

make the most of your existing infrastructure

REDUCED OPERATING COSTS

- ▶ **Manage all elements of energy costs** in the water distribution network with reductions typically in the range of 10% to 20%
- ▶ **Lower life-cycle costs** by making the best use of assets to ensure durability, reduced maintenance and delay renewal costs

OPTIMIZED MANAGEMENT OF DRINKING WATER PRODUCTION

- ▶ **Supporting uninterrupted supply night and day**, even in emergency situations
- ▶ **Helping system operators and engineers** with complex decision making

LOWER ENVIRONMENTAL FOOTPRINT

- ▶ **Reduced carbon emissions** by optimizing system-wide efficiency and using less energy per unit of water delivered
- ▶ **Complying with both national and local environmental regulations** to preserve water resources, assist with water quality and limit over-production

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AQUADVANCED® Energy

Real-time Energy Management
& Operations Optimization Software
for Water Distribution Networks

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ensure high quality
water is delivered
where it is needed
at minimum cost

SUEZ presents AQUADVANCED® Energy, a proven real-time optimization system for water distribution networks, bringing down energy costs while maximizing operational performance, water quality and energy efficiency leading to an improved environmental footprint.

A software solution
geared to meet your
needs:

- ▶ **Reduce** total operating costs
- ▶ **Ensure** consistent operation and security of supply
- ▶ **Operate** networks more efficiently
- ▶ **Improve** water quality
- ▶ **Enhance** decision support

AQUADVANCED® Energy

**BUILT BY OPERATORS
FOR OPERATORS**

- ▶ **Choosing the right times:** schedules pumping to take advantage of lower electricity time-of-day and demand tariffs
- ▶ **Optimizing pump efficiency:** operates pumps and pump combinations at more efficient points to use less energy (with a reduced carbon footprint)
- ▶ **Improving water quality:** increases water turnover, decreases water aging, enforces water quality policies
- ▶ **Ensuring operational efficiency and water delivery:** maintains consistency and reliability of operation through an automated system controlling water distribution 24/7
- ▶ **Improving decision making:** simulates and compares multiple scenarios with differing operational and economic constraints.

AQUADVANCED® Energy

is one of a suite of advanced solution tools from SUEZ and uses the available network data to calculate & implement optimized operating schedules for **water production and distribution**. The AQUADVANCED® Energy software:

- ▶ **Derives optimization schedules** from actual operational data, current set-points/constraints and available equipment (updated every 10 minutes) together with water demand forecasts (updated every 30 minutes) and powerful mathematical calculation techniques.
- ▶ **Submits updated schedules** to the existing supervisory (SCADA) system every 30 minutes (or when specifically requested by an operator) only after the schedules have been verified as robust by an internal hydraulic model running an extended period simulation.
- ▶ **Initiates individual control actions** either in a closed loop automatic mode, advisory manual mode or a mix of both.

This flexible software solution is equally applicable to:

- ▶ Optimizing complete water networks from raw water sources to end pressure zones, or;
- ▶ Optimizing Individual parts of the cycle including wholesale providers, bulk water transmission, municipal distribution and even recycled water networks.

unique features,
of the software

- ▶ **Global map-integrated view of the water production and distribution system** with hydraulic data in near real-time, key performance indicators and alerts
- ▶ **Water demand forecasts updated every 30 minutes**
- ▶ **Management of energy cost constraints** to maximize the use of off-peak electricity periods, handle electricity demand charges, time-of-use charges and real-time electric tariff rates
- ▶ **Live updating of energy tariffs** through connection to local energy market trading system
- ▶ **Real-time optimization of pumping schedules** responding immediately to planned and unplanned changes, from maintenance to water demand
- ▶ **Holistic solution** that looks at the entire distribution network with all its constraints to find overall lowest cost including raw water, treatment and distribution
- ▶ **Daily support to operations** by scheduling around planned maintenance of plants and pumps
- ▶ **Water quality management** through enforcement of tank cycling, volume turnover and blending strategies
- ▶ **Future proofing the operations team** by assisting with effective & efficient operation, providing off-line training and capturing best-in-class operational knowledge
- ▶ **Fully automatic operations** with optimized set-points, pump controls and production plans sent directly to the SCADA control system
- ▶ **Simulation module** to assess the benefits of alternative operating strategies, impact of planned maintenance or planned network changes

