



Utility Energy Efficiency and Electrification Retrofit Programs for Commercial Buildings

November 17, 2022

Moderator: Dan Ruben, Chair of Green Newton, Chair of Green Newton Building Standards Committee, Instructor of Sustainable Hospitality and Sustainable Tourism at Temple University, Missouri State University and University of Southern Maine.

Speakers: Lori Timmermann, Zachary Lippert, Maureen Kiely, Ryan Willingham, David Gibbons

Zoom Technician: Liora Silkes, Newton Energy Coach

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Background



- BERDO information and recordings of previous webinars: newtonma.gov/newtonberdo
- Today's focus: utility incentives for commercial buildings
- Planning for a multifamily incentives webinar in January





Energy Efficiency Improvements: pays for itself.



Electrification of heating.



Procurement of Renewable Energy Certificates or Newton Power Choice.



Renewable energy on site.



Alternative Compliance Payments: Boston's payment for 2026 is \$234/metric ton of CO₂ above standard.



Support for Property Managers



- Be in touch:

- Email address: newtonberdo@newtonma.gov
- Website: newtonma.gov/newtonberdo





Energy Efficiency & Electrification Programs

Small Business and Large Commercial Solutions

City of Newton

November 17, 2022

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Agenda



- 2022-2024 Three-Year Plan: Overview & Priorities
- Energy Efficiency Offerings – Small Business
- Energy Efficiency Offerings – All Businesses
- Electrification Offerings and Opportunities

2022-2024 Three Year Plan: Overview and Priorities



Dave Gibbons
Principal, C&I Strategy & Planning
Customer Energy Management - Massachusetts
National Grid

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2022-2024 Plan Overview



- Plan reflects specific changes and direction resulting from passage of Climate Act:
 - Achievement of Greenhouse Gas (GHG) reduction targets mandated by Climate Act, set by EEA
 - Incorporation of Social Cost of Carbon in benefit-cost testing
 - Ongoing commitment to equitable outcomes
- Programs also still operating under Green Communities Act mandate to achieve “All Cost Effective” energy efficiency
- Final Plan a product of extensive feedback from MA EEAC Councilors, DOER, and other stakeholders

The 2022 – 2024 Plan represents a major expansion of the Mass Save programs, with a GHG focus added to nation-leading efficiency offerings

Energy Efficiency Program Evolution



- Shift in focus away from lighting, but still some significant upgrade opportunities
- Increasing program focus on comprehensive projects including:
 - Weatherization
 - HVAC system optimization
 - Process Improvements
 - HVAC controls
- Introduction of “deep energy retrofit” pathways for multifamily and commercial buildings
- Phase out of natural gas combined heat and power (“CHP”) incentives - no new natural gas CHP projects incentivized in 2022-2024
- Active demand response remains an important piece of the portfolio; reduces overall grid costs and helps create the “flexible” grid of the future

Plan Priorities



| Statewide Targets (Combined Natural Gas & Electric) | | Plan Priorities |
|---|---------------|--|
| Total Benefits | \$7.4 billion | ELECTRIFICATION <ul style="list-style-type: none">• Driving key pathway to decarbonizing building sector• Increased emphasis on fuel conversion, with continued attention to complementary measures, such as weatherization, to promote right-sizing EQUITY <ul style="list-style-type: none">• Ensuring that programs are accessible to, utilized by and delivered through a representative cross-section of the Commonwealth WORKFORCE DEVELOPMENT <ul style="list-style-type: none">• Training & maintaining a robust and diverse workforce critical to achieving all desired outcomes• Partnership with MassCEC |
| Net Annual All-Fuel MMBtu Savings | 20.7 million | |
| Annual GHG Emissions Reductions (Metric Tons CO ₂ e) | 0.95 million | |
| Total Statewide Budget | \$2.9 billion | |

Building on EE programs' foundational role in supporting Commonwealth's energy and climate goals through equitably delivering energy efficiency, demand response, and electrification

Small Business Program



Maureen Kiely
Senior Energy Efficiency Consultant
Energy Efficiency
Eversource

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Small Business Energy Efficiency Services



- **Education** to help you understand your energy use
- **Incentives and Financing** for balance of the selected measures
- **Ease of Use** with a turnkey approach and qualified contractors



The Program Administrators are committed to addressing the needs of our small business customer.

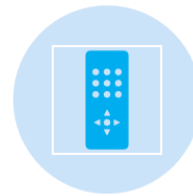
Do More, Save More



LIGHTING



HVAC



CONTROLS



REFRIGERATION



WEATHERIZATION

Even if you have already participated in our program in recent years, there may be new opportunities to reduce your energy use.

Domestic Water Heating



- Faucets, showerheads and spray valves can use a lot of hot water, which costs you money.
- You can lower your water heating costs by using and wasting less hot water in your business.
- To conserve hot water, you can fix leaks, install low-flow fixtures, insulate accessible hot water lines.

These small changes can make a big difference.

- Optimization solutions for walk-in coolers and freezers.
- It's important that your walk-in cooler or freezer maintains its desired temperatures at all times to keep your product cold and safe. But that doesn't require the entire system to be running at 100% every day of the year to do so.
 - Evaporator Fan Operation
 - Evaporator Fan Motors
 - Anti-Sweat Door Heaters
 - Novelty Cooler Runtimes
 - Evaporator Coil Defrost
 - In-Cooler Lighting Upgrades

By optimizing your system so it operates based on need instead of default manufacturer settings, you could prevent wasting real dollars.

Signing Up is Easy



Schedule a time to connect with an energy efficiency expert via phone or video



During your assessment, we'll identify energy-saving opportunities and answer any questions



We'll schedule an in-person audit when you're ready. Afterwards you'll get a detailed report of all the ways you can save your business money and energy

Once you receive your comprehensive report, you can decide how you would like to participate and at a time that is convenient for you.

Energy Efficiency Offerings and Opportunities



Zachary Lippert
Lead C&I Program Strategy Analyst
Customer Energy Management - Massachusetts
National Grid

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Lighting and Controls



- Lighting
 - Interior
 - Linear and screw base lamp replacements
 - Fixture replacements
 - Integrated controls
 - Exterior
- Design Light Consortium 5.2
- Controls
 - Occupancy Sensors
 - Daylight Responsive Controls
 - Custom Systems
 - Networked Lighting Controls



Lighting is a great way to reduce electricity consumption at your facility.

- Heating – Boilers, furnaces and steam traps
- Motors and Drives for pumps and fans
- Chillers
- New! - Building Management Systems (BMS)
 - Supports installation of new BMS, adding new sequences to existing BMS, and replacement of existing BMS
- Wi-Fi and Programmable Thermostats



Savings and rebate opportunities are available for all you HVAC needs.

Commercial Weatherization



Buildings $\leq 8,000$ sf:
Prescriptive

- Attic insulation, wall insulation, attic air sealing

8,001 sf to 100,000 sf:
Custom Express

- Insulation, air sealing, weatherstripping

$> 100,000$ sf
Custom

- Custom weatherization projects

- Reduce barriers to participation for commercial customers
- Offer consistency to installation vendors
- Increase incentives for weatherization projects

Water Heating



- New! - Electric Heat Pump Water Heater
 - \$1,000/unit up to 80 gallons
 - \$2,200/unit for 81-120 gallons
- Domestic Water Heaters
- Pool Heaters
- High-Speed Clothes Washers



There are many opportunities to save on efficient water heating equipment.

Additional Opportunities



Refrigeration



Food Service



Process



Operation &
Maintenance

We can help you reduce energy in all areas of your business!

Electrification Offerings



Ryan Willingham
Senior Energy Efficiency Consultant
Technical Solutions, Energy Efficiency
Eversource

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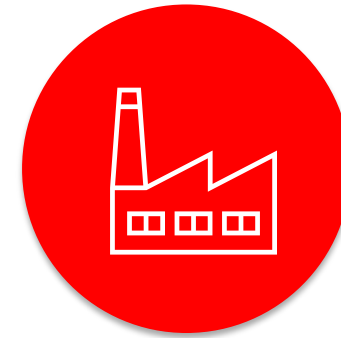
Electrification: What and Why?



**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.

Electrification: How?



- Primary focus on space heating
 - Heat Pumps
 - Partial or full electrification
- Other areas include:
 - Lawn equipment
 - [MassSave.com/CILawnEquipment](https://www.masssave.com/CILawnEquipment)
 - Domestic hot water (heat pump)
 - Battery powered forklifts
 - Induction cooktops
 - Process loads



Electrification: Heat Pumps



Prescriptive

- Projects with capacity up to 150 tons (based on AHRI rated cooling capacity)
- Equipment must be used for at least some heating and some cooling
- Must use integrated control module (ICM) if partially electrifying
- Equipment and ICMs be listed on qualified products list:
www.MassSave.com/cihpppl
- Eligible equipment
 - Air source (air-to-air) heat pumps
 - Variable refrigerant flow air source heat pumps
 - Ground source heat pumps

Custom

- Projects with total capacity over 150 tons
- Projects involving equipment not covered by the prescriptive offer
- Projects in which equipment is used for only cooling (e.g., data centers, cannabis) or only heating
- Project incentive eligibility criteria
 - Must produce net MMBtu reductions
 - Must NOT increase GHG (i.e., CO₂) emissions
 - Must meet cost-effectiveness criteria

For more information about heat pumps, please visit www.MassSave.com/ciheatpump

Prescriptive Heat Pump Incentives



Air Source (air-to-air) Heat Pumps

Includes single- and multi-head split systems, as well as unitary equipment

\$2,500/ton

Air Source Variable Refrigerant Flow Heat Pumps (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

Excludes projects participating in the Mass Save New Buildings/Major Renovation program; for more information visit: www.MassSave.com/cincmr

Weatherization and Electrification



- Effective weatherization can help enable and bolster electrification efforts
 - Reduce heating and cooling loads
 - Improved building shell
 - Reduced ventilation loads
 - Smaller HVAC equipment
 - Cost and energy savings
 - Maximize decarbonization

- Weatherization may be required for certain grants



Thank you!

Mass Save® information:

www.masssave.com/en/saving/business-rebates

For questions or for help reaching your energy efficiency solutions representative:

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