Efficiency Maine

Accessing Programs and Incentives through Building Electrification Design

February 26, 2026

Agenda

- Role of Architecture and Engineering Firms
- About Efficiency Maine
- Introduction to Efficiency Maine's Commercial and Industrial Prescriptive Initiatives (CIPI)
- Electric HVAC
  - Systems in Commercial Buildings
  - Design Considerations
  - Incentives
- Success Stories
- How A&E Firms Can Work with Efficiency Maine
- Getting Started for Customers
- Qualified Partners

The Role of Architecture and Engineering Firms

Role of Architecture and Engineering Firms

- A&E firms are an integral part of project planning and development.
- A&E firms have assisted in many new construction designs that Efficiency Maine Qualified Partners then bid on for installation.
- It has been increasingly important to engage with A&E firms as larger projects and complex retrofits have become more common.

Role of Architecture and Engineering Firms

- We encourage A&E firms to engage with Efficiency Maine, become Qualified Partners, and learn more about our programs.
- By understanding Efficiency Maine requirements and equipment criteria, we can work together to design an eligible installation and incentives for customers.

About Efficiency Maine

Efficiency Maine

Purpose:

To lower the cost and environmental impacts of energy in Maine by promoting energy efficiency and other distributed energy resources.

- Independent, quasi-state agency
- Administers statewide energy efficiency and carbon saving programs
- Provides rebates, financing, technical information, customer engagement, and registry of vendors
- Funded by electric rates, Regional Greenhouse Gas Initiative (RGGI), ISO New England Grid, federal grants, and other sources
- Board appointed by the governor and confirmed by the legislature

Benefits of Energy Efficiency

Making buildings more energy efficient can…

- Lower operating costs;
- Reduce system maintenance;
- Increase year-round comfort;
- Reduce carbon emissions; and
- Minimize reliance on fossil fuel systems.

Efficiency Maine’s Commercial and Industrial Prescriptive Initiatives (CIPI)

Commercial and Industrial Prescriptive Initiatives

CIPI offers incentives to encourage commercial customers to install efficient systems and technologies (measures).

The goal of incentives is to close the cost gap between standard (baseline) equipment and efficient equipment.

All eligible equipment must have associated energy savings over the estimated measure life.

Commercial and Industrial Prescriptive Initiatives

Offers incentives to:

- Businesses, for profit or nonprofit;
- Municipalities;
- Schools and higher education facilities;
- Manufacturing and industrial facilities;
- Multifamily buildings with three or more units;
- Mixed-use buildings (commercial/residential buildings with at least one commercial meter); and
- Other nonresidential entities.

Commercial and Industrial Prescriptive Initiatives

Offers incentives on efficient:

- **HVAC**
  - **Heat pumps**
  - **Variable Refrigerant Flow (VRF) systems**
  - **Ventilation equipment**
- Water heating
- LED lighting (retrofits)
- Compressed air equipment
- Refrigeration equipment
- Multifamily weatherization
- Agriculture equipment
- And more

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Electric HVAC Systems in Commercial Buildings

Electric HVAC Systems

Heating and Cooling Systems:

- Single-zone mini-split heat pumps
  - Ductless and ducted
- Variable Refrigerant Flow (VRF) systems
  - Three-phase with heat recovery
  - Three-phase without heat recovery
  - Single-phase with and without heat recovery
- Single-packaged heat pumps (splitless)

Electric HVAC Systems

Heating and Cooling Systems:

- Packaged Terminal Heat Pumps (PTHP)
- Vertical Packaged Terminal Heat Pumps (VPTHP)
- Linear Expansion Valve (LEV) kits

Electric HVAC Systems

Ventilation, Heating, and Cooling Systems:

- Heat Pump Rooftop Units (RTUs)
- Dedicated Outdoor Air Systems (DOAS)
  - With integrated heat pump
- Energy Recovery Ventilator (ERV) systems

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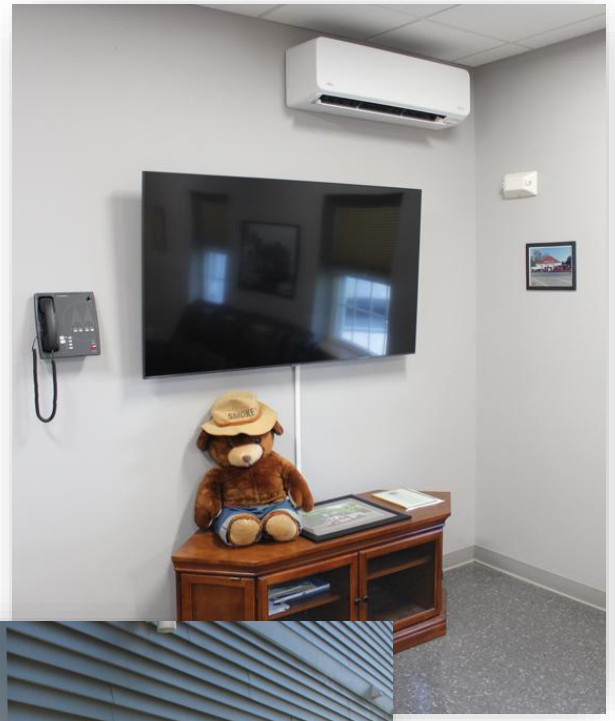
Electric HVAC Systems

Single-zone mini-split heat pump systems:

- Common in light commercial applications like restaurants, offices, and retail spaces.
- Offer very efficient heating and cooling.



Electric HVAC Systems

Variable Refrigerant Flow (VRF) Systems:

- Common in light commercial to heavy commercial applications.
- Offer more indoor distribution than mini-split heat pumps.
- Can simultaneously heat and cool with heat recovery.
- Have single-phase and three-phase options.

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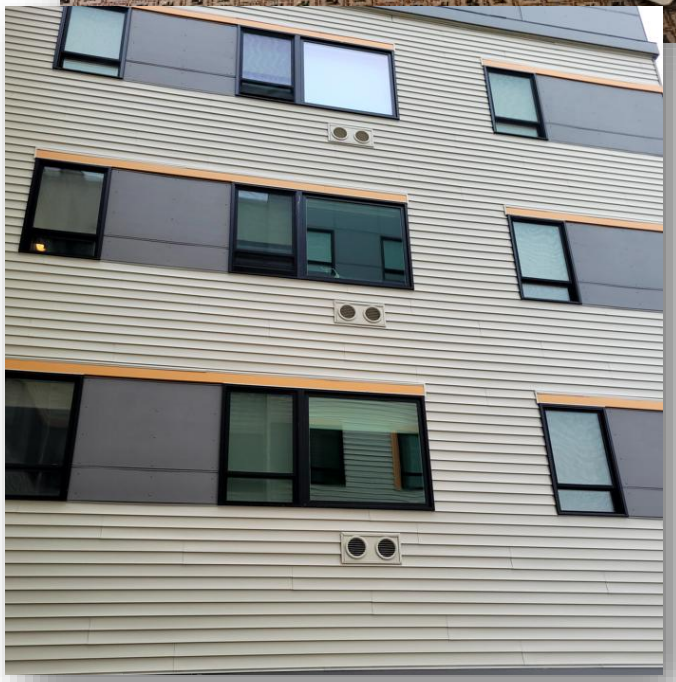
Electric HVAC Systems

Single-packaged heat pumps (splitless):

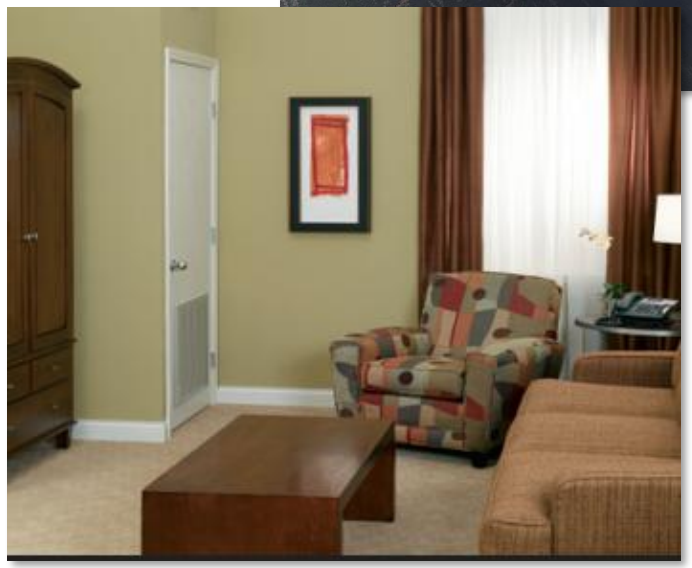
- Popular in large multifamily buildings.
- Can be designed with integrated ERV systems.
- Epocha and Maestro are popular brands.



Electric HVAC Systems

Packaged and Vertical Packaged Terminal Heat Pumps:

- PTHPs are common in lodging.
- VPTHPs are common in multifamily buildings.
- PTHPs offer easy retrofits and can be self-installed.



Electric HVAC Systems

Linear Expansion Valve (LEV) kits:

- Used to control the flow of refrigerant from a VRF outdoor unit into a pre-existing coil in a ventilation system.
- Can apply heat pump technology to existing air handler units.
- School gyms and other large rooms are good applications.

Electric HVAC Systems

Heat Pump Rooftop Units (RTUs):

- Offer an expanded option for HVAC replacements.
- Helps heat, cool, and ventilate commercial spaces.
- Are used in a wide variety of building types.

Electric HVAC Systems

Dedicated Outdoor Air Systems (DOAS):

- Can efficiently reduce the heating and cooling load of HVAC systems while offering ventilation.
- Offers a heat pump solution for large spaces with high HVAC loads.

Electric HVAC Systems

Energy Recovery Ventilators (ERVs):

- Can efficiently reduce the heating and cooling load of HVAC systems while offering ventilation.
- Required by some state codes, and efficient models can reduce energy use.
- Common in commercial and multifamily.

Electric HVAC Design Considerations

Design Considerations

Installation Types:

- Whole Building: A heat pump or VRF system that offers heating and cooling to the entire building.
- Zonal Retrofit: A heat pump or VRF system that offers heating and cooling to an entire heating zone.
  - This design can replace an entire system or thermostat zone.
  - Popular option for multifamily or school installations.
  - Must serve at least 50% of the building's estimated heat load or at least 50% of the existing system's heating capacity.

Design Considerations

General HVAC Requirements:

- Heat pump systems must provide heating to whole building or whole zone.
- Businesses must operate at least 8 months a year, including heating during the winter months.
- HVAC incentives not available for agricultural growing facilities.
- Buildings that are served by natural gas or those installing natural gas back-up systems are not eligible for incentives.

Design Considerations

Retrofit and Early Retirement Considerations:

- When replacing an existing system, the heat pump or VRF must have controls that integrate it with any existing or back-up systems and that set the heat pumps as the primary source of heat.
- Replacement of existing heat pump systems are not eligible for incentives with new heat pump technology, regardless of the age or operating condition of the existing system.

Design Considerations

New Construction Considerations:

- Installation of a back-up system is not allowed.
  - Supplementary electric resistance heating is permitted in spaces that cannot be served by heat pumps (e.g., a bathroom, storage room, or closet).

Design Considerations

Heat Pump Sizing:

- Manual J load calculation is used to determine HVAC capacity and the size of the equipment needed for a building's heating and cooling demand.
- Single-zone without Manual J -
  - Must be a 1:1 zonal replacement that matches **60% to 100%** of the current heating system capacity.
- Single-zone with Manual J -
  - Use Manual J output to design a system of single zones with **80% to 120%** of Manual J design load.
- Multizone (multifamily only) -
  - Use Manual J output to design a system of multizones with **80% to 120%** of Manual J design load.
  - Limit of 3 indoor units per one outdoor unit.

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Design Considerations

Heat Pump Sizing:

- One successful method we've seen to properly size systems in smaller spaces is the use of transfer fans from one room to another, reducing the need for another indoor heat pump head.

An inlet vent for a transfer fan.

A mid-wall thermostat for a transfer fan.

Efficiency Maine Electric HVAC Incentives

Project Types

New Construction:

New construction incentives are available for the installation of equipment in a new building or addition with no existing heating system, as part of a change-of-use renovation, or for the replacement of a heating system that has failed or is nearing its useful life (22 years or older).

Early Retirement:

Early retirement incentives are available for the replacement of operating equipment that's more than 16 years old, but less than 22 years old.

Retrofit:

Retrofit incentives are available for the replacement of existing (operating) equipment that's less than 16 years old.

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Project Incentives

MINI-SPLIT HEAT PUMP SYSTEMS				
Zone	**Minimum HSPF**	**New Construction Incentive ($/System)**	**Early Retirement Incentive ($/System)**	**Retrofit Incentive ($/System)**
1	12.5 HSPF / 9.5 HSPF2 ductless / 8.1 HSPF2 ducted	$500	$700 $900 Small Business	$1,000 $1,400 Small Business

MINI-SPLIT HEAT PUMP SYSTEMS FOR MULTIFAMILY BUILDINGS				
Zone	**Minimum HSPF**	**New Construction Incentive ($/System)**	**Early Retirement Incentive ($/System)**	**Retrofit Incentive ($/System)**
1	12.5 HSPF / 9.5 HSPF2 ductless / 8.1 HSPF2 ducted	$600	$850	$1,200
2	10 HSPF / 8.5 HSPF2	$700	$950	$1,300
3	10 HSPF / 8.5 HSPF2	$800	$1,050	$1,400

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Project Incentives

VARIABLE REFRIGERANT FLOW (VRF) SYSTEMS						
Measure Code	**Measure**	**Heating Capacity (Btu/h)**	**Criteria**	**New Construction Incentive ($/Sq Ft)**	**Early Retirement Incentive ($/Sq Ft)**	**Retrofit Incentive ($/Sq Ft)**
VRF	**Single-Phase** VRF Air-Cooled Heat Pump with and without Heat Recovery	< 65,000	≥ 10 HSPF or 9 HSPF2	$3.00	$4.50 $6.00 Small Business	$8.00 $9.50 Small Business
	Three-Phase VRF Air-Cooled Heat Pump without Heat Recovery	≥ 65,000 and < 135,000	≥ 2.25 COP	$4.00	$6.00 $7.50 Small Business	$10.00 $11.50 Small Business
		≥ 135,000 and < 240,000	≥ 2.1 COP			
		≥ 240,000	≥ 2.05 COP			
	Three-Phase VRF Air-Cooled Heat Pump with Heat Recovery	≥ 65,000 and < 135,000	≥ 2.25 COP	$6.00	$8.50 $10.00 Small Business	$12.00 $13.50 Small Business
		≥ 135,000 and < 240,000	≥ 2.1 COP			
		≥ 240,000	≥ 2.05 COP			

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Project Incentives

PACKAGED TERMINAL HEAT PUMP (PTHP) SYSTEMS					
Measure Code	**Heating Capacity (Btu/h)**	**Criteria Heating (COP)**	**New Construction Incentive ($/Unit)**	**Early Retirement Incentive ($/Unit)**	**Retrofit Incentive ($/Unit)**
PTHP	< 5,800	4.0	$380	$400	$430
	≥ 5,800 and ≤ 11,800	3.5	$380	$400	$450
	> 11,800	3.4	$380	$400	$480

VERTICAL PACKAGED TERMINAL HEAT PUMP (PTHP) SYSTEMS					
Measure Code	**Heating Capacity (Btu/h)**	**Criteria Heating HSPF or COP**	**New Construction Incentive ($/Unit)**	**Early Retirement Incentive ($/Unit)**	**Retrofit Incentive ($/Unit)**
VPTHP	< 5,800	6.3 HSPF2 / 3.3 COP	$380	$520	$700
	≥ 5,800 and ≤ 11,800	6.3 HSPF2 / 3.3 COP	$550	$700	$850
	> 11,800	6.3 HSPF2 / 3.3 COP	$800	$900	$1,000

SINGLE PACKAGED HEAT PUMP SPLITLESS (SPHP) SYSTEMS					
Measure Code	**Heating Capacity (Btu/h)**	**Criteria Heating HSPF or COP**	**New Construction Incentive ($/Unit)**	**Early Retirement Incentive ($/Unit)**	**Retrofit Incentive ($/Unit)**
SPHP	> 7,000 and ≤ 9,500	6.3 HSPF2 / 3.3 COP	$2,200	$2,700	$3,500

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Project Incentives

HEAT PUMP ROOFTOP SYSTEMS					
Measure Code	**Total Heating Output Capacity (MBH)**	**Proposed Heat Pump RTU HSPF/Heating COP at 17°F**	**New Construction Incentive ($/MBH)**	**Early Retirement Incentive ($/MBH)**	**Retrofit Incentive ($/MBH)**
RTU	60 to ≤ 120	8.5 HSPF / 7.2 HSPF2 / 2.0 COP	$37	$90	$168
	> 120 to ≤ 450	2.0 COP	$28	$70	$125

HEAT PUMP ROOFTOP SYSTEMS CONFIGURATION ELIGIBILITY				
	Eligible HPRTU Heating			
Baseline	**Propane-fired Heating Section**	**Natural Gas-fired Heating Section**	**Electric Resistance**	**Hot Water Coil tied to Propane or Oil-fired Boiler**
None (New Construction, New Capacity, Failed Equipment)	Yes	No	Yes	Yes
Standard RTU with Propane-fired Heating Section	Yes	No	Yes	Yes
Standard RTU with Electric Resistance Heating Section	Yes	No	Yes	Yes
Standard RTU with Hot Water Coil tied to Propane or Oil-fired Boiler	Yes	No	Yes	Yes
Standard RTU with Natural Gas-fired Heating Section	No	No	No	No

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Project Incentives

ENERGY RECOVERY VENTILATORS			
Measure	**Minimum Sensible Heat Recovery**	**New Construction Incentive ($/CFM)**	**Retrofit Incentive ($/CFM)**
Energy Recovery Ventilator (ERV)	≥ 65% to < 75%	N/A	$2.00
	≥ 75% to < 85%	$1.50	$2.25
	≥ 85%	$1.75	$2.50

HEAT PUMP DEDICATED OUTSIDE AIR SYSTEM			
Measure	**Minimum Sensible Heat Recovery**	**New Construction Incentive ($/CFM)**	**Retrofit Incentive ($/CFM)**
Dedicated Outside Air System (DOAS)	≥ 75%	$15.00	$19.50

LINEAR EXPANSION VALVE KITS (LEVS)		
Measure	**New Construction Incentive ($/BTU)**	**Retrofit Incentive ($/BTU)**
Linear Expansion Valve Kit (LEV)	$0.30	$0.30

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Success Stories

Betsy Ross House (South Portland)

By the Numbers

Five variable refrigerant flow (VRF) systems.

Three energy recovery ventilators (ERV).

39,786 ft² serviced solely by heat pump technology.

$278,402 in Efficiency Maine incentives.

Over $100,000 in energy savings annually.

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Calais High School

By the Numbers:

Six variable refrigerant flow (VRF) systems.

15,100 ft² serviced solely by heat pump technology

$199,296 in Efficiency Maine incentives

Replaced oil heating system

Village View Apartments – Freeport Housing

By the Numbers:

Thirty heat pump systems.

21,844 ft² serviced solely by heat pump technology

$152,908 in Efficiency Maine incentives

30 apartment units retrofitted

Replaced propane heating system

How A&E Firms Can Work with Efficiency Maine

Working with Efficiency Maine

Installation contractors will use your designs to complete an Efficiency Maine HVAC Pre-approval checklist and installation (next slide).

PROJECT INFORMATION

Select the Project Type:

- ❑ Retrofit (Replacement of Existing, Operating Equipment <16 Years Old)
- ❑ Early Retirement (Replacement of Existing, Operating Equipment, 16 to <22 Years Old)
- ❑ Replace on Burnout or Replacement of Existing Equipment ≥22 Years Old
- ❑ New Construction (New Building or Addition)
- ❑ Funding Opportunity Notice (FON - add name/#): _____

Select the Design Type

- ❑ Whole Building Design
- ❑ Zonal Replacement *(Intended for the replacement of non-electric existing heating systems (oil/propane/kerosene). Excluding multifamily projects, zonal retrofits must serve at least 50% of the building's calculated heat load or at least 50% of the existing system's heating capacity.)*

Brief Project Description:

Description of Existing HVAC System:

Existing Equipment Type, Model, and Serial Number(s):

Existing Equipment Fuel Type:

Existing Equipment Capacity:

Age of Existing Equipment:

Areas/Zones Served:

Existing Ventilation System (describe if present):

Pre-approval Checklist for Qualified Partners

Incentive Application & Documentation:

Please create an incentive application under the applicable program in effRT and provide the following supportive documents for pre-approval review:

- ❑ Installation quote to end user (include proposed models, total material cost to end user, and total labor cost)
- ❑ Material quote from supplier
- ❑ Heat load calculations
- ❑ Manufacturer specification sheets for proposed HVAC equipment, including controls when applicable
- ❑ Pictures of existing heating system and nameplate(s)
- ❑ Building layout plan/sketch that identifies the room layouts and locations of proposed outdoor & indoor units *(Include square footages of each conditioned space on building layout plan for VRF or Multifamily projects)*
- ❑ Manufacturer's Selection Report for VRF projects
- ❑ A completed copy of this Pre-approval Checklist

<u>As required:</u>

- ❑ Recent copy of customer's electric bill (full bill for each account) for Small Business Heat Pump Retrofit projects
- ❑ Incentive Authorization Form if the incentive is to be paid to the Qualified Partner

Pre-approval Checklist for Qualified Partners

Description of Proposed HVAC System (refer to Measure Code Reference Guide and QP Website for program eligibility and design criteria)

Proposed Equipment Type & Model(s):

- ❑ VRF/LEV Kit: _____
- ❑ Heat Pump: _____
- ❑ PTHP/VTPH: _____
- ❑ ERV: _____
- ❑ DOAS: _____

Total Proposed Equipment Capacity (Btu/hr):

Heat Load Reference (check one):

❑ Manual J ❑ Existing System Capacity ❑ Other (please describe): _____

Estimated Heat Load (Btu/hr):

Building or Zones Served:

Will the proposed HVAC system(s) serve as the primary heating system(s) for the building or zone served?	❑ Yes	❑ No
Does the proposed HVAC design capacity meet the estimated heating requirements for the building or zone served?	❑ Yes	❑ No
Does the proposed HVAC design for the building or zone provide effective heat distribution for the occupants?	❑ Yes	❑ No

Proposed Ventilation System (include heating fuel type as applicable):

Additional Notes:

Heat Pump Design Criteria:

System Controls:

1. Is the existing heating system going to remain onsite for emergency backup or supplemental heat? ❑ Yes ❑ No

If yes to #1 above, please answer questions 2-4 below:

2. When will the backup system be utilized?

3. What controls strategy is planned to be implemented? Please detail the proposed controls and set points. The proposed controls equipment must be included on the supplier quote(s).

4. Have you informed the customer that the new HVAC system must be operated as the primary system, the proposed controls strategy may be inspected upon project completion, and the incentive may be reduced or denied if the project is not completed as proposed? ❑ Yes ❑ No

How Customers Work with Efficiency Maine

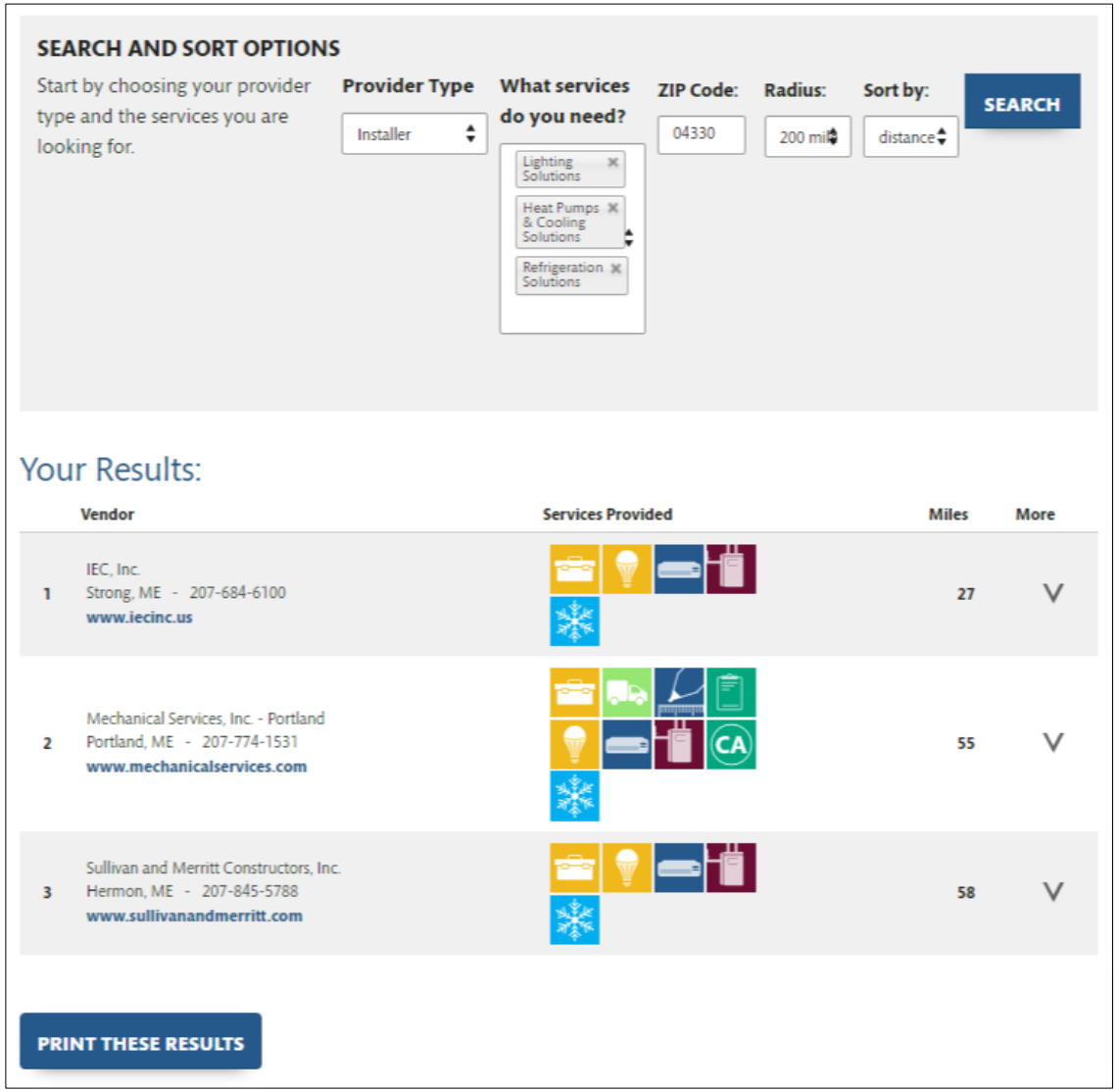
Getting Started with a Project (smaller customers)

1. Hire Commercial Qualified Partner.
2. Conduct an assessment of the property.
3. Reserve their incentive.
4. Complete upgrade.
5. Receive check in mail (building owner or installer).

Getting Started with a Project (design-build)

1. Publish an RFP for an installation contractor based on A&E design.
2. Select a winning bidder.
3. Reserve their incentive (pre-approval).
4. Complete upgrade.
5. Receive check in mail (building owner or installer).

How Customers Find a Qualified Partner



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You Can Become a Qualified Partner

Becoming a Qualified Partner

1. Fill out the “Become a Qualified Partner Form” on efficiencymaine.com
2. Submit a copy of your Maine Architect License or Maine Professional Engineer (PE) License and a copy of your Certificate of Insurance ($1,000,000 liability coverage)
3. Complete our 1-hour online training.

Benefits of Being a Qualified Partner

1. Customer engagement through our Find a Qualified Partner Locator;
2. Access to Efficiency Maine program incentives;
3. Updates on program activities and opportunities;
4. Project assistance from an Efficiency Maine field personnel; and
5. Access to free Efficiency Maine marketing material.

C&I Custom Programs

C&I Custom Programs – Preapproval Required

Non-prescriptive efficiency projects:

- Process specific equipment or upgrades
- Heat recovery systems
- Larger compressed air systems
- Non-prescriptive heat pump projects
- VFDs, and high efficiency pumps or blowers

Combined heat and power systems:

- Reciprocating engines
- Steam turbines

Summer peak load reduction >20kW:

- Batteries
- Thermal storage

Must be found cost effective based on project specific costs and energy savings to be eligible.

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Efficiency Program Incentive Limitations

Minimum Custom Program incentive: $10,000
If facility peak demand less than 400 kW, minimum incentive = $5,000

Incentive capped at the ***lesser*** of:

Incentive Limitation		Retrofit	New Construction (NC) or Equipment at End of Useful Life (EUL)
Incentive Rate Per Unit of Energy Savings	Electric Savings	$0.30 per kWh of annual electric savings	
	Fuel Savings	$25 per MMBtu of annual fuel savings	
	Beneficial Electrification or Heat Recovery Fuel Savings	$50 per MMBtu of annual fuel savings	
Efficiency Maine Cost Share		50% of net cost	75% of net incremental cost
Fiscal Year		$1,000,000	
Simple Payback		1.0 year based on full project cost	1.0 year based on incremental cost

Note, fiscal year = July 1 to June 30

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Technical Assistance Program

Supports development of potential Custom Program projects.

- Incentives = 50% of TA study cost up to $25,000
- Allocating $200k per fiscal year (July 1 – June 30)
- Must be found likely to be eligible for one of the Custom Programs
  - Based on cost effectiveness screening using high level estimates of cost and energy savings

3 categories:

1. Design and bid services
2. Investment grade analyses
3. Interconnection support

For Custom Program Inquiries:
Email: Custom@efficiencymaine.com, or
Call: 207-620-0002

Get Started

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