



Residential Central Pellet Heating Program Program Manual

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The Massachusetts Clean Energy Center (MassCEC) provides rebates for the installation of high-efficiency, low emissions central pellet boilers and furnaces (“Central Heater”) in residential applications through this Residential Central Pellet Heating Program (“Program”).

This Residential Central Pellet Heating Program Manual (the “Program Manual”) describes the process for applying for a rebate, the eligibility requirements, and the rebate levels. The capitalized terms used in the Program Documents (Program Manual, Participant’s Agreement, Application, and Award Letter), including key definitions and definitions pertaining to eligible technologies, are listed in Section 4 of the Program Manual. Program Documents and further program information are located at <http://www.masscec.com/solicitations/residential-central-wood-pellet-heating>.

1. How to Apply for a Rebate

Step 1-Submit Application for Rebate: Applications must be submitted to MassCEC prior to starting Project construction and construction may not commence until the Award Letter is received. The Application should be completed and submitted by the Primary Installer with the assistance and approval of the System Owner. Application documents must be emailed to biomassthermal@masscec.com. To expedite the review, please include “CPH Application: *System Owner Surname*” in the subject line. Both the Primary Installer and System Owner should review all submitted information. The Application documents include the following:

1. Application – Excel document available at <http://www.masscec.com/solicitations/residential-central-wood-pellet-heating>;
2. Participation Agreement signed by the System Owner and Primary Installer – PDF available at <http://www.masscec.com/solicitations/residential-central-wood-pellet-heating>;
3. Electric bill from Project Site clearly displaying the name of the utility, service address (not necessarily the mailing address) and the name of the current resident;
4. The summary report from the Manual J heat load calculation – see Section 2.3;
5. Written quote from a bulk pellet delivery supplier that includes the price per ton of pellets as well as any applicable delivery fees to the Project Site; and
6. Professional Engineer stamped designs for site built pellet storage containers.



Step 2-Application Evaluation and Awarding: Upon receiving the Application, MassCEC program staff will send an email confirming the Application has been received. A second email will indicate:

- the Application is complete and has been accepted. The Award Letter and Project Completion Form will be attached to this email;
- the Application was incomplete and further information is needed; or
- the proposed Project is ineligible and has been rejected.

Applications will be evaluated to ensure that the Project will meet the Eligibility and Project Requirements stated in this Program Manual. MassCEC reserves the right to accept, assign inspections, or reject Applications based on completeness, qualitative criteria, and available funding; to make no Awards; to award less than the Applicant requests; and/or to award less than the maximum amount of funds potentially available through this Program.

MassCEC will notify Applicants of their Application status within four weeks of receipt of a complete Application barring extenuating circumstances. If the Application meets all requirements of this Program and funding remains available, MassCEC will issue an Award Letter to the System Owner via email which will provide details on the Award amount, and address to which the payment will be sent. MassCEC will also attach a Project Completion Form, which will be submitted to MassCEC upon Project Completion.

Step 3-Complete Project: Project installation may commence only after receipt of the Award Letter. Projects must be completed within four (4) months of the Award Date on the Award Letter for Projects at existing buildings and within six (6) months for Projects at new construction buildings.

Upon Project Completion, the Primary Installer in cooperation with the System Owner will complete and submit the Project Completion Form and supporting documentation to MassCEC, including:

1. Project Completion Form; and
2. Pictures of the new Pellet Central Heater and pellet bulk storage system installed.

This documentation should be submitted by email to biomassthermal@masscec.com with “CPH Application: *System Owner Surname*” in the subject line.

Step 4-Receive Rebate Payment: Rebates can be paid to the System Owner, Primary Installer, or manufacturer/distributor provided that the System Owner provides permission in the Application. Upon approval of the Project Completion Documentation, payment will be made to the designated Payee within four (4) weeks.



2. Eligibility & Requirements

System Owners, Primary Installers, and Projects must meet the following eligibility requirements.

2.1. Project Site Eligibility

Project Sites must be located in a service territory that contributes to the Renewable Energy Trust. This includes locations served by the following electric utilities: National Grid, NSTAR, Unitil, WMECO, or one of the following Municipal Lighting Plants: Ashburnham, Holden, Holyoke, Russell or Templeton. Project Sites must be residential properties; new or existing single family homes or buildings with up to four units are eligible for this program. Project Sites must be occupied year-round.

Project installation may not commence until after the Application has been approved by MassCEC and System Owner has received an Award Letter; Projects that have already commenced construction are not eligible for the rebate. The rebate may be combined with any other local, state or federal incentive and Applicants are encouraged to do so where possible. Grantees must declare this rebate if applying for a MassSave HEAT Loan.

2.2. Primary Installer Requirements

Installer Accreditation

Prior to submitting Applications, Primary Installers participating in the Program must read and submit a signed copy of the Primary Installer Agreement (available at <http://www.masscec.com/solicitations/residential-central-wood-pellet-heating>) and provide MassCEC with a letter or certificate from the Central Heater manufacturer or distributor verifying that they have successfully completed training for the products they plan on installing under the program. Primary Installers may submit additional brand certifications throughout the Program.

Design Review

MassCEC may elect to consult an independent third party to review a Project's design and ask the Primary Installer to describe the sequence of operations including all actions that initiate demand for heat (space heating, domestic hot water, etc.) and all actions that shut off operations.

Installation Inspections

MassCEC will send a third party inspector to the site of each Primary Installer's first two Project Completions. MassCEC reserves the right to inspect subsequent Project Completions at random or due to suspected issues. If the inspector detects an issue with a heating system installation, MassCEC reserves the right to suspend current Applications and/or stop accepting Applications from that Primary Installer and/or its subcontractors.



2.3. Project Requirements

In order to be eligible for a rebate, Projects must meet the following requirements:

Equipment Requirements: Manufacturers must submit Central Heater emissions test result data to biomassthermal@masscec.com for verification by MassCEC staff. MassCEC may require submission of additional documentation that the proposed Central Heater meets the following Equipment Requirements. MassCEC will post a list of eligible equipment manufacturers listed at <http://www.masscec.com/solicitations/residential-central-wood-pellet-heating>. This list is not comprehensive and additional Central Heaters can be added at any time.

1. The Central Heater must have a Particulate Matter_{2.5} (2.5 micrometers or less) emissions rate of no greater than 0.10 lb PM_{2.5}/MMBTU¹ at nominal output.
2. The Central Heater must have a thermal efficiency of 80% or greater.²
3. The Central Heater must be capable of automatic startup in response to a demand for heat (electronic ignition).
4. The Central Heater must automatically modulate to lower output and/or turn itself off when the heating load decreases or is satisfied.
5. The Central Heater must have a multi-pass heat exchanger.
6. The pressurized portion of the Central Heater must be ASME certified.
7. The Central Heater must be designed for installation in a weatherproof, insulated space inside the residence, either in a basement or a room designed specifically to accommodate the heating system, although if space does not permit, it may be installed in a separate structure (Central Heaters designed for outdoor installation or tested to or designed for EPA test method 28 are not permitted).
8. The heating system must include a positive closure and/or fire extinguishing device and/or emergency disconnection device between the burn chamber and the bulk storage device to keep fire from reaching the pellet storage area and a grounded or anti-static fuel pipe connecting the boiler or furnace to the storage bin.
9. The system must adhere to all applicable federal, state and local building codes and regulations, safety standards and certifications.
10. Steam boilers are not eligible for this Program.
11. Central Heaters that are capable of burning multiple fuel types are not eligible for this Program.
12. Pellet burners that are installed on existing boilers are not eligible for this program.

¹ Emissions may be determined by an accredited third party testing laboratories such as EPA, ANSI in the United States or alternatively approved and recognized by authorities having jurisdiction in the United States, Canada, and/or the European Union.

² Efficiency is defined as the higher heating value (HHV) of wood. Efficiency rates may be determined by third party testing laboratories approved and recognized by authorities having jurisdiction in the United States, Canada, and/or the European Union.



Thermal Storage Requirements

13. All Projects must incorporate thermal storage unless they have submitted and had approved by MassCEC independent third party test results documenting that the heating system is designed for and capable of:
 - a. Modulating below 20% of full capacity;
 - b. Maintaining a Particulate Matter_{2.5} (2.5 micrometers or less) emissions rate of no greater than 0.10 lb PM_{2.5}/MMBTU³ at minimum capacity; and
 - c. Maintaining thermal efficiency of 80% or greater at minimum capacity.Manufacturers may submit independent third party test results to MassCEC at biomassthermal@masscec.com for review by MassCEC and/or our independent consultant.
14. The thermal storage system must have a minimum of 80 gallon capacity and an additional one (1) gallon of capacity per 1,000 BTU/hr of nameplate heating capacity being installed over 80,000 BTU/hr up to 119 gallons. For example, a 65,000 BTU/hr heater would require 80 gallons of thermal storage. A 100,000 BTU/hr heater would require 100 gallons of thermal storage, and a 140,000 BTU/hr heater would require 119 gallons of thermal storage.
15. The thermal storage tank must have controls integrating the Central Heater and decrease the number of Central Heater starts and stops.
16. Thermal storage tanks must have a minimum of R12 insulation.
17. Horizontal thermal storage tanks are not permitted.

Bulk Pellet Storage and Delivery Requirement

18. The system **must** have a bulk pellet storage unit sized to contain between **3 and 5 tons** that automatically supplies the boiler or furnace with pellets by pneumatic hose or auger. The bulk storage unit must be capable of receiving bulk delivery via pneumatic hose from a delivery truck. The delivery point must be located 80 feet or less from the street or driveway and accessible to bulk pellet delivery trucks. Purchased pellet storage silos as well as site built pellet storage units are acceptable. Site built bulk pellet storage units will require a Professional Engineer stamp and approval by the local building inspector. Outdoor pellet silos designed specifically for the purpose of storing wood pellets are permitted.
19. Grantees **must** take bulk delivery.
20. Pellets **must** be premium wood pellets certified to the Pellet Fuels Institute (PFI) Standards Program or ENPlus and in accordance with Central Heater manufacturer fuel specifications. Using poor quality fuel can decrease efficiency and boiler/furnace lifetime as well as void the manufacturer warranty.
21. Site-built pellet bulk storage units **must** be labelled with clearly visible, permanent signs at access points stating that access may only be made by qualified professionals.
22. Access points to site-built pellet bulk storage units **must** be locked at all times when the storage unit is not being accessed.

³ Emissions may be determined by an accredited third party testing laboratories such as EPA, ANSI in the United States or alternatively approved and recognized by authorities having jurisdiction in the United States, Canada, and/or the European Union.



- 23. Only professionals utilizing appropriate safety procedures should enter pellet bulk storage units. Residents should never enter the unit and should ensure that family members do not enter the units.
- 24. Bulk storage may be a requirement of your home insurer.

Heat Load Calculation and Sizing Requirements

- 25. The Central Heater must be designed to meet at least 80% of the *annual* heating load of the building it is serving (kBTU).
- 26. The Central Heater may not be sized with a peak heating capacity (kBTU/hr) greater than 110% of the Manual J heat load calculation.
- 27. Primary Installers must submit the summary page of the Manual J heat load calculation of the building’s peak heat load at the 99% dry bulb heating design temperature for the nearest ACCA location. All listed Massachusetts locations and their heating design temperatures are provided below. Heating set temperatures may be between 68 and 72 degrees Fahrenheit.

Massachusetts Location	Heating Design Temperature in Degrees Fahrenheit
Boston	12
Clinton	2
East Falmouth	14
Fall River	9
Framingham	6
Gloucester	5
Greenfield	-2
Lawrence	0
Lowell	1
New Bedford	9
Pittsfield	-3
Springfield	0
Taunton	9
Weymouth	11
Worcester	5

Energy Efficiency Requirements

- 28. All existing residences must have an energy efficiency audit completed within the past 24 months or plan to undertake an efficiency audit within six months. MassCEC highly recommends that priority recommendations from the audit are implemented. For qualifying locations, free residential energy audits can be scheduled through MassSave at www.masssave.com.

**Warranty**

29. The Primary Installer must provide the System Owner with a one year full cost warranty including labor, repair or replacement of defective components or systems, and an additional two year parts warranty.

Monitoring

30. To be eligible for an Award under this Program, the System Owner must agree to allow metering and monitoring to be conducted on their Project for up to 24 months after installation, if requested. The System Owner would be required to submit utility and fossil fuel bills for two years prior to installation (for existing buildings) and for the duration of the performance monitoring. Monitoring equipment would be paid for and installed directly by contractors to MassCEC with no direct cost to the System Owner. Data would be collected and analyzed for program evaluation purposes and will not impact the Award received by the Grantee.



3. Rebate Structure

Funding is available on a first-come, first-served basis until funds are exhausted or until **September 30, 2015**, whichever comes first. The rebate is for 45% of qualifying project costs (“Eligible Project Costs”) or up to \$10,000, whichever is less.

Projects that are required to install or choose to install thermal storage that meet the requirements outlined in Section 2.3 are eligible for the Thermal Storage Adder of the lesser of the installed cost of the thermal storage unit or \$2,000.

Rebate amounts and limits are summarized in the table below:

	Rebate Amount	Rebate Limit
Base Rebate	45% of Eligible Project Costs	\$10,000
Thermal Storage Adder	100% of Thermal Storage Unit Installed Cost	\$2,000

Eligible Project Costs include the equipment costs and any installation work for the Central Heater, the bulk pellet storage unit (and engineering or site built storage units), the pellet conveyance system from the bulk storage unit to the boiler/furnace, piping from the boiler/furnace to the thermal storage system, and piping from the boiler/furnace to the thermal storage system to the distribution system pumps, less any non-MassCEC rebates, grants, or tax credits. Distribution system pumps, distribution equipment and upgrades, and demolition and disposal of existing equipment are not eligible project costs. Please contact the Program for clarification of what qualifies as Eligible Project Costs.

Primary Installers will be asked to provide a project cost summary on the Project Completion Form and legally certify that the rebate amount is based on Eligible Project Costs. MassCEC has the right to audit project cost claims throughout the Program on a random basis or if issues are suspected. MassCEC will give Projects 15 days of notice prior to audit. Primary Installers that have misrepresented Eligible Project Costs will be barred from future participation in the Program.

Contact Information: For questions on the Residential Central Pellet Heating Program, please visit the Program website at <http://www.masscec.com/solicitations/residential-central-wood-pellet-heating> or email the Program mailbox at biomassthermal@masscec.com.



4. Program Definitions

Applicant: The Applicant is the Primary Installer who prepares and submits the Application on behalf of the System Owner. The Primary Installer is responsible to work with the System Owner to prepare and submit the Application.

Applicant Parties: The Primary Installer and the System Owner, who together are responsible for providing the content of and signing the Application.

Application: Application submitted on behalf of System Owner by Primary Installer for an Award.

Award: Rebate funding awarded to a System Owner under the Program based on a submitted Application that has been approved by MassCEC.

Grantee: The System Owner once the Award is made.

Payee: The Payee is the designee to receive the rebate for a Project that has achieved Project Completion. A System Owner may choose to have its Award paid directly to the Primary Installer. Payment is made for the work performed on the Project and does not convey ownership rights to the installed system.

Primary Installer: The Primary Installer is the primary entity responsible for the installation of the Project. The Primary Installer is directly responsible for turnkey project management, submission of the Application, and installation work, although aspects of the installation work may be sub-contracted.

Program Documents: The Program Documents consist of the Program Manual, Application, Participation Agreement, and Award Letter.

Project: The Central Heater system.

Project Site: The residential building being served by the Project.

Project Completion: The status of a Project at the stage when major Project components have been fully installed. Supplemental service or modifications do not change the Project Completion status.

Project Completion Date: The date when major components have been fully installed. Supplemental service or modifications do not change the original Project Completion Date.

System Owner: An individual who, together with the Primary Installer, applies to MassCEC for a Program rebate. The System Owner is the owner of the Project that is supported by the Program rebate.



5. GENERAL CONDITIONS

MassCEC reserves the right to reject any Applications or Projects.

5.1 Notice of Public Disclosure

5.1.1 General Statement

As a public entity, MassCEC is subject to Massachusetts' Public Records Law, codified at Chapter 66 of the Massachusetts General Laws. Grantee acknowledges and agrees that all Program Documents will be public records subject to disclosure. Thus, MassCEC urges Applicant Parties to carefully consider what documents, materials, data and other information is submitted to MassCEC in connection with an Application.

5.1.2 Procedures for Handling Documents Classified as "Sensitive Information"

An Applicant Party may assert a claim of confidentiality for part or all of the information submitted to MassCEC by following the instructions on the Notice of Confidentiality Cover Letter, which can be requested from MassCEC.

5.2 Contractual Requirements

The Participation Agreement defines the legal terms that will govern the Award and sets forth the respective roles and responsibilities of the parties specifically as they relate to the Project that is the subject of the Award. The Participation Agreement is designed to be executed upon submitting an Application. This contract language is non-negotiable.

No grant funds may be used to pay rebates for Projects that reach Project Completion prior to the program launch date or after the program deadline.

5.3 Waiver Authority

MassCEC reserves the right, at its sole discretion, to waive minor irregularities in submittal requirements, to request modifications of the Application, to accept or reject any or all Applications received, and/or to cancel all or part of this Program at any time prior to Awards.

5.4 Disclaimer

This Program Manual does not commit MassCEC to award any funds, pay any costs incurred in preparing an Application, or procure or contract for services or supplies. MassCEC reserves the right to accept or reject any or all Applications received, negotiate with all qualified Applicants, cancel or modify the Program Manual in part or in its entirety, or change the Application guidelines, when it is in its best interests.

5.5 Changes/Amendments to the Program Manual

The requirements listed herein are subject to change without notice to potential Applicant Parties. This Program Manual has been distributed electronically using MassCEC's website. It is the responsibility of Applicant Parties to check MassCEC's website for any addenda or modifications to the Program Manual to which they intend to respond. MassCEC, the Commonwealth of Massachusetts, and its subdivisions



accept no liability and will provide no accommodation to Applicants who submit an Application based on an out-of date Program Manual and/or related document.