Energy Saving Solutions for Multifamily Housing

Rick Meinking
Commercial & Industrial Program Manager
About Us
What is the Efficiency Maine Trust?

• Efficiency Maine acts like an independent utility to deliver Maine’s lowest cost energy resource:

   **Energy Efficiency**

• Efficiency Maine lowers the cost and environmental impacts of energy in Maine by promoting energy efficiency and alternative energy systems.
What does Efficiency Maine do?

In connection with a customer’s purchase of energy efficient products and services, we provide:

– Financial incentives,

– trusted information,

– On-line directories of vendors
Energy Efficiency Benefits

1. Reduce energy cost
2. Avoid failure of older less efficient equipment
3. Lower maintenance cost
4. Improved work environment
5. Increase property value
Agenda

- Multifamily Building Statistics
- How can Efficiency Maine help?
  - New Construction Program
  - Prescriptive Incentives
- Getting Started
### Benchmarking Statistics & Highlights
(based on 346 buildings)

<table>
<thead>
<tr>
<th>Category</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avg. Size (Units/Bldg)</td>
<td>9</td>
</tr>
<tr>
<td>Avg. Annual Cost for all Utilities</td>
<td>$1,722 / apt</td>
</tr>
<tr>
<td>Avg. Annual Electricity use (non-heat)</td>
<td>4,048 kWh / apt</td>
</tr>
<tr>
<td>Buildings heated with Oil</td>
<td>62%</td>
</tr>
<tr>
<td>Buildings heated with Gas</td>
<td>23%</td>
</tr>
<tr>
<td>Avg. Annual Cost for Oil Buildings</td>
<td>$1,194 / apt for heat &amp; DHW</td>
</tr>
<tr>
<td>Avg. Annual Cost for Natural Gas Buildings</td>
<td>$724 / apt for heat &amp; DHW</td>
</tr>
</tbody>
</table>
How can Efficiency Maine Help?
New Construction Program: Maine
Advanced Buildings

- commercial new construction or major renovation projects
- Structures between 5,000 – 100,000 sf
- Building Types:
  - Multifamily Buildings
  - Schools
  - Municipal Buildings
  - Healthcare Facilities
  - Office Buildings
  - Many More
MAB Overview

• 17 prescriptive criteria around integrated, whole building design
• No energy modeling required
• Synergies with LEED requirements
MAB Overview

- **Incentives:**
  - Buildings that meet MAB Tier Two requirements receive a prescriptive incentive per square foot (up to $175,000)
    - $1.50/sf to Building Owner
    - $0.25/sf to Lead Architectural Firm

- **Other Participant Benefits:**
  - Buildings designed to Tier Two requirements will be 30% to 35% more energy-efficient than what the Maine Uniform Building and Energy Code requires
  - Savings year after year on heating and electric bills
  - Greater comfort for tenants or employees
  - Lower maintenance costs
Case Study - Bayside Anchor
Bayside Anchor

- **Customer:** Portland Housing Development Corporation
- **Address:** 81 East Oxford St, Portland, ME
- **Architect:** Kaplan Thompson Architects
- **General Contractor:** Wright-Ryan Construction
- **Completion Date:** January 2017
- **Project Description:** 45-unit multifamily building with ground floor mixed use
- **MAB Incentives:** $66,237
- **Est. Energy Savings:** 128,300 kWh/yr
Bayside Anchor: High Performance Strategies

- Continuous air barrier/very low air infiltration
- High levels of insulation
- High-performance fenestration
- Heat recovery ventilation
- LED lighting & controls/daylighting
- High-efficiency heat pumps
- Solar

Photos above and below by Jeff Stevenson
Focus on offering *Solutions* to help manage energy costs

- Lighting Solutions
  - Indoor, Outdoor and Screw-in LEDS
- Heating, Cooling and Ventilation Solutions
  - Boilers & Furnaces
  - Ductless Heat Pumps
  - Ventilation Controls
- Water Heating Solutions
- Commercial Kitchen Solutions
Barriers to Adoption

- Poor past experiences
- Unfamiliar with technology
- Too complex
- High cost
The Good News

- Technology is improving.... FAST

Over 278,926 Products Available today
Lighting Solutions

• LEDs – Light Emitting Diodes
  Interior applications
  • Troffers fixtures
  • Stairway
  • Flood lights/Spot lights

Exterior
  • Street/Parking lots
  • Wall-packs
  • Canopy
LED Lightbulbs

Efficiency Maine works with lighting manufacturers, retailers and distributors to reduce the prices of energy-efficient lighting products statewide.

• In most participating locations, prices are simply marked down.
Advanced Lighting Controls

Capabilities
• Networked
• Zoning – Reconfigurable with Layering
• Occupancy Sensing
• Daylight Harvesting
• Task Tuning
• Continuous Dimming
• GUI

Other Capabilities
• Scheduling
• Personal Control
• Load Shedding/DR
• Plug Load Control
• EM/BMS Integration
• Device Diagnostic
Natural Gas – Oil - Propane
Space Heating Solutions

- Air Furnaces
- Condensing Boilers
- Steam Boilers
- Heaters
  - Low–intensity infrared unit heater
  - Warm-air unit heater
- Natural Gas, Propane, #2 Oil
- Incentives vary by fuel, system and capacity
- Some systems available at distributors with an instant discount
Boiler Controls – Ancillary Equipment

- **Retrofit:**
  - Modulating Burner Controls for Boilers and Heaters
  - Boiler Stack Heat Exchanger (Boiler Economizer)
  - Boiler Reset/Lockout Controls
  - Oxygen Trim for Boilers and Heaters
  - Programmable Thermostat
  - Boiler Turbulator
Heating & Cooling Systems
Ductless Heat pumps

- Ideal systems for individual units
- Mini-split heat pumps move heat, rather than generate it.
- Highly efficient; quiet
- Incentives available for single and multi-zone systems
Getting Started

Is it Mission Impossible?
Qualified Partners

- Direct support to customers
  - Equipment Installing Contractors
  - Suppliers/Distributors
  - Architectural/Engineering Firms
  - Service Companies
    - Commercial Energy Auditors
    - ESCOs

- Access to Technical Resource
- Access to Project Incentives
- Process paperwork

Over 900 individuals
Over 700 Businesses
Finding a Qualified Partner near you

www.efficiencymaine.com
# Take action

## Search and Sort Options

Start by entering your ZIP Code and a search radius.

- **ZIP Code:** 04330
- **Radius:** 25 miles

**Sort by:**
- distance

## What services do you need?

- [x] All Services
- [ ] Installer
- [x] Supplier
- [ ] Architect/Engineering Firm
- [ ] ESCO/Auditor/Consultant
- [ ] Lighting Solutions
- [ ] Heat Pumps & Cooling Solutions
- [ ] Heating Solutions
- [ ] Compressed Air Solutions
- [ ] Refrigeration Solutions
- [ ] Commercial Kitchen Solutions
- [ ] Water Heating Solutions
- [ ] Agricultural Solutions

**SEARCH**

## Vendor Services Provided

<table>
<thead>
<tr>
<th>Vendor</th>
<th>Services Provided</th>
<th>Miles</th>
<th>More Info</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong> Augusta Fuel Company, Augusta, ME</td>
<td>![Services Icons]</td>
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<tr>
<td><strong>2</strong> F.W. Webb - Augusta, Augusta, ME</td>
<td>![Services Icons]</td>
<td>0</td>
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<tr>
<td><strong>3</strong> Plourdes Electrical Services, Augusta, ME</td>
<td>![Services Icons]</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td><strong>4</strong> Rockingham Electric - Augusta</td>
<td>![Services Icons]</td>
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<td></td>
</tr>
<tr>
<td><strong>5</strong> RA Godbout Electrical Service</td>
<td>![Services Icons]</td>
<td>7</td>
<td></td>
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<tr>
<td><strong>6</strong> Dick's Electric, Inc., Belgrade, ME</td>
<td>![Services Icons]</td>
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<tr>
<td><strong>7</strong> JNM Electrical, LLC, Windsor, ME</td>
<td>![Services Icons]</td>
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<tr>
<td><strong>8</strong> Ballantyne Service Co., Inc., South China</td>
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<td><strong>9</strong> RSA Electrical, LLC, Randolph, ME</td>
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<tr>
<td><strong>10</strong> AMPCO Electrical Services, Inc., Pittston, ME</td>
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<tr>
<td><strong>11</strong> Dave's Appliance, Inc., Winthrop, ME</td>
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<tr>
<td><strong>12</strong> Kaplan Electrical Construction, Winthrop, ME</td>
<td>![Services Icons]</td>
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<tr>
<td><strong>13</strong> McFarland Electric, Inc., Gardiner, ME</td>
<td>![Services Icons]</td>
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</tbody>
</table>
If you lose your way,

Call our Call Center
1-866-376-2463

Or

Email: efficiencymaine@efficiencymaine.com
OPEN MIC – Questions