Department of Energy

Hydrogen Fuel Cells Providing Critical Backup Power

APRIL 9, 2010

Customers of AT&T Wireless and Pacific Gas & Electric Company will enjoy service that's both cleaner and more reliable, thanks to backup power provided by about 200 hydrogen fuel cells. The two companies are becoming early adopters of hydrogen fuel cells as backups for the main power grid.

Both projects are funded by an $8.5 million Recovery Act grant to ReliOn, Inc. of Spokane, Wash., which specializes in hydrogen fuel-cell backups for businesses that need to stay functional during power failures. For utilities like PG&E, which serves about 15 million people in California, backup power is critical because it helps them locate problems at substations, allowing them to get the infrastructure back online quickly. Telecom companies like AT&T need backup power to keep cellular towers working in an outage.

This project will help meet those goals, reinforcing America's infrastructure and creating about 14 jobs. But Sandra Saathoff, of ReliOn, says it's also an attempt to transform the market by speeding up businesses' acceptance of fuel cells.

"Fuel cells are a new technology to most of our customers," she says. "Because it's new and it's really important to keep equipment functioning, they're really cautious about introducing new technology to their networks."

As a rule, Sandra says, businesses that need these backups prefer to slowly introduce the technology after much testing. Companies typically budget for backup power, but in the form of batteries or diesel generators. Paying for fuel cells means raiding other parts of the budget. All of this makes businesses reluctant to become early adopters.

The project seeks to reassure businesses by demonstrating the equipment will perform well and be cost-effective. Some cells will be analyzed for performance.

Sandra says fuel cells can be cheaper than conventional backups in the long run, in part because of federal tax incentives and lower maintenance costs. "If you're looking at maintenance costs for a ReliOn fuel cell, it's changing an air filter every 400 run-hours. That ends up being a couple hundred dollars," she says. "Maintenance costs on generators are in the thousands per year."

Hydrogen fuel cells are also cleaner. Generators used for backup usually burn diesel fuel. In fuel cells like ReliOn's, hydrogen is broken down into electrons and positively charged ions, producing electricity. The two particles are later recombined and mixed with oxygen from the air, generating water as the only waste product.

1000 Independence Ave. SW
Washington DC 20585
202-586-5000

History

Leadership

News

Science Education

Work with Us

Careers & Internships

Contact Us

ENERGY.GOV RESOURCES

Budget & Performance

Directives, Delegations & Requirements

FOIA

Inspector General

Privacy Program

Small Business

Staff & Contractor Resources

FEDERAL GOVERNMENT

The White House

USA.gov