submitted a complete Test and Analysis Report to the ICC-SRCC with a Certification Application; or

Note: the date on which the Applicant has achieved each Application Status will be published on the ICC-SRCC website.
6. Inactive Status. Applications are classified as Active or Inactive according the

criteria below. Active applications are eligible for completion and the award of a certification when all program requirements established by ICC-SRCC have been satisfied. Inactive applications have failed to adequately progress toward certification as established below, and require additional steps in order to be returned to Active status. A certification application shall be considered Inactive and removed from the ICC-SRCC website under the any one of the following conditions:

- a. The MWT has not yet achieved “Under Test” status after eighteen (18) months from the “Under Contract” date.
- b. The MWT has not yet achieved “Reports Submitted” status after two (2) years from the “Under Test” date.

Upon classification as Inactive, applications are removed from the list of Applicant Turbines posted on the ICC-SRCC website. The initial NOI associated with applications that are classified as Inactive becomes invalid. To restore an application to Active status, a new NOI must be submitted for review along with payment of associated Preliminary Review and reinstatement fees. ICC-SRCC staff shall make a good faith effort to notify applicants whose application is nearing one or both of the Inactive status criteria above, using the latest applicant contact information on file with ICC-SRCC.

7. Certification Decision. ICC-SRCC will notify the Applicant of the Certification decision. If certification is not granted, ICC-SRCC will identify the reasons for the decision.

9. 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 eligible 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 ICC-SRCC under the ISO/IEC Standard, and other relevant standards identified in this Section. 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 the MWT Certifications sought by the Applicant, IEC 61400-11 (Acoustics) and/or IEC 61400-12-1 (Power

Performance), depending on the MWT Certification being sought by the Applicant.

ICC-SRCC may conduct an on-site evaluation and inspection of the test facility and laboratory documentation to assure compliance with this policy and conformity with all standards referenced above.

2. Non-Accredited Testing Organization. For MWTs tested by a non-accredited testing organization, ICC-SRCC will perform an on-site audit of the test facility to determine suitability and competence, using ISO/IEC Standard 17025 as a guide. The audit will document conformance with the IEC Standards, and will include:
 - a. An evaluation of the testing organization's quality assurance system using ISO/IEC 17025 as a guide. This quality audit will involve ICC-SRCC 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 IEC Standards as a guide.

If the testing organization fails to satisfy ISO/IEC 17025 requirements, all testing performed on the MWT by that test facility, and all related test analysis reports, will be rejected by ICC-SRCC.

3. Manufacturer Testing. For turbines tested at a facility operated by the MWT Manufacturer, ICC-SRCC will conduct an on-site audit and evaluation for non-accredited testing organizations, consistent with the requirements of. In addition to the audit, the manufacturer must also agree to the following terms:
 - a. Unannounced facility site inspections by ICC-SRCC;
 - b. Periodic surveillance of data by ICC-SRCC; and,
 - c. Development, maintenance, and enforcement of facility policies and procedures ensuring that all key personnel involved in the MWT testing, and the collection and reporting of data related to the MWT tests, are impartial and free from any undue commercial, financial, and other pressures that might influence their technical and independent judgment. In order to satisfy this requirement, the ICC-SRCC Manufacturer/Applicant must either: adopt the procedures identified in this Policy; or, submit its policies and procedures concerning this requirement to ICC-SRCC for review and approval. ICC-SRCC retains the sole authority to accept, reject, or require modification of such MWT Manufacturer policies.

If the test facility fails to satisfy relevant requirements of ISO/IEC 17025 requirements, all testing performed on the MWT by that facility, and all related test analysis reports, will be rejected by ICC-SRCC.

10. TEST AND ANALYSIS REPORT REQUIREMENTS

1. Test and Analysis Reports submitted to ICC-SRCC must clearly and specifically state how each requirement of the relevant IEC Standards has been met with respect to the MWT tested. Applicable to the MWT Certification element(s) being pursued, the following information and elements must be included in the final report(s) in the format required by ICC-SRCC.
 - a. Power Performance Test Report. The power performance test report must include:
 1. Reporting requirements of Section 9 (Reporting Format) of IEC 61400-12-1;
 2. A summary of the data analysis tool(s) utilized in this test. These tools shall be made available for an ICC-SRCC audit; and,
 3. Log Book. A dedicated log book must be maintained during the testing as required by the IEC Standard. This log book must be submitted to ICC-SRCC if requested.
 - b. Acoustic Test Report. The acoustic test report must include:
 1. Reporting requirements of Section 9 (Information to be reported) of IEC 61400-11; and,
 2. A summary of the data analysis tool(s) utilized in this test. These tools shall be made available for an ICC-SRCC audit.
 - c. Design Report. The design report must include:
 1. Loads and load cases. Summary and results of aeroelastic modeling and load calculations for each design load case, load assumptions, model validation in conformance with IEC 61400-1;
 2. Structural Components. Summary and results of structural analysis, dynamic analysis, and ultimate limit state analysis of the load-carrying turbine components, from rotor to foundation - including support structure(s) and excluding the foundation - in conformance with IEC 61400-1;

Note: The ultimate strength analysis shall be undertaken in accordance with Section 7.6.2 of IEC 61400-1 (2005) with the exception that the characteristic value of the load shall be the worst case computed transient value without application of statistical load extrapolation to the 50-year recurrence period.

3. Blade Testing. Results of a Static Load Test in conformance with IEC 61400-23, testing may be performed by the manufacturer and is exempt from an ICC-SRCC SWT Test Site Evaluation ;
4. Control and Protection. Summary of control and protection system design in conformance with IEC 61400-1, results of Safety and Function Testing as described in informative Annex D of IEC 61400-22;
5. Mechanical and Electrical Components. Mechanical and electrical system design drawings and documentation in conformance with IEC 61400-1;
6. Manuals. Manuals for assembly, installation, erection, commissioning, operation and maintenance in conformance with IEC 61400-1; and,
7. Quality System. Summary of manufacturing quality assurance system in place at the manufacturing facility, such as ISO 9001.

11. LABELING AND CERTIFICATE

For each MWT Certification granted to a certified MWT, ICC-SRCC will prepare and provide to the Certification Holder a Certificate and Summary Report consistent with the formats provided in Policy Annex B (ICC-SRCC MWT Label Format) and Policy Annex C (ICC-SRCC MWT Certification Summary Report Formats).

Each certification is valid for one year from the date issued. If a turbine has been granted more than one certification (e.g. Power Performance and Acoustic Performance), ICC-SRCC may revise the expiration dates so all certifications for the same turbine expire on the same date.

12. COMPLAINTS AND DISPUTES RELATED TO MWT – REPORTING AND RECORDS REQUIREMENT

As a condition of ICC-SRCC Medium Wind Certification and certification renewal, each Participant is required to report to ICC-SRCC all complaints and disputes (complaint

matters), including any legal, government, or other third party communications received by the Participant, questioning or objecting to the performance, operations, quality, durability, components, safety, power, compliance with ICC-SRCC Medium Wind Certification standards, or any other aspect of the MWT. Such complaint matters must be reported in accordance with the *ICC-SRCC Medium Wind Turbine (MWT) Certification Program Agreement*.

ICC-SRCC will review all complaint matters related to the certified MWT in order to determine whether a Notice of Deficiency and Violation will be issued to the Certification Holder under Section O of this Policy.

13. CERTIFICATION RENEWAL AND CONDITIONS

1. Period of Certification Validity. ICC-SRCC Medium Wind Certification is valid during the certification period so long as all Certification Policy conditions are met. Among others, the Participant must satisfy the following conditions:
 - a. The turbine has not been changed in any respect that significantly alters the original design approved in the ICC-SRCC Medium Wind Certification;
 - b. Changes to the turbine design have been reported to ICC-SRCC by the Participant as required by this Policy and the Certification Commission. All complaint matters, field failures and malfunctions of the MWT have been reported to ICC-SRCC consistent with all ICC-SRCC policies;
 - c. The Participant is in compliance with all applicable ICC-SRCC policies, including the *ICC-SRCC Trademark and Certification Mark Use Policy*. All ICC-SRCC marks and labels have been used properly, and in a manner consistent with ICC-SRCC policies;
 - d. The Participant has complied with the *ICC-SRCC Medium Wind Turbine (MWT) Certification Program Agreement*.
 - e. The Annual Certification Renewal Fee has been paid in full.
2. Certification Period. On or before the end of the certification period, ICC-SRCC will take one of the following actions:
 - a. Renew the turbine certification for an additional certification period if the Applicant meets the requirements in this Policy.
 - b. Grant an extension of up to three (3) months for the certification period, if the renewal decision is not complete by the end of the certification period.

- c. The Applicant voluntarily withdraws the turbine certification. The Participant is not permitted to use any ICC-SRCC Small Wind Certification mark, certificates, labels, or reports, or make any representation concerning certification by, or affiliation with, ICC-SRCC with respect to the relevant MWT that has been withdrawn from certification. ICC-SRCC will remove the MWT from certification lists and any other published information.
- d. Suspend or Withdraw the Certification according to the requirements in this Policy.

When a decision is made to renew a turbine certification, the start date of the new certification period listed on the certificate shall be the renewal decision date. The end date of the certification period will remain the certification anniversary date.

3. Certification Renewal Requirements.

- a. Annual Certification Report. In order to maintain ICC-SRCC Small Wind Certification, the Participant is required to prepare and submit an *ICC-SRCC™ Medium Wind Certification Annual Report Form* to ICC-SRCC each year, at least 45 days before the anniversary of the date that the ICC-SRCC Medium Wind Certification was issued. In order to be accepted, the annual report must include a complete and accurate explanation of the following information:
 1. All abnormal operating experiences, equipment failures or malfunctions, and other problems related to the certified turbine;
 2. All modifications to the certified MWT, including all hardware and software changes; and,
 3. A summary list of all complaint matters identified in this Policy within the past twelve (12) months.

The Director of Technical Services will assess the *ICC-SRCC™ Medium Wind Certification Annual Report Form* information, and determine whether the Report satisfies the requirements of this Policy. If accepted, the Participant will be notified of continued certification, and will receive an updated Certificate.

If the Director of Technical Services identifies any concerns or anomalies related to the information in the annual report, the matter will be referred to the Certification Commission, which will decide whether to accept the

report and maintain certification for another year, or whether to require additional testing or other requirements in order to confirm the MWT's ongoing compliance and eligibility. If any MWT changes are deemed significant, then the Requirements of Section 13.3(b) below will apply. These results will be communicated to the Participant in writing.

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

The Participant is required to consult with the Director of Technical Services to determine whether a product change is minor or significant. Thereafter, the of Technical Services 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 ICC-SRCC determines whether a significant modification to the certified MWT has been proposed, ICC-SRCC may: require more information regarding the change; require a design analysis or partial design analysis; require re-testing or partial re-testing; require re-certification of the turbine; or, determine that the change is minor and no action is required. The Participant must provide all required information and documentation to ICC-SRCC.

- c. Annual Certification Renewal Fee. Payment of the Annual Certification Renewal Fee is required to maintain certification. In the event the information reported in the *ICC-SRCC™ Medium Wind Certification Annual Report Form* or the Significant Modification Report requires additional ICC-SRCC work or review, the Participant will be charged separately for such ICC-SRCC costs and expenses, consistent with the applicable ICC-SRCC fee schedule.
4. Change in Ownership of WT. If ownership rights in and to the MWT changes, or the Participant identified in the ICC-SRCC MWT Performance Certificate no longer has any rights in or to the certified MWT, a new ICC-SRCC Medium Wind Certification Agreement must be accepted by the new owner of the MWT to maintain the Certification, or the Certification will terminate.

14. CONFIDENTIALITY AND IMPARTIALITY

1. Confidentiality. Certification Applications, and the information contained therein, will be treated as confidential material by ICC-SRCC. The review of Applications by ICC-SRCC staff, consultants, and Certification Commissioners will be confidential and conducted in private meetings. Prior to a certification

determination and upon request by the Applicant, ICC-SRCC will publish the Applicant's name, model, and Application Status, pursuant to this Policy. All other Application information will remain confidential until a certification determination has been issued by ICC-SRCC.

Once certification is granted, the following materials will be made available to the public, consistent with this Policy:

- Summary Report
- ICC-SRCC Certificate

All other turbine information will remain confidential in accordance with the *ICC-SRCC Confidentiality Policy*.

2. Impartiality. All certification activities associated with the ICC-SRCC MWT Certification Program shall be undertaken impartially and in accordance with the *ICC-SRCC Impartiality Policy*.

15. CERTIFICATION DEFICIENCY AND POLICY VIOLATION RESOLUTION PROCESS

ICC-SRCC will review and resolve all matters involving: a potential failure of the Participant to satisfy a requirement of this Policy; a complaint or similar communication received by the Participant or ICC-SRCC concerning the MWT; and, any other dispute related to ICC-SRCC policies.

1. Notice of Potential Certification Deficiency or Policy Violation.

The Certification Commission will issue a Notice of Deficiency and/or Notice of Policy Violation (Notice) to a Participant where the Commission has determined that:

- a. the Participant may have violated any requirement of this Policy; or,
- b. a deficiency may exist with respect to the Participant's ICC-SRCC Medium Wind Certification.

2. Required Response to Deficiency Notice. Within thirty (30) days of receipt of such Notice, the Participant must: respond to each identified deficiency and/or Policy violation; provide all relevant information and materials; and, otherwise satisfy all requirements set forth in the Notice. Following the timely submission of a complete and accurate response to the Notice, all deficiency and violation matters will be resolved by the Certification Commission pursuant to this Policy.
3. Failure to Respond. In the event that the Participant does not provide a timely, complete, and accurate response to a Notice, the Certification Commission may

issue any sanction(s) or corrective action(s) authorized by this Policy, or any other applicable ICC-SRCC Policy. The Participant must comply fully with all sanctions and/or corrective actions issued by the Commission.

4. 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. The Participant has failed to satisfy an ICC-SRCC Policy requirement with respect to the Participant's ICC-SRCC Medium Wind Certification;
 - b. The Certificate holder makes a material misrepresentation to ICC-SRCC;
 - c. The Participant makes a public misrepresentation concerning its activities, operations, or a tested product;
 - d. The Participant fails to comply with a condition of the certification;
 - e. The Participant violates, or acts contrary to, an ICC-SRCC Policy;
 - f. The Participant fails to remit required certification fees and charges to ICC-SRCC;
 - g. Other good and reasonable cause exists and supports the issuance of sanctions or corrective actions under this Policy.

5. Certification Deficiency and Policy Violation Decisions. Based on an objective and complete review of the information received, the Certification Commission, in its sole discretion, will determine whether a certification deficiency or Policy violation exists, or whether to dismiss the Notice. Upon the finding of any such deficiency or violation, the Certification Commission will determine the severity of such deficiency(ies) or violation(s), and issue a Deficiency and/or Violation Decision. In its sole 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 certification probation will be for a period of up to six (6) months. Certification probation status will not be published on the ICC-SRCC website. During the period of ICC-SRCC Medium Wind Certification probation, the Certification remains in effect.
 - d. Certification Suspension. The term of a certification suspension will be for a period of at least six (6) months, and a maximum of thirty-six (36)

months. Notice of certification suspension will be published on the ICC-SRCC website. During the period of Certification suspension, the Participant is not permitted to use any ICC-SRCC Medium Wind Certification mark or make any representation concerning certification by, or affiliation with, ICC-SRCC with respect to the relevant MWT that is the subject of the deficiency or Policy violation. In addition, the Certification Commission may require that the Participant perform certain, appropriate corrective actions related to the suspension.

- e. Certification Revocation. Upon certification revocation, all rights of the Participant to Certification will terminate in all respects, and the MWT will be removed from the listing of ICC-SRCC certified turbines on the ICC-SRCC website. Notice of certification revocation will be published on the ICC-SRCC website. The Participant is not permitted to use any ICC-SRCC Medium Wind Certification mark, or make any representation concerning certification by, or affiliation with, ICC-SRCC with respect to the MWT that is the subject of the deficiency or Policy violation.
6. Probation Order/Reinstatement. Following the expiration of a final Certification Probation Decision and Order issued under this Policy, the Certification Commission will do the following: if the Participant has satisfied the terms of probation in full, verify that the probation has been completed and reinstate the Participant to full certification status; or, if the Participant has not satisfied the terms of probation in full, determine whether the probation order will continue, and/or issue additional, appropriate sanctions or actions. A reinstatement fee may apply for any necessary ICC-SRCC evaluation of the Applicant's completion of the corrective actions and processing of reinstatement, consistent with the ICC-SRCC fee schedule.
 7. Suspension Order/Reinstatement Request. After the expiration of a final Certification Suspension Decision and Order issued under this Policy, the Participant may submit a Request for Reinstatement (Reinstatement Request) to the ICC-SRCC Executive Director for review by the Certification Commission.
 - a. Contents of Reinstatement Request. The Reinstatement Request must include the following information: a statement of the reasons that the Participant believes support or justify the acceptance of the Reinstatement Request; and, copies of any relevant materials which support the Request. The Certification Commission may require any additional information or documents related to its review of the Reinstatement Request. A reinstatement fee may apply for any necessary ICC-SRCC evaluation of the Applicant's completion of the corrective actions and processing of reinstatement, consistent with the ICC-SRCC fee schedule.
 - b. Certification Reinstatement Decision. Within thirty (30) days of the conclusion of its review of a Reinstatement Request, or as soon as

practical, the Certification Commission will prepare and issue a written Reinstatement Decision and Order explaining its decision with respect to the Request. The final Decision and Order will indicate: whether the Reinstatement Request is granted, denied, or continued to a later date; whether all certification deficiencies and Policy violations identified in the Deficiency and/or Violation Decision have been appropriately remedied and resolved; or, whether additional deficiencies or Policy violations exist justifying the continuation of the Suspension Order, and/or issuance of additional certification actions. If appropriate, the Decision and Order will indicate any conditions of ICC-SRCC Small Wind Certification.

8. Revocation Order/Reapplication Petition. Two (2) years after the date of a final Certification Revocation Decision and Order issued under this Policy, the MWT Manufacturer, or its authorized designee, may submit a Petition to Reapply for Certification (Reapplication Petition) to the ICC-SRCC Executive Director for review by the Certification Commission.
 - a. Contents of Reapplication Petition. The Reapplication Petition must include the following information: a statement of the reasons that support or justify the acceptance of the Reapplication Petition, and copies of any relevant materials which support the Petition. The Certification Commission may require any additional information or documents related to its review of the Reapplication Petition. At its discretion, ICC-SRCC shall determine fees for reinstatement in accordance with the *ICC-SRCC Fee Schedule for Small and Medium Wind Certification*.
 - b. Certification Reapplication Decision. Within thirty (30) days of the conclusion of its review of a Reapplication Petition, or as soon as practical, the Certification Commission will prepare and issue a written Reapplication Decision and Order explaining whether the Petition is accepted, denied, or continued to a later date. If the Reapplication Petition is accepted, then the MWT Manufacturer, or its authorized designee, may submit a new ICC-SRCC Notice of Intent to Submit an Application for ICC-SRCC Medium Wind Certification.

16. DEFICIENCY AND VIOLATION DECISION APPEALS

A Participant may appeal an adverse Certification Deficiency or Policy Violation Decision, or any part thereof, to the ICC-SRCC Appeals Committee, pursuant to the terms of the *ICC-SRCC Complaint Policy*.

17. VOLUNTARY TERMINATION

A Participant may elect to voluntarily terminate its Certification by submitting a written request for certification termination to ICC-SRCC. Should a Participant attempt to

voluntarily terminate Certification during the course of any complaint, dispute, or deficiency review, ICC-SRCC reserves the exclusive right to continue the matter to a final resolution, consistent with this Policy. In its sole discretion, ICC-SRCC may require that a Participant agree to certain terms and conditions related to the voluntary termination of Certification.

Upon ICC-SRCC's acceptance of a voluntary termination request, the Certification Agreement with ICC-SRCC will be terminated, the MWT will be removed from the listing of ICC-SRCC certified turbines on the ICC-SRCC website, and notice of the voluntary certification termination will be published on the ICC-SRCC website. The Participant is no longer authorized to use the ICC-SRCC Medium Wind Certification mark(s) and consumer product labels, and may not make any representations concerning Certification by, or affiliation with, ICC-SRCC with respect to the MWT that is the subject of the Certification termination.

Annex A

Certification Process Summary

The following is an informative summary of the ICC-SRCC Medium Wind Certification process.

1. Applicant will acquire from the ICC-SRCC website:
 - a. The **ICC-SRCC Medium Wind Turbine Certification Policy**;
 - b. The **Notice of Intent to Submit an Application for MWT Certification form**; and,
 - c. The **ICC-SRCC Configuration Description form**.
2. ICC-SRCC will receive a ICC-SRCC Notice of Intent to Submit an Application (Notice of Intent) along with the ICC-SRCC Configuration Description Form and Preliminary Review Fee
3. ICC-SRCC 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 ICC-SRCC, 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 authorize ICC-SRCC to publicly list the Applicant's name, MWT model and Application Status, such information will be published on the ICC-SRCC website.
6. Testing organization will sign an Agreement with ICC-SRCC, agreeing to perform appropriate tests on the turbine to be certified, and agreeing to the test plans and ICC-SRCC test site evaluation.
7. After testing, analysis, and reporting are complete, Applicant must submit to ICC-SRCC:
 - a. A complete Certification Application (an Application form will be provided by the ICC-SRCC);
 - 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. ICC-SRCC Director of Technical Services and other experts as needed, will evaluate Application materials, test reports, and the structural design analysis report, and communicate with the Applicant and testing organization to resolve issues.
9. Director of Technical Services will send a technical evaluation report to the Certification Commission, documenting the technical evaluation results for the Certification Commission.
10. Certification Commission will review the Director of Technical Services report, and determine whether the Certification Application is granted or rejected.
11. ICC-SRCC will grant certification to the MWT, or issue a rejection of the Certification Application describing the reasons for such determination.
12. If certification is granted, ICC-SRCC will prepare Certificate(s) signed by the ICC-SRCC Executive Director and Summary Report(s) for publication on the ICC-SRCC Internet site and distribution by the Certification Holder.

Annex B
ICC-SRCC Consumer Product Label Format

Manufacturer: **Sample Windpower**

Wind Turbine Model: **XXXX** (480 VAC, 3-phase, 60 Hz)

Certification Number: **SWCC-xx-xx**



Rated Annual Energy

Estimated annual energy production assuming an annual average wind speed of 5 m/s (11.2 mph), a Rayleigh wind speed distribution, sea-level air density and 100% availability. Actual production will vary depending on site conditions.

17,500
kWh/year

Rated Sound Level

The sound level that will not be exceeded 95% of the time, assuming an annual average wind speed of 5 m/s (11.2 mph), a Rayleigh wind speed distribution, sea-level air density, 100% availability and an observer location 60 m (~ 200 ft) from the rotor center.

41.1
dB(A)

Rated Power

The wind turbine power output at 11 m/s (24.6 mph) at standard sea-level conditions.

9.6
kW

Certified to be in Conformance with:
AWEA Standard 9.1 - 2009

For SWCC Summary Report, Certificate and certification status visit:

www.smallwindcertification.org

Annex C: ICC-SRCC MWT Certification Summary Report Formats

MWT Power Performance Certification

The MWT Power Performance Summary Report will include a summary of the test results including, but not limited to, the following elements:

1. An introduction that includes a description of the field testing, the testing organization and the configuration of the tested MWT;
2. A table of Peak Power, Reference Power and Reference Annual Energy;
3. tabulated annual energy production for air density at sea level;
4. graph of annual energy production for air density at sea level;
5. graph of the measured power curve for air density at sea level;
6. tabulated measured power curve for air density at sea level;
7. graph of C_p as a function of wind speed for air density at sea level; and,
8. a scatter plot of mean, standard deviation, maximum, and minimum power output as a function of wind speed.

MWT Acoustic Performance Certification

The MWT Acoustic Performance Summary Report will include a summary of the test results including, but not limited to, the following elements:

1. An introduction that includes a description of the field testing, the testing organization and the configuration of the tested MWT;
2. table of reference sound pressure level;
3. table of apparent sound power level $L_{WA,10m,k}$ at integer wind speeds at 10 m height;
4. plot of measured sound pressure levels (total noise and background noise);
5. table and plot of sound power spectrum in 1/3-octaves;
6. results of tonality analysis;

Annex C

Policy and Procedures Concerning Independence and Impartiality of Testing Personnel

A. Introduction and Purpose

Testing laboratories and facilities (test facilities) operated by MWT Manufacturers seeking ICC-SRCC small wind certification of its product(s) must ensure that key personnel involved in the testing of MWTs (testing personnel), and the reporting of MWT test data, are impartial and free from any undue commercial, financial, and other pressures that might influence their technical and independent judgment. To that end, all test facilities must establish policies and procedures which: identify possible or actual influences which may create a conflict or undue influence on testing personnel; and, identify rules to prevent or limit such influences on those involved in the testing of MWTs and related activities.

The purpose of such policies and procedures is to ensure confidence in the test facility's competence, impartiality, judgment, and operational integrity.

B. Internal and External Influence

A test facility must ensure that all owners, managers, and employees, contractors, and other third parties do not influence, or otherwise affect the validity or impartiality of, the activities and judgment of testing personnel. In order to accomplish this, the test facility must implement and satisfy the following procedures and requirements:

1. Test facility personnel involved in the design, development, and manufacture of the turbine are clearly identified in the related project report and documentation;

AND

2. When conducting tests and collecting data concerning a turbine, the test facility will only assign and use testing personnel who were not, and will not be, involved in the design, development, or manufacture of that turbine, and who are otherwise competent and qualified to perform such testing and data collection activities (approved testing personnel);

OR

In the MWT Manufacturer is unable to identify appropriate testing personnel under this Policy, and intends to use other personnel or contractors who do not qualify for approved testing personnel status, the test facility must:

- a. Ensure that appropriate training concerning potential conflicts and undue influence is provided to such test facility personnel or contractors; and,

- b. Engage a qualified, independent third party evaluator to review and approve all test results and underlying data, and to confirm, modify, or reject such results and data.

C. Training of Testing Personnel/Activity Prohibitions

The test facility is responsible for ensuring that its testing personnel understand the importance of maintaining the competence, integrity, judgment, and operations integrity of the facility and related testing activities. In this regard, the test facility must take appropriate steps to ensure that its testing personnel not act in any manner, or engage in any activities, that may influence his/her independent judgment, or otherwise cast doubt upon its testing activities or the validity of test results or reports, including personnel training and the required disclosure of any involvement in any activities, organizations, or businesses that may relate to the interests or activities of the test facility.