RTU Specifications: Procurement, Installation, Maintenance, and More

Advanced RTU Campaign
November 18, 2014
Advanced RTU Campaign

- Launched May 30, 2013
- Runs through 2015
- Promote high-efficiency RTU solutions
  - High-efficiency replacements and new installations
  - Advanced RTU control retrofits
  - Quality Installation and Quality Maintenance

www.advancedrtu.org
Advanced RTU Campaign – Progress

- **Partners**
  - **Organizers**: DOE, ASHRAE, RILA, FEMP, Number: 4
  - **Supporters**: Manufacturers, service providers, utilities, efficiency orgs, industry associations, etc., Number: 130
  - **Participants**: Building owners, Number: 39

- **Impact**
  - Total RTUs = 33,175
  - 2013 and 2014
Why RTU’s Are Important?

- RTUs cool over 60% of U.S. commercial building floor area
- Consume 4.3 Quads annually
- Large stock of 6 to 16 year old RTUs

Source: AHRI

Credit: Michael Deru
What Can we do with all these RTUs?

1. Planned replacement with high-efficiency RTUs
   - Consider for all RTUs > 10 years old

2. Retrofit with variable speed controls
   - Consider for RTUs > 7 tons and < 10 years old

### Advanced RTU Campaign: Decision Tree for RTU Replacements or Retrofits

<table>
<thead>
<tr>
<th>Preliminary Screening</th>
<th>Initial Inventory</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the general condition, age, and size of each RTU?</td>
<td>Building name</td>
</tr>
<tr>
<td>Is the RTU a candidate for retrofit or replacement?</td>
<td>Space type</td>
</tr>
<tr>
<td>General Condition</td>
<td>Manufacturer</td>
</tr>
<tr>
<td>Age</td>
<td>Model</td>
</tr>
<tr>
<td>Size</td>
<td>General condition</td>
</tr>
<tr>
<td>Fair-Good, Under 10 years</td>
<td>Maintenance history</td>
</tr>
<tr>
<td>Under 7 tons</td>
<td></td>
</tr>
<tr>
<td>Fair-Good, Under 10 years</td>
<td></td>
</tr>
<tr>
<td>Over 7 tons</td>
<td></td>
</tr>
<tr>
<td>Fair-Good, Over 10 years</td>
<td></td>
</tr>
<tr>
<td>Poor</td>
<td></td>
</tr>
</tbody>
</table>

- No Action
- Retrofit
- Replace
- Replace
RTU Evaluation Process

Gather Information

- Initial RTU Inventory: RTU Inventory Spreadsheet
- Preliminary Screening: Bin RTUs for retrofit, replacement, or no action
- Detailed Inventory: RTU Inventory Spreadsheet
- Visual-Based Field Evaluation: RTU Field Evaluation Checklist

Analyze

- Analysis: make the business case and prioritize actions. RTU Incentives Database, RTU Comparison Calculator, 179D DOE Calculator, RTU Sizing Guidance, and ARC Case Studies

Plan

- Project Planning: See the list of ARC Supporting Partners

Take Action

- Procurement: Procurement Specifications for guidance
- Measurement and Verification (M&V): Use the M&V Guidance
High-Efficiency RTU Procurement Specification

- Easy to read list of high-efficiency RTU features
- Use for RTU replacements or new construction
- Use directly or to inform development of a specification or RFP
- Text description of each performance category with a table of good and best performance.
Partial performance table

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Good Performance</th>
<th>Best Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cooling efficiency</strong></td>
<td>Performance meets or exceeds the CEE Tier 2 performance specification</td>
<td>RTU Challenge specification&lt;br&gt;- IEER ≥ 18</td>
</tr>
<tr>
<td><strong>Heating efficiency</strong></td>
<td>Gas furnace:&lt;br&gt;- Thermal efficiency &gt; 80%&lt;br&gt;Heat pump performance exceeds the CEE performance specification&lt;br&gt;HSPF for units &lt; 65,000Btu/h, Tier 2&lt;br&gt;COP for units ≥ 65,000Btu/h, Tier 1</td>
<td>Thermal efficiency ≥ 90% for DOAS applications in cold regions</td>
</tr>
<tr>
<td><strong>Fan efficiency</strong></td>
<td>Supply air (evaporator) fan overall efficiency &gt; 60%</td>
<td>Fan motor efficiency &gt; 70%&lt;br&gt;Direct drive fans&lt;br&gt;Backward curved fans for the condenser fan</td>
</tr>
</tbody>
</table>
Advanced RTU Control Retrofit Specification

Provides a definition, a simple to read list of features, and best applications

- **Essential Features**
  - Variable or multispeed fan control
  - Maintain proper ventilation flow rates
  - Demand controlled ventilation (when appropriate)
  - Integrated economizer control (when appropriate)

- **Desirable Features**
  - Remote monitoring
Additional Procurement Resources

- RTU Challenge Specification – 18 IEER
- adidas RTU RFP
- adidas case study
- ACCA Quality Installation Checklist
- ACCA Quality Maintenance Checklist
Contact Information

www.AdvancedRTU.org

- Michael Deru, National Renewable Energy Laboratory
  - Michael.deru@nrel.gov
  - 303-384-7503

- Marta Schantz, Waypoint Building Group
  - MartaSchantz@waypointbuilding.com
  - 231-598-2332
KIRK BEAUDOIN
FMA, RFMP, LEED GREEN ASSOCIATE

Facilities Manager
adidas America, Inc.

President, 2014-15 Board of Directors
PRSM Association
WHY SUSTAINABILITY?

GREEN
Mission
To provide exceptional facilities support and efficiently maintain the built environment to ensure a premium consumer experience.

Values
Identify sustainable & innovative solutions
Protect & maintain company assets
Foster healthy partnerships
Easy to do business with
Never stop learning
We reduce the environmental footprint of both our own operations and our suppliers’ factories.
**LED track lighting** - Converted existing 39w & 70w Metal Halide track heads to 19.5w PAR38 LED lamps.

**HVAC controls (EMS)** – Piloting a Wi-Fi enabled t-stat solution. Remote monitoring and maintains the set point and schedule integrity.

**LED hi-bay lighting** - Converting existing hi-bay fixtures, (150w, 210w, & 400w) to our new 55w LED standard.
SUSTAINABLE EFFORTS

Proactive HVAC replacement - By proactively replacing units we are allowed to dictate the timing and schedule in the off season, avoiding inflated costs. Failures and downtime are also reduced minimizing the impact on the stores. Also ensures we receive equipment with the features and efficiency ratings we desire, rather than simply what is conveniently available. Our new standard is 20-30% more energy efficient than existing equipment.

Standardized HVAC equipment - Rather than replacing like for like, standardize to a single brand of equipment to ensure we receive equipment with the features and efficiency ratings we desire, rather than simply what is conveniently available. Also leverage our planned purchase volume to obtain improved pricing.
adidas Saves Energy and Costs with Planned RTU Replacement Program

Facility and Activity Overview

adidas has received several recognitions for their significant sustainability efforts, as such, they are a role model for retail companies that want to improve energy efficiency at their stores. As part of their efficiency efforts, adidas is heavily involved in the Advanced Rooftop Unit (RTU) Campaign, the Professional Retail Store Maintenance Association, and other leading facilities maintenance organizations.

adidas implemented a successful planned RTU replacement program to save energy and avoid costly emergency replacements. This approach allows them to standardize equipment features, streamline the process, reduce costs, and provide
PROACTIVE HVAC REPLACEMENT PROGRAM

SELLING THE PROGRAM

• Reduces repair costs
• Less break downs
• More energy efficient
• Environmentally friendly

SHOW THE ROI

• Energy reduction
• Future M&R savings
• Rebates
• Cost of doing nothing
- RFP
- Single Brand
- Requirements
  - CEE Tier 2
  - Economizer
  - Multi speed motors (VFD)
  - * Hinged access panels
  - * Non-stacked coils
PROACTIVE HVAC REPLACEMENT PROGRAM

- RFP
- Single Brand
- Requirements
  - CEE Tier 2
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Kirk Beaudoin

FMA, RFMP, LEED Green Associate

Facilities Manager
adidas America, Inc.

President, 2014-15 Board of Directors
PRSM Association

kirk.beaudoin@adidas.com
971-234-2455
QI + QM = Efficiency & Comfort

Donald Prather
Technical Services Manager
Air Conditioning Contractors of America

The DOE RTU Challenge Specification Webinar
Tuesday the 18th of November 2-3 PM EST
ACCA History

The only nationwide association representing the technical, educational, and policy interests of U.S. businesses that design, install and maintain indoor environmental systems

- National Warm Air Heating and Air Conditioning Assn. (1914)
- Air Conditioning and Refrigeration Contractors of America (1946)
- National Environmental Systems Contractors Assn. (1968)
- Air Conditioning Contractors of America (1969)
What will be covered in this Presentation

This is a 30,000 ft. overview of the Information and material ACCA can provide to building owners, who want their roof top package (RTU) HVAC systems to reliably operate and provide the comfort and efficiency they were designed to deliver.
Quality Installation

ACCA Standard 5

HVAC Quality Installation Specification
Residential and Commercial Heating, Ventilating, and Air Conditioning (HVAC) Applications

The Air Conditioning Contractors of America Educational Institute (ACCA-E) Standards Task Team (STT) develops standards as an American National Standards Institute (ANSI) accredited standards developer (ASD). ACCA develops voluntary standards as outlined in the ACCA Essential Requirements and the ANSI Essential Requirements. ACCA standards are developed by diverse groups of industry volunteers in a climate of openness, consensus building, and lack of dominance (e.g., committee/group/team balanced). Essential requirements, standard activities and documentation can be found in the standards portion of the ACCA website at www.acca.org. Questions, suggestions, and proposed revisions to this standard can be addressed to the attention of the Standards Task Team, ACCA, 2900 Shirlington Road, Suite 300, Arlington, VA 22206.

ACCA Standards are updated on a five-year cycle. The date following the standard number in the title of approval release by the ACCA-E Standards Task Team. The latest copy may be purchased from the ACCA online store at www.acca.org or ordered from the ACCA bookstore via toll-free telephone at 888-236-2235.

www.acca.org/standards/quality
Building owners and operators who choose contractors …

that offer QI and high performance heating ventilating and air conditioning (HVAC) equipment …

enjoy enhanced comfort, reduced energy usage, improved occupant productivity, and enhanced occupant safety.
A newly-released NIST research report, entitled *Sensitivity Analysis of Installation Faults on Heat Pump Performance* (September 2014), details that substantial energy efficiency is lost due to design and installation deficiencies. Not following the requirements in the ACCA 5 QI Standard can increase annual energy consumption by 30% or more.

www.acca.org/standards/quality
Failure To Observe ACCA 5 QI Substantially Increases HVAC Energy Consumption

Multiple Deficiencies Have An Additive Impact On Efficiency

http://www.acca.org/standards/quality/
For Building Managers

(www.acca.org/buildings)

From gas stations to high rises, your indoor environment system has a huge impact on your monthly operating costs.

Not to mention the impact that it has on your employees, tenants, and customers ... they need to be comfortable if you want to keep them happy.

We want to help commercial building owners and managers find the right contractor, and ask the right questions so that you control your energy costs while ensuring occupant comfort. We've assembled these resources to help you make the right decision.

Click to Find a Professional Contractor

What to Expect From a Professional

Your heating and air conditioning system is a complex mechanical system. Properly installing and maintaining them is not an easy thing to do. It requires education as well as skill. Too often, commercial building owners and managers feel rushed by "contractors" who prefer to keep the process as mysterious as possible, because it benefits them.

ACCA wants to take the mystery out, and focus the benefit where it belongs ... on you! Watch our free video, "A Guide for Business Heating & Air Conditioning Service," for a full explanation of how to choose the right contractors.
For Building Managers
(www.accia.org/buildings)

Commercial
Quality HVAC Installation

Commercial
Quality HVAC Installation
You Should Get What You Paid For

The checklist below will assist you in evaluating the capabilities of different HVAC companies and the proposals they submit. The questions on the checklist will help you understand the requirements contained within the nationally-recognized HVAC quality installation standard, and the explanations detail "what's in it for you." If you seek value, rate your contractor — before you rate the price. For a free PDF copy of the ACCA HVAC Quality Installation Specification, visit www.accia.org/quality.

Using the Checklist

Controlling costs is usually a driving force for building owners when building a new facility or replacing an existing HVAC system. However, how can you best assess the many variables affecting the installation of — or the desired benefits from your new heating and cooling system — when installation costs are but one variable in the total value equation? Will problem areas (rooms too hot or cold) be addressed? Will the equipment operate in an energy-efficient manner? There are many considerations to be addressed when discerning a contractor's skills, evaluating their proposals, and ensuring you get the value you pay for.

The "QI Elements Questions" provide guidance that will help you differentiate the capabilities and services of each contractor. Each "Explanation" portion conveys the benefit you will receive from the element and identifies the typical tasks the contractor will perform. The columns to the right of the explanation are for recording your score. Following the list of QI elements are some business related variables which may affect your selection of a contractor. This secondary list is not meant to be exhaustive, but to suggest other items for consideration.

Some of the steps in the Checklist apply to all installations, while others are specific to certain appliances:
1. Questions that exclude air conditioners or heat pumps will state, "Does not apply to A/C or heat pumps."
2. Questions that exclude fossil fuel appliances like furnaces and boilers will state, "Does not apply to furnaces or boilers."
3. Questions that exclude only boilers will state, "Does not apply to boilers."

The shaded column to the left of the checklist indicates approximately when each task should be performed. Because some tasks must be evaluated before they occur, you should have the contractor's intent to perform these functions in writing. Most contractors want to do quality work, but contractors who document their intent generally fulfill it as well.

Suggested Rating Procedure

Use this checklist to rate your contractor, or to select between two or more contractors. Each question is worth one point unless the "Explanation" column recommends an additional point. After evaluating the contractors, add the contractor's points, and then divide their total points into their total price. This example is for a new building however, points could be attributed in the same way for an equipment replacement. After three bids:
1. Contractor A received 8 points and had the lowest total price — $16,000 to install the HVAC system.
2. Contractor B received 20 points, with the most expensive price — $25,000 to install the HVAC system, pressure test the duct distribution system for leaks, balance the airflow, and other associated tasks.
3. Contractor C received 15 points, and had a midrange — $22,500 to install the HVAC system, pressure test the duct distribution system for leaks, and other associated tasks.

This analysis method portrays the relative cost for each point of quality:

- Contractor A is $2,000 per point ($16,000 / 8 pts = $2,000 per point)
- Contractor B is $1,250 per point ($25,000 / 20 pts = $1,250 per point)
- Contractor C is $1,500 per point ($22,500 / 15 pts = $1,500 per point)

Based on point totals, Contractor B most closely follows the QI elements, uses business practices which meet your needs, and offers a cost value for your money (e.g., lowest $ per point). The price difference between Contractors B and C is $2,500. This is a lot of money, but for an HVAC system that could last for decades, the expense may be justified.
Provides a scoring and grading system for evaluating contractor bids based on the QI requirements.
One would think, everyone knows:

When HVAC systems are not maintained, they do not continue to provide the level of work they were designed for.
To provide consistency and maintain the thermal comfort, energy efficiency, and indoor air quality of commercial heating ventilating and air conditioning (HVAC) systems, a standard practice for their inspection and maintenance is needed.
Commercial QM = Standard 180

Standard Practice for Inspection and Maintenance of Commercial Building HVAC Systems
Standard 180 establishes the minimum heating ventilating and air conditioning (HVAC) inspection and maintenance requirements that preserve a system’s ability to achieve acceptable thermal comfort, energy efficiency, and indoor air quality in commercial buildings.
<table>
<thead>
<tr>
<th>Inspection/Maintenance Task</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Check for particulate accumulation on filters. Clean or replace as necessary to ensure proper operation.</td>
<td>Quarterly</td>
</tr>
<tr>
<td>b. Check ultraviolet lamp. Clean or replace as needed to ensure proper operation.</td>
<td>Quarterly</td>
</tr>
<tr>
<td>c. Check system traps, pumps, and controls. Clean or replace as needed to ensure proper operation.</td>
<td>Semiannually</td>
</tr>
<tr>
<td>d. Check control system and devices for evidence of improper operation. Clean, lubricate, repair, adjust, or replace components as needed to ensure proper operation.</td>
<td>Semiannually</td>
</tr>
<tr>
<td>e. Check Pump, Prime as needed to ensure proper operation.</td>
<td>Semiannually</td>
</tr>
<tr>
<td>f. Check fan belt tension. Check for belt wear and replace if necessary to ensure proper operation. Check braces for evidence of improper alignment or evidence of wear and correct as needed.</td>
<td>Semiannually</td>
</tr>
<tr>
<td>g. Check variable-frequency drive for proper operation. Correct as needed.</td>
<td>Semiannually</td>
</tr>
<tr>
<td>h. Check for evidence of buildup or fouling on heat exchange surfaces. Restore as needed to ensure proper operation.</td>
<td>Semiannually</td>
</tr>
<tr>
<td>i. Check for proper operation of cooling coil, heating coil, or heat exchangers and for damage or evidence of leaks. Clean, reutor or repair as required.</td>
<td>Semiannually</td>
</tr>
<tr>
<td>j. Check air filtration housing and integrity. Correct as needed.</td>
<td>Semiannually</td>
</tr>
<tr>
<td>k. Check control box for dirt, debris, and/or loose terminations. Clean and tighten as needed.</td>
<td>Semiannually</td>
</tr>
<tr>
<td>l. Check motor connector for pitting or other signs of damage. Repair or replace as needed.</td>
<td>Semiannually</td>
</tr>
<tr>
<td>m. Check fan blades and fan housing. Clean, repair, or replace as needed to ensure proper operation.</td>
<td>Semiannually</td>
</tr>
<tr>
<td>n. Check refrigerant system temperatures. If outside of recommended levels, find cause, repair, and adjust refrigerant charge to achieve optimal operating levels.</td>
<td>Semiannually</td>
</tr>
<tr>
<td>o. Check fan drive for wear or problems due to poor alignment or poor bearing seating. Repair or replace as needed.</td>
<td>Semiannually</td>
</tr>
<tr>
<td>p. Check integrity of all panels and curbs on equipment. Replace fasteners as needed to ensure proper integrity and fit/finish of equipment.</td>
<td>Semiannually</td>
</tr>
<tr>
<td>q. Assess field-serviceable bearings. Lubricate if necessary.</td>
<td>Semiannually</td>
</tr>
<tr>
<td>r. Check drain pans, drain lines, and coil for biological growths. Clean as needed.</td>
<td>Semiannually</td>
</tr>
<tr>
<td>s. Check evaporator coil fins. Restore if possible. Replace coil if necessary to return to proper functioning.</td>
<td>Semiannually</td>
</tr>
<tr>
<td>t. Inspect for evidence of moisture carryover beyond the drain pan from cooling coils. Make corrections or repairs as necessary.</td>
<td>Semiannually</td>
</tr>
<tr>
<td>u. Check for proper operation. Clean, lubricate, repair, or adjust as needed to ensure proper operation.</td>
<td>Semiannually</td>
</tr>
<tr>
<td>v. Inspect anti-cooled condenser surfaces for damage or evidence of leaks. Repair or clean as needed.</td>
<td>Semiannually</td>
</tr>
<tr>
<td>w. Check low ambient fluid pressure control sequence for proper operation. Repair or replace components as needed.</td>
<td>Semiannually</td>
</tr>
<tr>
<td>x. Check condenser chamber, bower, and flue for fouling, leaks, moisture problems, condensation, and combustion. Clean, test, and adjust condenser process for proper operation.</td>
<td>Semiannually</td>
</tr>
<tr>
<td>y. Visually inspect insulation and areas of moisture accumulation for biological growth. If present, clean or dry as fast as needed.</td>
<td>Semiannually</td>
</tr>
<tr>
<td>z. Check compressor oil levels and/or pressure on refrigerant systems having oil level and/or pressure measurement issues. Repair, replace, or adjust as needed to ensure proper operation.</td>
<td>Semiannually</td>
</tr>
<tr>
<td>aa. Visually inspect exposed ductwork and external piping for insulation and support barrier for integrity. Correct as needed.</td>
<td>Semiannually</td>
</tr>
</tbody>
</table>

TABLE 5-22 Rooftop Units

Inspection/Maintenance tasks A-Z listed by the frequency required:

- **Quarterly**
- **Semiannual**
- **Annual**
Customer-focused, Quality Maintenance Checklist

### Standard Practice for Inspection & Maintenance of Commercial Building HVAC Systems

Your HVAC System’s Required Inspection & Maintenance

The HVAC system is the single largest user of energy in your building, making it one of your biggest monthly expenditures. If it is not maintained in proper working order you will be sacrificing indoor comfort while seeing increased power usage, and will likely incur higher repair costs and premature equipment replacement costs. That is why it is so important for you to utilize a quality contractor to regularly inspect and service your HVAC systems. But, how can you tell which contractor will do the best job? The maintenance plans that contractors offer vary in scope and pricing from all-inclusive to minimal inspection and filter change. The first step in choosing a contractor is to know what basic items are included in competing contractors’ maintenance plans in order to effectively compare relative plan values.

#### Using the Quality Maintenance Checklist

The checklist below will help you evaluate maintenance proposals. The questions found in the ‘What to Ask the Contractor’ columns are designed to help you determine whether or not the contractor is complying with industry-recognized standard maintenance practices. When filling out the checklist, simply write a ‘yes’ or ‘no’ reflecting the contractors’ response to each question in the box provided. After the interview, you will have an indication as to whether the contractors’ proposed services meet the requirements in the Standard Practice for Inspection and Maintenance of Commercial Building HVAC Systems (ANSI/ASHRAE/ACCA Standard 180-2012). Always remember that before signing any agreement, you should compare the contractor’s written maintenance agreement plan with the interview responses to make sure that they are the same. The time to clarify questions is before the contract is signed.

<table>
<thead>
<tr>
<th>What to Ask the Contractor</th>
<th>Why the Question is Important</th>
<th>Contractor 1</th>
<th>Contractor 2</th>
<th>Contractor 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>If so required under your jurisdiction, is the company licensed to do the work?</strong></td>
<td>You should only hire contractors that are complaint with your local licensing requirements.</td>
<td><strong>Yes</strong></td>
<td><strong>Yes</strong></td>
<td><strong>No</strong></td>
</tr>
<tr>
<td><strong>How long will the maintenance inspection take?</strong></td>
<td>A complete HVAC system inspection will take approximately 60 minutes per HVAC system. (less time generally = less inspected).</td>
<td><strong>Yes</strong></td>
<td><strong>No</strong></td>
<td><strong>Yes</strong></td>
</tr>
<tr>
<td><strong>Did the contractor inquire how the system has been operating and whether you have any concerns or issues?</strong></td>
<td>This understanding provides a better basis for assessing equipment operation and will better enable the contractor to meet your expectations.</td>
<td><strong>Yes</strong></td>
<td><strong>Yes</strong></td>
<td><strong>Yes</strong></td>
</tr>
<tr>
<td><strong>Does the maintenance agreement include a safety inspection to make sure the HVAC system is installed according to code?</strong></td>
<td>Safety hazards that are not obvious to you will be immediately recognized by a trained technician and reported to you.</td>
<td><strong>Yes</strong></td>
<td><strong>Yes</strong></td>
<td><strong>No</strong></td>
</tr>
<tr>
<td><strong>Will the contractor review the Standard 180 based maintenance requirements for your varied HVAC systems with you?</strong> (For a sample list, see component list on next page.)</td>
<td>Maintenance plans are based on the type of equipment you have and the level of service you have contracted for. Additionally, some maintenance tasks like changing filters may need to be performed between contractor visits.</td>
<td><strong>Yes</strong></td>
<td><strong>No</strong></td>
<td><strong>Yes</strong></td>
</tr>
<tr>
<td><strong>Does the contractor’s maintenance plan include evaluating the equipment’s performance?</strong></td>
<td>HVAC equipment performance must be checked for your HVAC equipment to operate efficiently.</td>
<td><strong>Yes</strong></td>
<td><strong>Yes</strong></td>
<td><strong>No</strong></td>
</tr>
<tr>
<td><strong>Will the contractor review the maintenance issues with you?</strong></td>
<td>It is important for you to understand what was found during the scheduled maintenance visit especially if corrective action is needed.</td>
<td><strong>Yes</strong></td>
<td><strong>Yes</strong></td>
<td><strong>Yes</strong></td>
</tr>
</tbody>
</table>
How to Join the Advanced RTU Campaign

Join as a Participant

*Building owners and managers with influence over building operations and management*

- Pledge to evaluate existing RTUs, implement a replacement or retrofit, and share savings with the Campaign
- Agree to be listed on the Campaign website as a Participant
- If applicable, evaluate your energy savings potential and share this information with the Campaign
- If applicable, submit documentation of RTU replacements or retrofits to earn an Award that demonstrates your leadership in building energy efficiency

Join as a Supporter

*Organizations that provide technical services and products, electric utilities, or regional efficiency organizations*

- Spread the Campaign’s message
- Recruit Participants
- Offer resources to help building owners and managers improve their buildings' efficiency
- Share data from energy efficient RTU replacement/retrofit cases

[www.advancedRTU.org](http://www.advancedRTU.org)
Contact Information

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- **Donald Prather**, ACCA
  - [donald.prather@acca.org](mailto:donald.prather@acca.org), 703-824-8867