

# CLEAResult®

## REI DATA CENTER CASE STUDY



### Project at a glance

# 93%

reduction of cooling energy

# 2.220M kWh

annual energy savings

# 49%

electrical demand reduction

# 14 months

total project time

# 50%

power usage effectiveness  
(PUE) improvement

# <1.5 years

payback for REI

## REI achieves 93% reduction in data center cooling energy use

### Efficiency opportunities, tailored solutions

CLEAResult collaborated with REI to identify long-term efficiency opportunities at its headquarters data center. CLEAResult's engineering team first examined energy usage and then designed a cutting-edge upgrade plan specific to REI's facility that was implemented in two phases. Overseeing every aspect of the efficiency upgrade process, CLEAResult managed installations, trained REI's IT staff and carefully commissioned the new data center equipment. These efficiency enhancements helped REI reduce annual energy use by 2,220,000 kWh.

### Technology improvements

- A custom water-side economization system leverages the Pacific Northwest's cold climate to provide free cooling for 99 percent of the year.
- Variable flow pumps replaced constant flow condenser water pumps. Variable flow pumps conserve more energy by enabling low-speed operation when appropriate.
- An in-row cooling unit provides cooling directly to the hottest rack area, allowing the overall temperature setpoint to be raised.
- High-flow air tiles, blanking panels and hot/cold server aisle containment measures lower overall energy consumption through improved airflow.
- Consolidation of equipment from 4 UPS to 2 UPS improves efficiencies from 88 percent to 99 percent.
- Eliminated all PDUs and 750 of the 800 circuits in the data center.
- Removal of congestion in raised floor improves air flow.
- Reuse and sale of existing equipment minimizes impact on the environment.

### Significant results

Achievements included:

- The elimination of the annual greenhouse emissions equivalent of 326 standard passenger cars, and reduction of electricity to power six REI stores.
- Industry recognition as Project of the Year for 2013 by the Association of Energy Engineers.



**It's thrilling to see the results and leadership demonstrated by REI using Puget Sound Energy's Data Center program. With partners like CLEAResult, we believe that business across the country can realize the same fantastic financial and energy saving benefits.**

**David Landers**  
Puget Sound Energy  
Manager, Business Energy Management



### Talk to us

Learn how CLEAResult can help you change the way you use energy.  
Contact us at **512.327.9200**, [info@clearesult.com](mailto:info@clearesult.com) or visit [clearesult.com](http://clearesult.com).