

Appendix 1

Minimum Technical Requirements for Commonwealth Organics-to-Energy Projects

All projects must demonstrate compliance with the Minimum Technical Requirements set forth in this attachment. These requirements are not intended to be all-encompassing, nor is this attachment intended to be a substitute for engineering specifications or for safety requirements. Site specific conditions and/or local requirements may require additional or specific technical requirements not contained in the following minimum requirements. MassCEC reserves the right to withhold Grant Installments to any project that does not satisfy the Minimum Technical Requirements.

Minimum Technical Requirements	
Installation General Requirements	<p>Project electrical work must be performed by a licensed professional electrician.</p> <p>Project components must be installed according to the manufacturer’s instructions and in compliance with all applicable codes and standards including:</p> <ul style="list-style-type: none"> • The provisions of the National Electric Code (most recent available at time of installation) • Local, state, and/or federal building laws, codes and practices <p>Electric utility interconnection agreement; authorization to interconnect must be in place at the time of interconnection to the utility grid.</p> <p>All pertinent permits and inspections must be obtained and copies kept on file as required by local codes and/or state law.</p> <p>Installed equipment may not be removed from the site for its useful design life as specified in the Agreement or terms and conditions.</p>
Mandatory Commissioning	<p>The project must be fully commissioned and a commissioning report must be prepared. Commissioning is the process of ensuring that all systems are designed, installed, functionally tested, and capable of being maintained and operated according to the approved design and owner’s operational needs. At a minimum, the commissioning report should include: inspection process and findings, system and component testing process and findings, and initial system performance findings.</p> <p style="text-align: right;"><i>(continued)</i></p>

<p>All Equipment</p>	<p>The equipment and components that comprise the project must have the following characteristics:</p> <ul style="list-style-type: none"> • All equipment funded in part or in whole by MassCEC must be new and of a design suitable for the proposed installation. • UL-listed and compliant with Institute of Electrical and Electronics Engineers standards • Minimum one-year full warranty or comparable service contract coverage to the purchaser against defects, failures, breakdowns, or excessive degradation of electrical output. The warranty shall cover the full cost, including labor, of repair or replacement of defective components or systems. The warranty shall cover the full cost, including labor, of repair or replacement of defective components or systems. The warranty shall also apply to the automated reporting system discussed below.
<p>Reporting to MassCEC's Production Tracking System (PTS)</p>	<p>Projects with electrical output must include an automated reporting system that meets the requirements described below, and must report energy generated by the project to the MassCEC PTS for a minimum of five years beginning on the date of commercial operation of the Project.</p> <p>To facilitate automated reporting to the PTS, the facility must have a dedicated meter that:</p> <ul style="list-style-type: none"> • is readily accessible and easily understood by the system owner; • measures the system's AC output; • is separate from the utility billing meter and does not interfere with utility billing or net-metering; • is a standard utility "revenue quality" meter that conforms to applicable American National Standards Institute C-12 standards and is installed on the output side of the renewable system's isolation transformer; and • has a visible display of cumulative energy produced by the renewable energy system and is available for periodic testing and/or re-calibration, if necessary. <p>There are three options for establishing automated reporting to the PTS:</p> <ol style="list-style-type: none"> 1) Vendor-Supplied System: A Data Acquisition System ("DAS") that has local PTS-incorporated Automated Reporting features. 2) Vendor-Supplied Service: A DAS with a service that offers remote monitoring that has PTS-incorporated Automated Reporting features. 3) Sample Source Code Integration: A DAS vendor or service provider can customize the software of their system to incorporate this data transfer functionality. <p>Contact your vendor or contact MassCEC for a list of products that have incorporated automated reporting capabilities.</p> <p>More general information about the PTS and DAS providers can be found at: http://www.masscec.com/get-clean-energy/production-tracking-system</p> <p>More information about Automated Reporting requirements can be found at: www.masscec.com/pts.</p>