Introduction to the RTU Campaign
SWEEP Webinar
March 20, 2013
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Andres Potes, Waypoint Building Group
Campaign Summary
Why RTUs?
Website and Resources
Roles and Benefits
Campaign Goals
Utility Supporter Role
Next Steps
RTU Campaign Quick Overview

- **What:** Move the commercial building RTU market to greater adoption of high efficiency RTUs and RTU controls
- **Who:** Campaign organizers, supporters, and DOE
  - Organizers: ASHRAE, RILA, and others to be announced
  - Supporters: Utility programs, efficiency organizations, and manufacturers
  - Participants: Building owners
  - Department of Energy provides technical support
- **How:** Recruit building owners and operators to pledge to:
  - Evaluate their buildings for opportunities
  - Replace their RTUs or retrofit with controls
  - Share energy savings with the campaign
- **When:** The project launches May 2013 through November 2014
Commercial packaged roof top air conditioning units (RTUs) can be up to 50% more efficient than RTUs available ten years before.

Advanced controls can save up to 40% with paybacks as short as 2 years.

Nationally, RTUs are used in over 60% of U.S. commercial buildings.

Typical life is 15 to 20 years, and replacement is often only after failure.

Urgency leads to replacement with a new version of the old unit.
Eligible Technologies

• Advanced Control Retrofit
  – For units <10 years old and >7 tons of cooling capacity
  – Reduce RTU energy consumption by up to 40% with a 2-4 year payback

• RTU Early Retirement and High Efficiency Replacement
  – For units > 10 years old
  – CEE Tier 2 and above efficiency levels
  – RTU Challenge specification can reduce RTU energy use by up to 50% compared with Standard 90.1
## RTU Efficiencies

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10 - 15 year old equipment

“High efficiency” for this program
Benefits of RTU Replacements and Retrofits

- Substantial efficiency gains over older and possibly degraded units
- Reduce operating costs
- Avoid expensive maintenance problems
- Aligns with R22 phase out
- Improved dehumidification, comfort control, or IEQ
- Multiply the savings with a deep building retrofit
- Take advantage of attractive financial incentives
- Utility efficiency programs make it easier

**Energy Savings Examples**

- Supermarkets can save up to $52,000 per year (up to $8,700 per RTU)
- Stand-alone retail stores can save up to $24,000 per year (up to $5,900 per RTU)
- Strip malls can save up to $23,000 per year (up to $2,300 per RTU)
- Small office buildings (5,500 sq. feet) with one RTU can save up to $2,400 per year
Agenda

- Campaign Summary
- Why RTUs?
- Website and Resources
- Roles and Benefits
- Campaign Goals
- Utility Supporter Role
- Next Steps
What might it look like when launched?
Example from recent Lighting Energy Efficiency in Parking campaign

Example:
LEEPcampaign.org

Lighting Energy Efficiency in Parking Campaign

It's easy to take the LEEP

Join the team
Get advice
Save electricity and money
Get recognized for success

Join

What is LEEP?
State-of-the-art lighting technologies can last 2 to 5 times longer than traditional outdoor lights. These systems pay for themselves quickly by cutting energy costs up to 70% and maintenance costs up to 90%. The Lighting Energy Efficiency in Parking (LEEP) Campaign is a program offering guidance and recognition to facility owners interested in implementing energy efficient lighting solutions in their parking facilities.
What might it look like when launched?

Conceptual Design

Advanced Cooling Efficiency Campaign

Replace, Retrofit. Reap Rewards.

Join the campaign
Get advice
Save energy and money
Get recognized for success

McQuay’s Rebel: the first product to meet the RTU Challenge

What is the Advanced Cooling Efficiency Campaign?

Older, inefficient commercial rooftop unit (RTU) air conditioning systems are common and can waste up to $52,000 per year depending on the building. By replacing or retrofitting your building’s rooftop air conditioning unit, you can save money, improve your energy efficiency, make your building more comfortable, and help the environment. The Advanced Cooling Efficiency (ACE) Campaign encourages commercial building owners and operators to replace their old RTU with a more efficient unit or to retrofit their RTUs with advanced controls in order to take advantage of these benefits.

How do I participate?

Joining ACE will provide you access to tools and expertise to lower your facility’s operating costs while maintaining or improving your building occupants’ comfort. Once registered, you commit using these tools to evaluate the potential energy savings from your building’s RTUs. Share these savings estimates and your decision to move forward with implementation with ACE to become eligible to receive recognition from the campaign based on the energy savings. Join today at no cost and learn how you can start saving!
Technical Resources

• Technical assistance to help building owners and decision makers
• Guidelines to determine whether to retrofit or replace
• Performance data from DOE and other demonstrations
• Right-sizing guidance
• Energy savings calculators
• Procurement specification (performance, installation, and quality maintenance)
• Example quality maintenance contract
• Case studies targeted at both end users and utilities
## Building Owner and Operator Barriers to RTU Efficiency

<table>
<thead>
<tr>
<th>Barriers</th>
<th>Potential solution(s)</th>
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<tbody>
<tr>
<td>First cost drives buying decisions</td>
<td>• A list of RTU incentives and financing resources</td>
</tr>
<tr>
<td></td>
<td>• Manufacturer supporter financing</td>
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<tr>
<td></td>
<td>• Utility supporter relationships with local debt providers</td>
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<tr>
<td>Lack of awareness of the benefits of high efficiency units</td>
<td>• Financial and technical calculators</td>
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<tr>
<td></td>
<td>• Case studies</td>
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<tr>
<td></td>
<td>• Strong campaign partners</td>
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<tr>
<td>Split incentives between owners and tenants</td>
<td>Examples of energy aligned- leases or owners/tenants that have successfully negotiated upgrades</td>
</tr>
<tr>
<td>Uncertainty/mistrust about savings claims</td>
<td>• 3rd party demonstrations</td>
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<tr>
<td></td>
<td>• Case studies</td>
</tr>
<tr>
<td>Lack of expertise about how to specify advanced equipment/ what to buy</td>
<td>• Sample procurement specifications</td>
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<tr>
<td></td>
<td>• A list of RTU incentives and financing resources</td>
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Why RTUs?
Campaign Summary
Website and Resources

Roles and Benefits
Campaign Goals
- Recruit participants to join the campaign
- Support utility and efficiency RTU programs
- Case studies and making the business case
- Recognizing participants

Utility Supporter Role
Next Steps
<table>
<thead>
<tr>
<th>Role</th>
<th>Benefits</th>
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<tbody>
<tr>
<td>Organizer</td>
<td>• Enhance organization’s brand by leading the campaign</td>
</tr>
<tr>
<td></td>
<td>• Represent member interests in how the campaign and its resources are developed</td>
</tr>
<tr>
<td>Supporter</td>
<td>• Enhance brand by partnering with other organizations</td>
</tr>
<tr>
<td></td>
<td>• Leverage campaign marketing and resources to enhance your own programs</td>
</tr>
<tr>
<td></td>
<td>• Collaborate with DOE to document energy savings</td>
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<tr>
<td>Participant</td>
<td>• Access to DOE technical resources and webinars</td>
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<tr>
<td></td>
<td>• Save energy and money</td>
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<td></td>
<td>• Earn campaign recognition for achievements</td>
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Goal: Recruit Participants to Join the Campaign

<table>
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<tr>
<th>Description</th>
<th>Evaluate</th>
<th>Replace or Retrofit</th>
<th>Start Saving</th>
<th>Be Recognized</th>
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<tr>
<td></td>
<td>Evaluate the business case for high-efficiency RTU improvements</td>
<td>Commit to retrofitting or replacing at least one RTU</td>
<td>Share expected and actual energy savings and provide feedback</td>
<td>Recognition will be awarded to participants in a variety of categories</td>
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<table>
<thead>
<tr>
<th>Resources</th>
<th>Evaluate</th>
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<tr>
<td>Case studies</td>
<td>RTU specifications</td>
<td>Calculators</td>
<td>Exact form of recognition (plaque, certificate, etc.) to be determined</td>
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<tr>
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<td>Technical advisors</td>
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| Important Dates | Campaign launches May 30, 2013 | Limited technical assistance is available until July 2014 | Deadline to report savings claims is September 2014 | Awards announced November 2014 |
The campaign will link to RTU incentive programs and efficiency program resources

- Feature your logo on the campaign website
- Link from your RTU program to the campaign website for access to additional resources
- Enhance your RTU program brand by partnering with organizations with similar interests

Campaign organizers, DOE, and other utilities will work together to document the business case for RTU control retrofitting and early retirement

- Review development of campaign resources, including case studies
- (Optional) Raise the profile of your RTU program and resources by being featured as a case study that documents energy savings
Goal: Case Studies and Making the Business Case

Building owner and operator case studies

- Leverage third party demonstrations
- Target case studies at a variety of building types
- Highlight conditions where RTU replacements and retrofits make the strongest business case

Utility case studies

- How are utilities attributing energy savings and demand reduction to RTUs and RTU controls?
- What is the estimated cost effectiveness of an RTU?
- Case studies reduce the time, effort, and dollars needed to be spent on making the case to regulators
Goal: Recognizing Participants for Achievement

• Participants are eligible for campaign awards if they replace their RTU (minimum CEE tier 2) or if they retrofit their RTU with advanced controls.

• Building owners and operators must also submit energy savings estimates to the campaign.

• Awards will be conferred in at least the following categories:
  – Highest absolute annual savings at a single site (retrofit and new construction).
  – Highest percentage savings at a single site (retrofit and new construction).
  – Largest number of site replacements and retrofits.
  – Largest portfolio-wide annual energy savings.
  – Largest percentage of sites with replacements or retrofits.

• Awards will be announced at the conclusion of the campaign in November 2014.
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Join the campaign as a supporter:

- Promote the campaign and encourage participation
- Leverage the campaign technical and financial resources
- Highlight rebates, promotions or incentives you are offering that can benefit organizations replacing RTUs
- Collaborate with the campaign on case studies
- Earn recognition for being a utility sponsor

Ask of utility program administrators

- What challenges have you run into before when creating incentive programs for commercial RTUs?
- What barriers do you currently face?

Interested?

- Contact Andres Potes at andrespotes@waypointbuilding.com or Michael Deru at michael.deru@nrel.gov
Next Steps

**Pre Launch**
- Finalize organizer commitments
- Recruit early adopter supporters and participants
- Finalize program materials and website

**Launch May 2013**
- Host webinars
- Provide technical support
- Recruit additional supporters
- Work with supporters to recruit participants
- Author case studies and additional resources
- Participants report first year results and are recognized for achievements by December 2013