adidas RTU Planned Replacement Program

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,[1] the Professional Retail Store Maintenance Association, and other leading facilities maintenance organizations.

adidas successfully implemented a 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 higher quality results.

Decision Methodology

adidas uses a detailed existing equipment list as part of its planned replacement program to identify RTUs that are targeted for replacement several years into the future. This multi-year commitment for large unit purchases enables adidas to obtain competitive pricing through a request for proposal (RFP) process and negotiations with national accounts for the major manufacturers. The RFP defines a specific set of features and minimum performance requirements and lets manufacturers propose their ideal solutions. The winning selection results in a standard RTU, which leads to a streamlined replacement process that further reduces costs. adidas may use other RTUs in some locations to test new technology or for locations requiring specific or customized products.

The RFP requires that each proposed unit meet the performance level of the Consortium for Energy Efficiency Tier 2 and have an economizer, staged or multispeed capabilities, and hinged panels. The resulting high-performance RTUs achieve the

[1] The Advanced RTU Campaign promotes high-efficiency RTU solutions *http://www.advancedrtu.org/CommHVAC_UnitarySpec2012.pdf*

adidas store in New York City. Photo from adidas.

Highlights	
Established	1920
Number of Facilities	115 U.S. retail stores
Employees	40,000+
Project Scope	Multiyear replacement program for all stores

Looking for more information? Visit the Advanced RTU Campaign and DOE Better Buildings Space Conditioning Team sites for information and resources on:

- new technologies
- evaluation of RTUs
- savings calculators
- building the business case
- case studies

efficiency threshold of the Advanced RTU Campaign and qualifies the company for rebates in many locations.

Timing of the replacements is also an important consideration. adidas recognizes that, should issues arise with the system, summer and winter are disadvantageous times to modify heating, ventilating, and air conditioning systems. Thus, adidas aims to install new systems during the shoulder seasons to avoid the extreme temperature conditions under which the HVAC is most needed.

> *"I consider our proactive replacement program highly successful, with benefits on multiple levels. From reduced utility spend, and cost avoidance on aging equipment repairs, to an improved consumer shopping experience through reduced equipment failures in summer months. Additionally from a sustainability standpoint, we are running more energy efficient equipment and removing R-22 from our fleet."*
>
> Kirk Beaudoin
> *adidas Facilities Manager*

Implementation

adidas initially implemented the proactive replacement program in 2012. The company replaced 19 units at 7 locations. As part of its 2013 proactive replacement plan, adidas replaced an additional 13 RTUs with CEE[2] Tier 2 efficient models across four retail stores in San Diego, California; Orlando, Florida; Sunrise, Florida; and Woodburn, Oregon. The RTUs being replaced were 12–21 years old (average 14 years old). Their sizes (refrigeration tons) were 4–12.5 (average 7.8 tons).

The adidas implementation process standardizes many aspects of RTU replacement, but each installation is unique and requires engineering and economic reviews. Curb adapters may be necessary when changing brands or when replacing a very old RTU with a new RTU of the same brand. In some cases, structural engineering studies are needed because the new units, combined with the curb adapters, are heavier.

Each installation is reviewed to determine where the costs to standardize the brand are significantly higher than the option to replace like brands for like.

Results

By standardizing the RTUs for most replacements, adidas has been able to streamline acquisitions and ensure each location has the required features. At the same time, the competitive selection process has allowed adidas to procure new RTUs at a cost 10% less than the next-closest proposal. The process has been so successful that adidas is paying less for the new efficient RTUs in some cases than for standard replacement units in previous years, and the units have features that were not included on previously installed equipment. Standardization of features and performance requirements also allows for a more streamlined installation and maintenance practices.

The new high-efficiency RTUs have helped adidas reduce energy and maintenance costs. Electricity consumption is estimated to be 20% to 40% lower than new standard efficiency RTUs depending on the location. In comparing year over year numbers, adidas reported a reduction in HVAC service calls and in total repair spending in 2013. Though the results could be attributed to several other factors, including its transition to new vendors performing the preventative maintenance and repairs, the RTU fleet is newer on average, and older units with the highest probability of failure are gone.

What's Next?

adidas is continuing the RTU planned replacement program: reviewing the equipment list and identifying locations with equipment 15 years or older for the next round of replacements. In 2014, adidas identified candidates for RTU replacement based on a coordinated review with the real estate department to assess lease length and long-term plans site- by-site. Four locations are slated for replacement, consisting of 12 units, 112 combined tons, and an average age of 15.75 years for the existing units. The company intends to replace these units with high efficiency CEE Tier 2 units.

Future years will follow the same RTU planning and replacement processes, and the standard specification will be reviewed occasionally to ensure the company is receiving the best possible return on investment.

[2] CEE Unitary Air Conditioning Specification (Tiers) http://library.cee1.org/sites/default/files/library/7559/CEE_CommHVAC_UnitarySpec2012.pdf