

Integrating a Real-Time Optimization System to Address Rising Energy Costs & Control Room Staffing Challenges



AQUADVANCED® Water Supply Case Study

Adopting the AQUADVANCED® solution has led to significant benefits for the City of El Paso, including a 10% annual reduction in electric bills and a 6% improvement in pump efficiency. The technology has also enhanced understanding of the water system, streamlined operations, and improved asset performance.

Client Issue

El Paso has long been committed to providing its citizens with safe and reliable drinking water. However, the pursuit of this essential service comes at a considerable cost, with the city facing annual energy bills in excess of \$7 million. Operating within a time-of-use tariff system, the city faces the intricate task of harmonizing electric rates with the demands of a complex water operation. To address their financial challenges and bolster operational efficiency, El Paso sought technology to help identify sustainable operations across their water supply network and provide a solution to address the Operations control room staffing challenges.

The Solution

In 2012 El Paso chose AQUADVANCED® Energy, now called AQUADVANCED® Water Supply, adding Energy Monitoring capabilities in 2018. In 2023 El Paso added 300 wastewater treatment assets to the existing monitoring system.

The AQUADVANCED® Water Supply solution involves a comprehensive analysis of various elements to optimize a water utility network's performance. It evaluates the entire network. During this process, the software takes a number of factors into account, including reducing energy cost, ensuring water quality, assessing asset availability, and maintaining network operating constraints.

The Results

Over the past decade, the City of El Paso has experienced significant and tangible benefits through the adoption of the AQUADVANCED® solution. This transformative technology has not only resulted in remarkable financial savings, averaging 10% annually on electric bills, but has also propelled a remarkable 6% improvement in pump efficiency.

Beyond these quantifiable gains, the city has acquired invaluable insights into the dynamic behavior of its water system across diverse demand scenarios. With its easy geographic visualization of complex data, the solution has played a pivotal role in training new personnel, fostering a comprehensive understanding of system assets, including pumps, flow meters, pipes, valves, and tanks. This enhanced accountability has streamlined operations, ensuring optimal performance and longevity of essential assets.



The solution has proven to be a flexible, adaptable, and consistent approach to operating the water network, providing the city with a resilient framework that responds effectively to evolving challenges, consistent growing demands, water supply challenges and staffing concerns.

The adoption of smart water technology by the City of El Paso represents a transformative step towards a more sustainable and efficient water management paradigm.

AQUADVANCED® Water Supply offers the city a way to drive organizational value through digital transformation. By providing operators with a comprehensive tool, they ensured that the human aspect remains central to water management, fostering a collaborative ecosystem that spans from operators' daily interactions to enhanced accessibility for customers.

10%
saving in annual
electric bills



Empowering El Paso: Integrating a Real-Time Optimization System to Address Rising Energy Costs & Control Room Staffing Challenges

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Implementation

The key project steps:

- Created data links to SCADA and AQUADVANCED® Water Supply
- Utilized current energy data to develop energy cost based on "Time of Day"
- Combined the sources of data and pump information to create KPIs
- Embedded hydraulic model & pump information to create KPIs
- Recorded energy use and efficiency to indicate optimized pump operation.
- Configured automated alerts to notify operators when assets operate outside of their prescribed boundaries to ensure timely interventions and optimized performance.

Differentiating Factors

In contrast to other solutions available on the market, AQUADVANCED® Water Supply stands out with its real-time control and full automation. It offers instant insights for optimized water management and streamlines routine tasks, allowing the controls team to focus on other priorities.

In addition, AQUADVANCED® Water Supply updates its plans within 30 minutes, generating schedules for the next 48 hours, compared to one schedule / 24 hours offered by others. This means the operations team always has the latest information to make informed decisions. This holistic approach to water management delivers impressive energy savings and

ensures consistent, efficient operations even when faced with unexpected changes in demand.

- 48-hour forecast of water demand enabling re-evaluation, adaptation and optimization of system efficiency, demand, cost, new efficiency curves, asset availability and network conditions every 30 minutes
- Proven! Over 43 clients worldwide with many and varied systems
- Up to 15% energy cost savings
- Average 6-9% pump efficiency gains thus increasing the life of the pump
- Ease of integration with multiple SCADA vendor solutions
- Consistent operation and calm control

Three Key Elements

AQUADVANCED® Water Supply solution:

- Real-time electricity tariff analysis, water demand prediction and measurement of the network
- Distribution network planning and storage optimization
- Energy cost reduction while maximizing operational performance.

About El Paso Water

El Paso Water manages the water and sewage systems for the 750,000 residents of the City of El Paso, Texas. This includes four drinking water treatment plants, 150 well sites including one desalination plant, 215 pumps at 47 stations plus 98 well pumps, 600 MLD

production capacity with 69 storage tanks, three wastewater treatment plants, and one reclamation plant.

Supplying safe and reliable drinking water in the desert climate of El Paso requires balancing ground water from well sites with seasonal surface water supply from the nearby Rio Grande River.

About SUEZ

Faced with growing environmental challenges, for more than 160 years, SUEZ has been acting to deliver essential services that protect and improve the quality of life. SUEZ enables its customers to provide access to water and waste services with resilient and innovative solutions.

With its 40,000 employees present in 40 countries, the Group also enables its customers to create value over the entire lifecycle of their assets and services and to drive their ecological transition together with their end-users.

In 2023, SUEZ produced drinking water for 57 million people worldwide and sanitation services for more than 36 million people. The Group generated 7.7 TWh of energy from waste and wastewater.

SUEZ Digital Solutions

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