

## The RACE to Energy Savings

When the Rebuild America community partnership Rural Alaskans Conserve Energy (RACE) was established in late 1996, it set an ambitious agenda: to save energy in 210 remote Alaskan villages that typically have 500 or fewer residents.

RACE targeted villages that are accessible only by small plane or boat, where the high cost of oil transportation makes energy very expensive—up to \$1 per kWh, and when combined with Alaska's extreme cold temperatures, energy conservation is a top priority for these communities.

RACE has demonstrated that in small Alaskan communities, big savings can be achieved with lighting and systems upgrades. A typical school building—often the largest building in the community—can save \$15,000 a year in energy bills by making the building more energy efficient.

### *Striking Gold*

Since the 210 targeted villages were spread out over an area of 586,000 square miles, the implementation strategy was a key component to the plan. RACE developed a multi-pronged approach to provide each village with energy audits in large buildings (typically schools), training on energy conservation and technical support for retrofits and procurement.

Due to the complexity of RACE's plan, it was soon realized that the partnership would need strong partners to help meet their goals. RACE

teamed up with the state Housing and Finance Corporation, the state Department of Education, Honeywell, Inc., Johnson Controls, Inc. and the Alaska Rural Electric Co-op Association (ARECA), who each brought a variety of skills to the table. The state partners publicized the partnership's successes to the state's legislature and this publicity helped ensure that the State of Alaska would continue to provide matching grants for future RACE projects.

From March to May 1997, RACE audited 21 buildings in seven villages and recommended



*View of the Aniak school gym that received lighting retrofits.*

low cost/no cost energy conservation measures, such as lighting upgrades and operations training, for each. Three of the seven villages implemented the recommendations and, as a result, saw energy savings of 20-30 percent, with a payback of less than two years. Since that time, RACE has visited more than 80 communities to let them know about potential energy-savings measures.

#### **PARTNERSHIP FACTS:**

- **Total Area Committed:**  
2.7 million square feet
- **Total Energy Savings:**  
up to 13 GWH per year
- **Total Energy Cost Savings:**  
25% or up to .3 trillion btu/yr.

- **Total Number of Jobs:**  
Varies by village
- **Benefits:**  
Savings of 1.2 million gallons of fuel oil per year, reducing carbon monoxide by 70 tons and nitrous oxide by 319 tons

### *Schools Show the Way*

The Aniak High School Gym was selected as a demonstration project for lighting upgrades because of the village's high electricity costs (approximately 42 cents per kWh), short winter days and temperature extremes ranging from a low of minus 55 to a high of 85 degrees Fahrenheit. Realizing that lighting energy is especially critical where short winter days and long nights increase demand, Alaska Energy Authority's State Energy Program awarded the grant to Aniak, in part to teach other districts about the savings that high-efficiency lighting and equipment can yield.

T-12 fluorescent bulbs were replaced by the more efficient T-8s and magnetic ballasts were replaced by electronic ballasts, to control energy input into the new bulbs. For a mere \$12,892 in state and school district funds, Alaska Commercial Lighting of Anchorage installed high-efficiency lighting to cut energy costs by 20 percent.

Cost savings were not the only benefit, though. According to the superintendent, Bobette Bush, of the Kuspuk School District, which covers eight communities in western Alaska, Aniak is experiencing a substantial reduction in lighting costs and those savings will now go toward education.

RACE's other program activities include hosting a web page with links to energy conservation topic websites to encourage ongoing energy conservation training for school children, teachers and other interested community members.

### *More of the Midas Touch*

In 1999, RACE completed audits in 36 additional communities. By the end of 2000, RACE has completed 110 audits. One school in Chevak, Alaska was audited to determine where lighting was unnecessary, where to install motion sensors, where to replace incandescent lights with compact fluorescents and which fixtures should be removed entirely. The school district will see a projected 20 percent savings on energy costs.



*Aerial view of the Aniak Village.*

These examples demonstrate tangible financial results, but that's only half the story. According to Rebecca Garrett, Rebuild America Program Manager, "The payback for the Authority's retrofit projects are measured in months, but an enhanced learning environment is measured in lifetimes."

#### **TO LEARN MORE ABOUT RACE, CONTACT:**

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