



BOEING AND SRP CHART A PATH TO INDUSTRIAL ENERGY EFFICIENCY

Whether it's the inner reaches of outer space or planted on terra firma, Boeing has a long tradition of industry leadership and innovation.

It makes perfect sense that Boeing would collaborate with one of the nation's leading public power utilities — SRP — to realize a cutting-edge energy-efficiency project.

Boeing's facility in Mesa is home to 4,700 highly skilled employees who manufacture and assemble aviation parts for military helicopters — including the Apache AH-64D attack helicopter — as well as for ordnance systems and commercial airplane travel.

In 2009, Boeing was nearing the last phase of a comprehensive modification effort at its Mesa campus. The stage was set for a textbook opportunity to deploy one of the SRP PowerWise™ Business Solutions rebate programs for commercial and industrial electric customers.



SOARING TO NEW HEIGHTS

Boeing is the world's leading aerospace company and the largest manufacturer of commercial jetliners and military aircraft combined. Based in Chicago, Boeing employs more than 158,000 people in 70 countries. While its focus is building the best aircraft in the world, energy management is one of Boeing's core strategies to realize its mission.

"We've been on the forefront of energy innovation and reduction for some time," said Carl Luther, Boeing Facilities Analyst.

SRP Key Account Manager Brian Bednar agrees. He said Boeing long has worked with SRP to reduce energy impact, which helps the greater community by eliminating the demand for additional power lines and plants.

"They are always asking us questions about our programs and initiatives," Bednar said. "Every year we send out customer surveys, and without fail, Boeing responds with suggestions pertaining to energy usage and management."

Five years ago, Luther gained approval for a multiyear upgrade of the central cooling plant at Boeing's facility located 20 miles east of Phoenix. The project revolved around rebuilding cooling towers and pumps, adding two new high-efficiency chillers and cooling towers, and replacing four 25-year-old, 1,250-ton chillers used to keep the modern, 2-million-square-foot complex cool in the Sonoran Desert.

As a comparison, the standard home air-conditioning system uses a single 3.5-ton chiller. The Boeing project deals with a cooling capacity roughly equivalent to 2,150 homes.

"And just like cooling systems on your home, our chillers don't last forever, especially given the needs of a large industrial facility," Luther said.

The timing couldn't have been better. As Boeing prepared for replacement of two of those chillers — a \$1.2 million improvement — SRP launched its PowerWise Business Solutions portfolio of rebate programs. Boeing already had completed more than half of the planned upgrades to the central plant.

Through its incentive program, SRP offers a wide range of energy-efficiency opportunities. SRP developed this lineup to help commercial customers better manage energy usage and increase energy efficiency while incorporating the latest technologies and technical assistance.

At mach speed, Boeing keenly applied for the SRP PowerWise™ Standard Business Solutions rebate. The incentive offered the best fit for Boeing's needs. According to Luther, SRP's \$100,000 incentive will pay for about one-third the purchase price of one of the new high-efficiency chillers.

"It certainly allows us to invest in things that we normally wouldn't have been able to. In addition to this project, we are engaging in other conservation activities, such as additional lighting retrofits," Luther said. "It also gave us an opportunity to right-size some electrical infrastructure to meet our requirements. We are able to reduce our carbon footprint and operate much more efficiently."





The old chillers produced cooling for about 0.80 kilowatts (kW) per ton of cooling (12,000 British thermal units per hour). The new chillers produce cooling for 0.47 kW per ton with equipment that is about 41% more efficient.

"It falls right in line with SRP's incentive program, because we are basically paying customers back to reduce their kilowatt-hours," Bednar said. "SRP's incentive program is a wonderful program for all of our customers. Everybody should take advantage of it on some level. There is something there for everybody."

Boeing was the first large industrial customer to receive the maximum rebate this PowerWise Business Solutions program offers.

"It's great for an iconic company like Boeing to be able to work with an icon within the energy arena," Luther said. "SRP is certainly very well-respected, and it's a pleasure to work with them."

RETURN ON INVESTMENT

In these tough economic times, a company's return on investment (ROI) is a crucial consideration. According to Luther, ROI was not the catalyst in moving forward with the project. Boeing undertook it as an "infrastructure improvement project to improve reliability, not for a rate of return."

Boeing executives said the SRP incentive program was a contributing factor in proceeding with the energy-conserving improvements as many as four years earlier than anticipated. They said it gives the project four years of decreased load and Boeing four years of added benefit, which is "a pretty major accomplishment."

Boeing anticipated the following benefits from this project, which proves doing the right thing generates positive returns.

- In 2009, a savings of 2.9 megawatts of energy
- In 2010 and beyond, a savings of 3.7 megawatt-hours of energy annually
- Yielding a simple ROI in just slightly more than seven years
- Reduced carbon emissions of 2,050 tons per year

SRP'S POWERWISE STANDARD BUSINESS SOLUTIONS

SRP PowerWise Business Solutions offers a wide range of energy-efficiency opportunities, including rebates for technical assistance and equipment installation. SRP developed this selection to help commercial customers better manage energy usage, increase energy efficiency and employ the latest technologies.

Our Standard Business Solutions program provides rebates that are based on equipment sizing and level of efficiency for the purchase and installation of qualifying high-efficiency equipment, such as:

- Lighting — T12 to T8/T5 lamp retrofits, occupancy sensors, premium-efficiency electronic ballasts, incandescent to hardwired compact fluorescents, LED exit signs and more
- HVAC — high-efficiency unitary air conditioners and heat pumps, chillers and packaged terminal units

- Compressed-air systems — low-pressure drop filters, additional receiver capacity, refrigerated cycling dryers, VFD compressors and zero-loss condensate drains
- Refrigeration — anti-sweat heater controls, door gaskets, electronically commutated motors, high-efficiency doors and display cases, night covers and strip curtains

SRP rebate programs are operated on a first-come, first-served basis until all funding has been committed. Customers are subject to maximum rebate caps per customer per program year through April 30, 2012.

Most measures and projects require preapproval before new equipment is ordered, purchased or installed. Specific details and applications for programs and services for SRP's PowerWise Business Solutions are available through SRP account managers, at savewithsrpbiz.com or calling the program administrator at (602) 236-3054.

CUSTOMER PROFILE: BOEING

Boeing Mesa is part of Boeing Military Aircraft's Rotorcraft Division and home to the AH-64D Apache attack helicopter. Employees on the 348-acre facility also produce other products, such as the A160T Hummingbird unmanned vehicle and the AH-6i light attack helicopter, and are developing high-technology innovations for future rotorcraft applications.

Additionally, Boeing designs and manufactures electronic and defense systems, missiles, satellites, launch vehicles, and advanced information and communication systems. As a major service provider to NASA, Boeing operates the space shuttle and International Space Station.

The company also provides numerous military and commercial airline support services. Boeing has customers in more than 90 countries and is one of the largest U.S. exporters in terms of sales.

Boeing recognizes the serious challenges facing our ecosystem and is committed to improving the environmental performance of its operations, products and services.

ENVIRONMENTAL AFFILIATIONS

Boeing joined the U.S. Environmental Protection Agency (EPA) Climate Leaders in 2008. The industry-government partnership is committed to reducing the company's environmental impact by

completing a companywide greenhouse gas emissions inventory, establishing reduction targets and reporting progress to the EPA on an annual basis. The Climate Leaders program approved Boeing's five-year greenhouse gas emissions reduction target in 2008.

Boeing's Shared Services Group, which is responsible for site services, energy conservation, and facilities



maintenance and improvement, leads Boeing's participation in the joint U.S. Department of

Energy and EPA ENERGY STAR® program for energy management.

For more information, visit boeing.com.

