



RESEARCH TRIANGLE  
CLEANTECH CLUSTER™

» Transformation Through Collaboration



# MEMBER

## STORIES OF INNOVATION

SOFTWARE  
& ANALYTICS



## CHALLENGE

### ELIMINATING UNPLANNED DOWNTIME

Nearly 100 days a year, the Arizona Valley desert reaches highs of 100 degrees Fahrenheit or more. While the region bakes, power companies ramp up to meet the demand of the harsh environment – and of one of the fastest-growing populations in the US.

Fortunately, the Salt River Project (SRP) power district, one of the nation's largest public power utilities serving approximately 1 million retail customers in the Phoenix area, knows the answer to keeping everyone cool on even the hottest days. It analyzes data from production equipment sensors, customer usage – and even about the weather itself – to anticipate demand and optimize the production of its generating resources.



SRP owns and operates multiple generating sources, and keeping track of them and scheduling generator maintenance is a highly complex process. Manufacturers have exacting specifications for when the turbines that generate power require maintenance. Maintenance schedules are based on the amount of time the resource has been producing power. Typically, a generating resource must be scheduled for maintenance on or before a manufacturer's required maintenance schedule to ensure the unit operates properly.

"If we don't perform scheduled maintenance as required, we'd be out of compliance with the manufacturer's warranty and would risk having an unplanned outage on a critical resource," says Steve Petruso, Senior Software Developer at SRP's Supply and Trading Group.

## SOLUTION

### ENERGY ANALYTICS



SRP uses SAS Analytics to prevent unplanned downtime by accurately determining when combustion turbines are running in order to schedule required maintenance. SRP also employs SAS to predict power supply and demand, allowing its Supply and Trading Group to use a variety of data, including weather, supply, demand and outage, to accurately purchase energy to meet customer demand – or sell excess power to keep costs in line. Understanding future needs requires SRP to consider many factors. It uses current and historical data about customers' energy use and generation information from their power

sources. Although SRP generates much of its own power, it also uses energy purchased from renewable resources, such as solar and hydrothermal.

# IMPACT

## ACCURATE TRADING BALANCES SUPPLY AND DEMAND

For more than 15 years, the Supply and Trading Group has used SAS Analytics to predict available power supply and customer demand. These predictions can go out as far as five years. Predictive analytics allows traders to track a resource and when they have excess electricity – or need to make up a shortfall – so they can make better decisions about how much power they need to buy or how much excess they have to sell.

Having accurate data about when generators need maintenance also allows SRP to better schedule downtime across multiple facilities to maintain a steady supply overall. “By analyzing all this data, we gain an accurate picture of our actual generation so we have a fine-tuned understanding of maintenance requirements,” Petruso says. “Without a solution like this, we’d be guessing or estimating generation, and the results wouldn’t be as accurate.”

## WHO WE ARE

### ABOUT RTCC

The Research Triangle Cleantech Cluster (RTCC) is an initiative of business, government, academic and nonprofit leaders focused on accelerating the growth of the Research Triangle Region’s cleantech economy.

We promote collaboration and partnership which drives innovation and sector growth and creates competitive advantage for both companies and the region by concentrating resources on a single vision and plan to advance company growth and attract cleantech investment.

RTCC works to ensure the region is recognized for its leadership in research, innovation and growth in the clean technology sector by leading a global marketing program, promoting cleantech business growth, and by engaging and convening cluster companies and partners.

### ABOUT SAS

SAS is the leader in analytics. Through innovative analytics, business intelligence and data management software and services, SAS helps customers at more than 83,000 sites make better decisions faster. Since 1976, SAS has been giving customers around the world THE POWER TO KNOW®.

For more case studies, visit [www.sas.com/utilities](http://www.sas.com/utilities)



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