



Electrification and Weatherization

WE ARE MASS SAVE®:



We look forward to hearing from you

Please put all your questions into the questions section with this icon.



Q&A





Governor Baker signs climate legislation to reduce GHG emissions, protect environmental justice communities



Law will combat climate change while **growing the economy**



The Commonwealth of Massachusetts has set a goal to reach **net-zero emissions by 2050**



**Conversion from
fossil fuel to
electricity**



Aligned with a shift
toward a cleaner
electrical grid



Path to reducing
GHG emissions

Electrification encompasses more than just the energy efficiency programs, but electrifying Massachusetts' built environment is a significant step in achieving the Commonwealth's goals.

How Do We Get There?

Installation of heat pumps is important to reach these electrification targets set by the commonwealth.

Plans include:

- Increasing incentives and pairing with customer education
- Contractor/vendor trainings
- Workforce development Investments
- Increased technical assistance and financial support for new and existing buildings minimizing overall energy consumption



Emphasis on Commercial Heating Systems

Development of prescriptive heat pump incentives for most commercial installations.

- Expanded equipment eligibility
- Increased incentives
- Greater engagement across the entire heat pump supply chain



Prescriptive C&I Heat Pumps

Air Source Heat Pumps

Includes single- and multi-head split systems, as well as central and RTU systems

\$2,500/ton

Air Source Variable Refrigerant Flow (VRF)

Includes systems larger than 5.4 tons that meet AHRI Standard 1230

\$3,500/ton

Ground Source Heat Pumps

Includes both closed and open loop systems

\$4,500/ton



Prescriptive C&I Heat Pumps (continued)

Fuel reduction/displacement

Integrated controls or BMS sequences to manage operation

Recommended switchover temperature of 30°F or below

Pathway is “fuel-blind”

Simplified savings estimates

Smaller projects in existing buildings

Project threshold: Reach out to your Sponsor

For more info and application go to:

[MassSave.com/ciheatpump](https://www.mass.gov/info-details/mass-save-com/ciheatpump)



Qualified Products List

Alignment with residential criteria for <5.4
tons

Aim to align with Energy Star 6.1

SEER to SEER2 transition

- 2022 criteria valid through 2023

Mass Save Qualified Product List

[MassSave.com/CIHPQPL](https://masssave.com/CIHPQPL)



Custom Pathway

Project-specific engineering estimates will still be appropriate for many heat pump applications, especially:

- Equipment not covered by prescriptive offer
- Large systems
- Complex internal distribution layouts

Significant support

Technical assistance (scoping studies)

Higher incentives



Heat Pump Installer Network

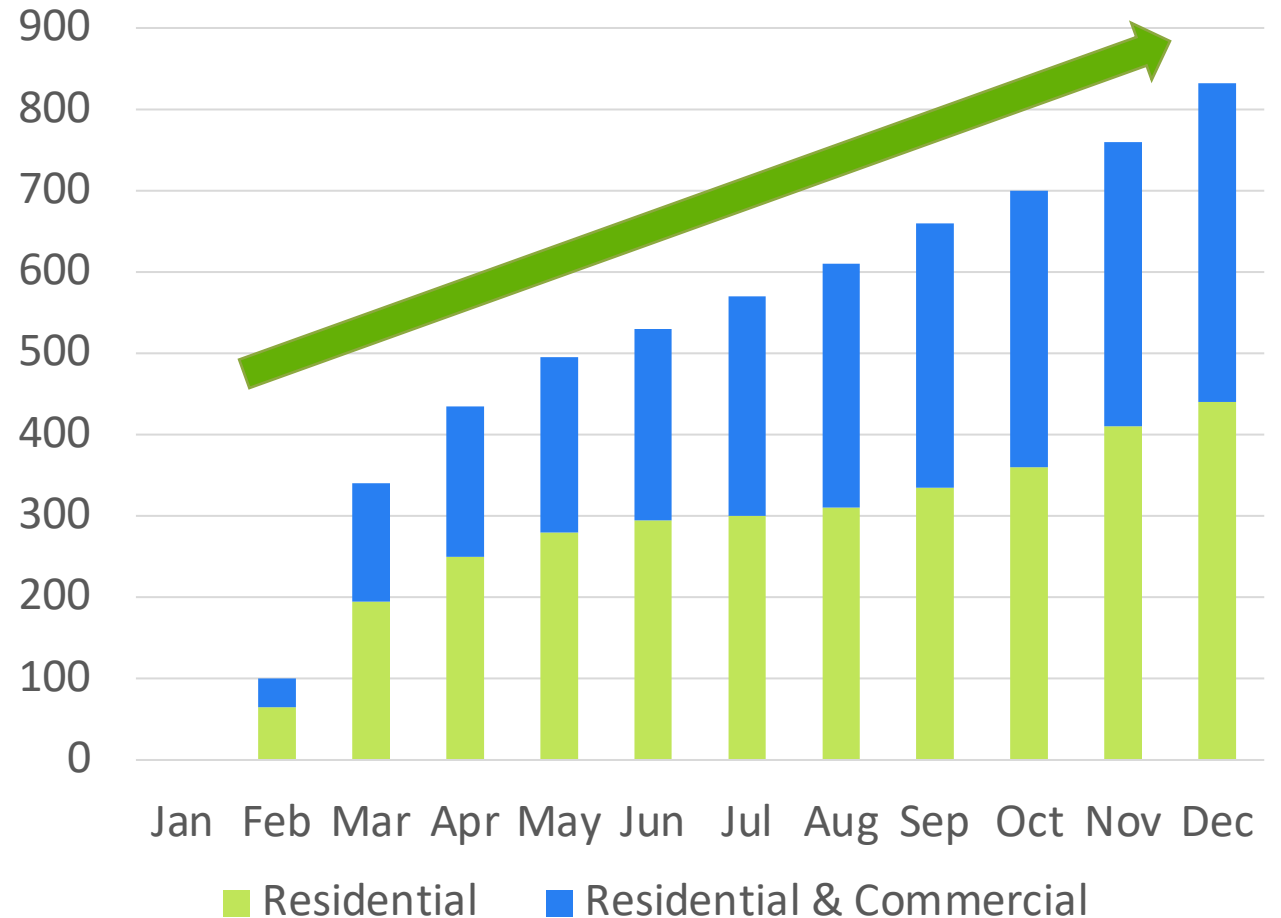
Increasing adoption of heat pumps and supporting the Commonwealth's climate, clean energy, and decarbonization goals

832 companies enrolled in 2022

Provides contractors with access to a wide range of resources & services

- Training
- Marketing materials & support
- Periodic communications about important news and developments
- Publicity – listing in the HPIN directory on MassSave.com/HPIN

Participating Contractors



Additional Electrification Efforts

Examples of additional efforts by the Sponsors, where cost-effective, include:

- Heat pump water heaters
- Induction cooktops
- Heat recovery chillers
- Electric vehicles and charging equipment
- Battery-powered lawn equipment
- Package terminal heat pumps
(expected launch April 2023)



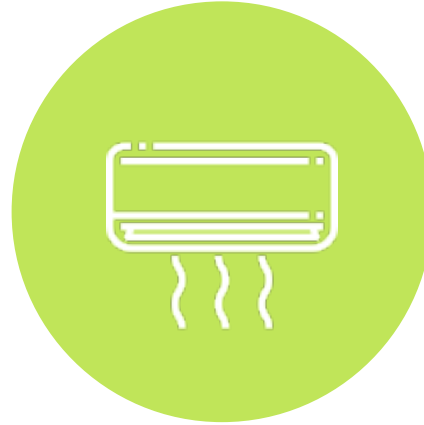
Weatherization





**Fuel and energy
price spikes**

encourage customers
to explore building
improvements

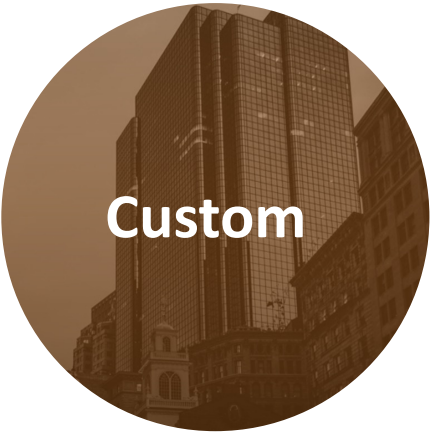


Right-sizing
electrification
requires a **tight
building envelope**



Customers need
incentives for **air
sealing and
insulation** now
more than ever

Weatherization (Wx) comes in three flavors



Custom

Greater than 100,000 square feet

Typical custom building energy modelling and savings calculations



Custom Express

8,000 to 100,000 square feet*

Simplified building energy modelling, streamlined incentive calculation



Prescriptive

Up to 8,000 square feet*

No building energy modelling – rebates and savings can be determined in advance of work

*Buildings with high ventilation loads (laboratories, restaurants with fume hoods, etc.) must go custom

The Custom pathway supports large projects

Custom pathway for projects greater than 100,000 sf or those with high ventilation loads.

[Contact your Mass Save Sponsor](#) and use the [Custom Project Application](#) for these projects.



The Custom Express Wx pathway simplifies certain projects

- For buildings 8,000 to 100,000 square feet in size. Includes all insulation, air sealing, weatherstripping.
- Same as custom process, but streamlined building analysis, using the [Custom Express Wx tool](#).
- Sponsors will be further improving the usability of the tool – reducing required inputs and overall creating a simpler application process for all parties.



The Prescriptive pathway is the fastest and simplest approach

New weatherization option for buildings **under** 8,000 sf:

- Incentives and savings are only dependent on the amount of insulation or air sealing installed and can be calculated in advance of work.
- No pricing list, just: “if you install ‘x’ amount of weatherization, we will pay ‘y’ amount of incentive”
- Available for attic air sealing, attic insulation, wall insulation



Prescriptive Incentives

Insulation Type	Rebate Amount
Attic Insulation	\$0.08 per R-value added per square foot*
Wall Insulation (including attic knee walls)	\$0.12 per R-value added per square foot*

Insulation Material	R-value per inch	Insulation Material	R-value per inch
Cellulose (dense pack)	3.2	Rigid foam (EPS)	3.9
Cellulose (blown)	3.7	Rigid foam (XPS)	5.0
Fiberglass (batt)	3.4	Rigid foam (Polyiso)	6.6
Fiberglass (blown)	2.8	Spray foam (open-cell)	3.6
Mineral wool (batt)	3.3	Spray foam (closed-cell)	6.5
Mineral wool (blown)	3.0	Other (specify R-value)	(specify)

Air Sealing	Rebate Amount
Attic Air Sealing	\$88 per hour of air sealing work

Attic Air Sealing Work Hours				
Attic Square Footage	≤ 500	501 to 800	801 to 1,100	Every +300 sq ft.
Work Hours	4	6	8	+2

If one or more of the following conditions exist, multiply the square footage of the attic by 1.25 and then enter the corresponding number of work hours:

Check if one or more of the following conditions apply:

≥ 6" loose insulation Cross batt insulation

≥ 6" mix of batt and loose insulation Truss construction

The following measure can be included to add corresponding air sealing work hours:

Attic Stair Cover (Thermadome)

3 hours

Application Screenshot

Project Information

Existing heating fuel type:		<input type="checkbox"/> Oil	<input type="checkbox"/> Propane	<input type="checkbox"/> Natural Gas	<input type="checkbox"/> Electric Resistance	<input type="checkbox"/> Heat Pump		
Weatherization Measure (Wall Insulation, Attic Insulation, Attic Air Sealing)	Other Identifying Details	Square Footage of Measure	Insulation Material	Previous R-value	Post R-Value	Inches	Air Sealing Work Hours	Rebate
<i>e.g., "Wall Insulation"</i>	<i>"East wall, Vinyl Siding"</i>	<i>"500"</i>	<i>"Dense Pack Cellulose"</i>	<i>"10"</i>	<i>"22.8"</i>	<i>"4"</i>	<i>"n/a"</i>	<i>"\$768"</i>
(Select One)			(Select One)			0.00		\$ 0
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Total:								\$ 0

Example Project #1

2,000 square feet of attic insulation with blown cellulose (3.7 per inch), 4-inch depth

$$\$0.08 * (3.7 * 4) * 2000 = \mathbf{\$2,368}$$

Same 2,000 square foot attic air sealed (allowing 14 work hours)

$$14 * \$88 = \mathbf{\$1,232}$$

Total incentive = \$3,600



Example Project #2

4,000 square feet of attic insulated with 6 inches of closed-cell spray foam (6.5 per inch) in floor joists, also used to air seal required features.

$$\$0.08 * (6.5 * 6) * 4,000 = \mathbf{\$12,480}$$

Additional air sealing incentive (28 allowed work hours):

$$28 * \$88 = \mathbf{\$2,464}$$

$$\mathbf{\text{Total incentive} = \$14,944}$$



Prescriptive Weatherization Application Process

Small Business/Turnkey Program Customer

Energy assessment identifies weatherization opportunity

Turnkey vendor installs weatherization measures

Turnkey vendor submits documentation to Sponsor

Other C&I Customer

Customer works with a licensed contractor to identify opportunity, notifies Sponsor, receives approval*

C&I customer works with contractor to install measures

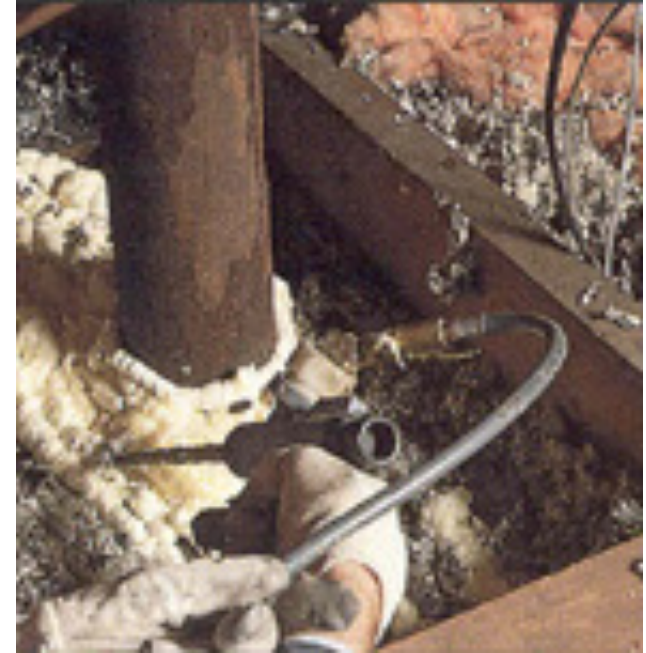
Contractor/customer submits application and documentation to Sponsor

*For customers of Berkshire Gas, Cape Light Compact, Liberty Utilities, or Unitil, notification and approval of the project is required prior to installation.

Prescriptive Wx Verification Checks

Attic Air Sealing	Attic Insulation	Wall Insulation
<ul style="list-style-type: none">• Top plates sealed• Kneewall transition bypass sealed• Plumbing wet wall(s) sealed• Chimney penetration(s) sealed• Recessed lights covered/sealed• Attic access(es) sealed• Drop soffit area(s) sealed• Mechanical chase(s) sealed• Attic level transition(s) sealed• Bath fans sealed• Air barrier properly installed over open cavity(ies)	<ul style="list-style-type: none">• Specified R-value installed• Insulation quality: no gaps, voids, or compressions (includes non-dense pack enclosed)• Dense pack: Installed material is dense packed	<ul style="list-style-type: none">• Specified R-value installed in open cavities• IR scan detects no gaps, voids, or compression

Weatherization work must be documented



The above are examples of some best practices for air sealing top plates, chimney penetrations, and wet wall penetrations – some of the features that Sponsors will verify in post-inspection, at their discretion.

If questions arise about Wx best practices or specific situations, contact the customer's Mass Save Sponsor.

Coming in 2023 for Prescriptive Weatherization

- Investigating weatherstripping to add as new prescriptive measure
- Further photographic guidance in prescriptive application



Weatherization FAQs

Can bulk attic spray foam insulation count for air sealing savings and incentive?

A: Yes, if air sealing features have been sealed, and the insulation isn't making a hot roof (adds to the thermal envelope).

The prescriptive pathway is only limited to attic air sealing, attic insulation, and wall insulation. If my project in a small building includes other things (such as exterior wall sealing or basement insulation), can those receive a custom incentive?

A: You can apply for a prescriptive incentive for the prescriptive measures. For other custom features, contact the customer's Mass Save sponsor, who can advise further on custom incentives.

Am I allowed to do “X strategy for insulation and air sealing” in “Y unique commercial space” in the prescriptive pathway?

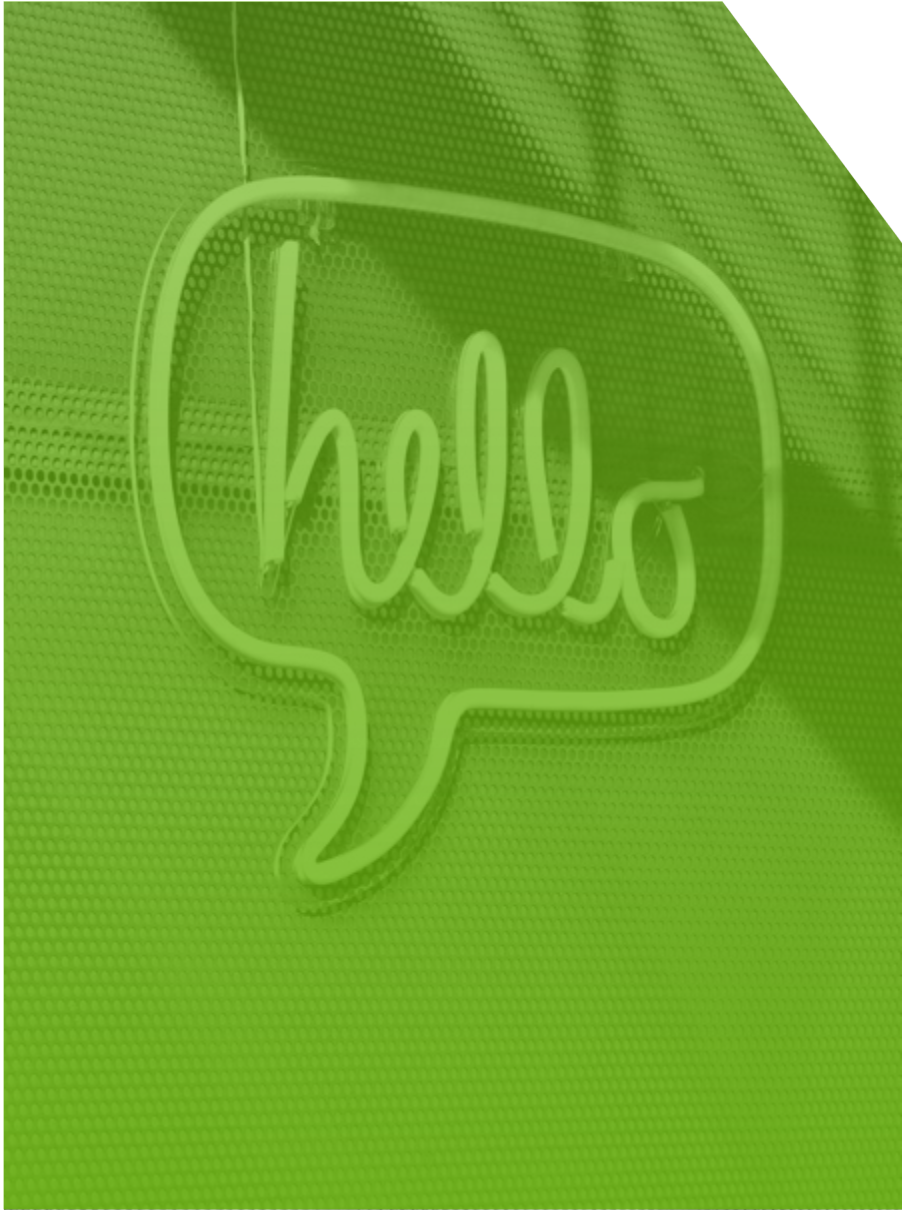
A: We expect that you will encounter many unique scenarios due to the variety of commercial spaces. We encourage solutions that effectively weatherize a building envelope, and if you have concerns about a project meeting qualifications, please contact the customer’s Mass Save Sponsor.



**See the new
C&I Weatherization
website for more:**

MassSave.com/ciwx

Program Sponsor Contacts



Berkshire Gas

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Cape Light Compact

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Thanks for listening.

WE ARE MASS SAVE®:

