

Eligibility Requirements for Midsize Turbines Under NYSERDA's On-Site Wind Turbine Incentive Program (PON 2097)

Attachment I

For the purpose of consideration for NYSERDA incentives, midsize wind turbines will be divided into two categories. Turbines with a rotor swept area of at least 200 m² and not greater than 1,000 m², and turbines with a swept area greater than 1,000 m². The 200 m² threshold is consistent with the definition of a small wind turbine according to IEC 61400 standards. Turbines below the 200 m² threshold will be subjected to the criteria described in PON 2097.

A turbine with a rotor swept area of at least 200 m² and not greater than 1,000 m² will be considered for eligibility to receive funding under PON 2097, if it can be shown that it meets the acceptance criteria outlined in A, B, or C. Paths B and C were designed for turbines with a current history of performance.

Turbines with a rotor swept area greater than 1,000 m² will be required to provide evidence of certification according to IEC Standards as specified in A.

- A. Documents providing evidence of certification to appropriate IEC Standards
 - 1. Power Curve Certification to IEC 61400-12-1 or equivalent standard
 - 2. Type Certification to IEC 61400-1, IEC 61400-22, or equivalent standard

- B. Documents providing evidence of Design Evaluation and operational history (meet all requirements below)
 - 1. Power Curve Certification to IEC 61400-12-1 or equivalent standard
 - 2. Up-to-date Design Evaluation to IEC 61400-1 or equivalent standard.
 - 3. Evidence of an extensive operational history (all of the requirements below)
 - i. At least 500,000 hours of fleet operation
 - ii. At least 25 operating wind turbines
 - iii. At least 2 years of operation from 5 wind turbines
 - 4. Documentation of the following:
 - i. Any design changes to the turbine since the initial design
 - ii. Any (individual) major failures of the turbine design, including failure analysis report
 - iii. Any serial failures of the operational fleet, and remedial actions taken

- C. Documents providing evidence of design validation of all load cases specified in 61400-1 and operational history (meet all requirements below)
 - 1. Power Curve Certification to IEC 61400-12-1 or equivalent standard
 - 2. Design validation of a minimum of Load Cases as specified by 61400-1 by an independent competent Engineering Firm (not an accredited certification body) or by an independent Professional Engineer

3. Evidence of an extensive operational history (all of the requirements below)
 - i. At least 500,000 hours of fleet operation
 - ii. At least 25 operating wind turbines
 - iii. At least 2 years of operation from 5 wind turbines
4. Documentation of the following:
 - i. Any design changes to the turbine since the initial design or design evaluation or type testing
 - ii. Any (individual) major failures of the turbine design, including failure analysis report
 - iii. Any serial failures of the operational fleet, and remedial actions taken

Other Considerations and Provisions

- The operational history thresholds in criteria B and C represent a conservative case, and may be adjusted in the future based on statistical analyses and/or greater experience throughout the industry with respect to midsize wind turbines.
- At the discretion of NYSERDA, turbines with a rotor swept area greater than 1,000 m² may be considered according to criteria similar to B and C, but with higher thresholds to demonstrate operational history.
- All certification documents, Engineering Firm/Professional Engineer-approved designs and/or operational history must be from the same make and model as the applied-for turbine, including rotor diameter, 50/60 Hz grid compatibility, and major components (e.g., gearbox, generator, yaw and pitch control systems, and tower). If certification documents, approved designs, and/or operational history are for a different version of the same make and model, the turbine may still be considered, provided that the manufacturer provide evidence that (1) design changes are not mechanical in nature (e.g., in case of difference in 50/60 Hz grid compatibility), or (2) design changes have been approved by a competent Professional.
- All certification documents must be up to date. If certification documents are out of date, the turbine may still be considered, provided that the manufacturer provide a comprehensive record of any design changes (and manufacturing changes, in the case of Type Certification) since the out-of-date certification document was issued. Any major changes (i.e., mechanical changes, especially to major components) will be required to be approved by a competent Professional.
- Design and/or manufacturing changes requiring approval will be at the discretion of NYSERDA and its contractor(s).
- In addition to the above requirements, midsize turbines will be required to demonstrate that they are capable of meeting New York State Standard Interconnection Requirements, including the electrical standards set in IEEE 1547, appropriate relay protection fault time to disconnects, and power quality

factors. Midsize wind turbine manufacturers will be expected to work with the local utility to properly address the electrical concerns of the system, so that it is compatible with the local grid.

- Additional supporting information for midsize turbines will include:
 - Copy of the warranty agreement for the applied-for model
 - Specifications for the applied-for model, including tower design and IEC 61400-12-1 power curve
 - Copy of any certification/credential cited in the application and the specification used during certification/credential activity.
 - Design documentation from licensed engineer's technical evaluation.
 - Design changes since credentialing.
 - Any other information requested by NYSERDA or its contractor(s) as deemed necessary.