



HOW THE SOUTHWEST WAS REALLY WON

Salt River Project tames wholesale energy market with help from SAS®

Industry

Utilities

Business Issue

Knowing when to sell electricity to get the best price.

Solution

SAS® forecasting, data warehousing and reporting capabilities.

Benefits

Millions in revenues used to offset retail prices.

Arizona is a land of extremes: In the northern part of the state, temperatures dip to nearly zero degrees Fahrenheit amid snowfall in winter while the southern desert bakes in 110-degree heat in the summer. Yet the Grand Canyon State remains one of the most desirable places to live in the United States.

That's thanks, in part, to the work going on at Salt River Project (SRP), which celebrated 100 years of service in 2003. SRP, based in Phoenix, was established in 1903 as the nation's first multipurpose reclamation project authorized under the National Reclamation Act. Today, SRP is the nation's third-largest public power utility and one of Arizona's largest water suppliers, providing power to about 800,000 retail customers throughout a 2,900-square-mile service territory in central Arizona.

SRP operates or participates in seven major power plants and other generating facilities throughout the Southwest.

Lowering customer costs

SRP's primary responsibility is to deliver low-cost water and electricity to its customers. Having domesticated the desert, SRP now brings the sometimes wilder extremes of the wholesale electricity market under control with help from SAS. Electricity costs are ultimately determined in a real-time market where suppliers and generators buy and sell power based on current load availability and consumer demand. With SAS, SRP accurately forecasts for up to 24 months how much excess power it will have available for wholesale sales.

"To be successful in the wholesale electric industry, you must have very good models. Models help project where you have excess electricity, and subsequently, you can make better decisions on when and how much you can sell," explains Mike Krause, Manager of Operations Support in SRP's Supply and Trading Group.

For example, traders need to know how an outage at a power plant will affect value on certain deals or whether excess power will even be available to sell. Or what will happen to net revenues if retail load takes an unexpected dip. "We can flip a switch in our model and minutes later have that output in our hands," says Harry Sauthoff, Principal Financial Analyst.

Harnessing the data

To create the model, the supply and trading team first had to harness all the operational data for all 24 hours, seven days a week. Again, it turned to SAS – this time to build a data mart to unify under one roof all the data relating to customer demand, supply, generation, trades and sales scattered in pockets and pools throughout the company.



"The data mart evolved out of the need to access and assemble the data to project how much excess electricity we have," Krause says. "We knew

“We’re talking tens of millions of dollars in what this group does, so the impact of SAS has to be in the millions.”

Harry Sauthoff

Principal Financial Analyst
SRP

SAS would allow us to grab the data from all the various sources, and there were a lot of sources of information we needed to feed the model set. We picked SAS because we had staff with SAS skills and knew it could get the job done – and get it done quickly.”

Controlling their own destiny

SRP’s supply and trading team updates the data mart nightly, and it is no longer at the mercy of other departments for access to data. SAS gives the team quick, easy access to 10 years’ worth of information via Web browser. “Before we had SAS, we had to use programmers from our IS group to give us downloads of the data we needed,” says Steve Petruso, Senior Computer Analyst. “Now we can access the data ourselves, when we need it, with our own expertise.”

To help design the data mart, refine the model and forecast techniques, and build a Web-reporting interface, SRP turned to a local member of the SAS Alliance with expertise in forecasting and SAS development. “The old SRP model took a long time to update,” says David Kuhn, owner of Innovative Idea Design,

an alliance member based in Phoenix. “Now we can update it daily with new forecast assumptions in just minutes – and the results are immediately available over the Web.”

With such greatly improved reporting capability, the traders gain more insight into what they have available to sell – meaning they rarely have to debate their positions. “That allows SRP to develop successful trading strategies, and other groups can use the information for activities such as preparing budgets.”

Confidence in the numbers

The SAS data mart and Web-based reporting give traders more confidence in the numbers because they always have access to the latest information. “That was a big problem with our old models,” Sauthoff says. “Every time we needed to make a decision, there was a lot of debate over whether the model was accurate. Now that we’re using SAS, that debate is over.”

Also gone are the spreadsheets and manual entry required for modeling under the old paper-driven reporting system. And in addition

to greatly improving its forecasting accuracy, SRP has discovered new ways of capitalizing on SAS’ Web-based reporting capabilities.

“Upon completion of the model and data mart, SRP traders now have confidence that they are capturing more opportunities than ever before,” Sauthoff says. “We are constantly benchmarking our model with graphical and numeric analysis. This data is available daily and is used to refine our assumptions that drive our model. Moreover, anyone can access the forecast performance reports via the Web.”

The trading group generates millions of dollars per year for SRP, and the supply and trading team gains valuable insights using SAS, allowing it to better manage load and how it sells excess energy. “We’re talking tens of millions of dollars in what this group does, so the impact of SAS has to be in the millions,” Sauthoff says. “And gains that we make are used to offset retail prices. So the revenues we generate go to help our customers.”



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