advanced solutions for water networks

A 360° Approach To Optimize Network Efficiency

ready for the resource revolution
non-revenue water, a global/local challenge

Today non-revenue water represents:

- 35% of the world's drinking water
- 49 billion m³/year of water
- 14 billion $US/Billion in annual economic losses

Non-Revenue Water refers to water supplied to the system but not billed to customers. It has become a global issue that can only be resolved locally. To reduce loss and optimize drinking water distribution, the full value cycle must be taken into consideration: from diagnosis to the efficient management of leaks, assets and billing.

That's why SUEZ has developed its ADVANCED SOLUTIONS FOR WATER NETWORKS.

Building upon its long term partnerships with local authorities around the world, SUEZ plans and implements adapted solutions to optimize the performance of your drinking water distribution network.

- Guarantee continuous water supply and high reactivity in case of leaks
- Provide your clients with accurate billing and responsive customer service
- Ensure water quality and safety by efficiently monitoring your network
- Reduce your operational expenditures and increase water service revenues
- Extend the life of your network with optimized operations and proactive maintenance
- Avoid the construction of additional water production facilities
- Optimize your investments by prioritizing your asset renewal
- Conserve natural resources
- Reduce wasted water
- Save energy and lower your carbon footprint

IMPROVE SERVICE QUALITY & CUSTOMER SATISFACTION

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REDUCE EXPENDITURES & INCREASE REVENUES

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CONSERVE NATURAL RESOURCES

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A 360° approach to optimize network efficiency

ADVANCED SOLUTIONS FOR WATER NETWORKS: An integrated solution to optimize your water network performance from a world-class operator

Based on our operational experience, SUEZ has developed a suite of 5 flexible and complementary solutions. Our service offer can be customized to meet your objectives.

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KNO-W-HOW TRANSFER
Operational expertise available to local staff

A 360° APPROACH TO OPTIMIZE NETWORK EFFICIENCY
Our AQUADVANCED™ control tool handles all key dimensions of water network management. It continuously monitors and improves network performance in real time, through:

- General view of network performance with a user-friendly dashboard
- Event management to rapidly detect anomalies and identify risks of failure
- Reporting and in-depth analysis of water network performance

our operational expertise means you benefit from:

- An integrated approach coupled with 130 years of experience in water management and ‘day-to-day’ operation
- A wide range of tools and their tailored implementation taking into account your local conditions
- Cutting-edge technologies
- Our proven ability to transfer knowledge to your team
- Our experience in coordinating the utility’s different units (management, technical and financial)
**DIAGNOSIS & STRATEGY**

**Define a customized action plan through in-depth analysis**

SUEZ’s proven methodology helps reduce Non-Revenue Water through support in the assessment, planning, coordination and implementation of your action plan.

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**DIAGNOSIS & STRATEGY**

**Operational Assessment of Losses & Adapted Action Plan**

- Quantify physical, commercial, and metering losses and identify causes, using operational data and field investigation.
- Forecast water volumes that can be recovered.
- Define an action plan, integrating forecasts and realistic objectives, to achieve a high return on investment and optimize both CAPEX and OPEX.

**Project Management**

- Benefit from our technical and managerial expertise to ensure the effective and coordinated implementation of the action plan.
- Pilot performance with regularly collected and analyzed data.
- Steer governance across the action plan.

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**AQUACIRCLE™ Decision Support Software**

Models your actual water losses, forecasts Non-Revenue Water reduction, establishes and follows-up the action plan.

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**Benefits**

- Prioritize actions to be taken
- Increase profitability
- Pilot water service performance
- Preserve water resources

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**References**

Spain, France, Australia, Algeria, Mexico, Morocco, China

Implemented on over 150,000 km of network.

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**MACAU - CHINA**

Improvement of metering and account management:
- Return on investment in 2-3 years

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**Advanced Solutions for Water Networks**

Models your actual water losses, forecasts Non-Revenue Water reduction, establishes and follows-up the action plan.
NETWORK MANAGEMENT

make your network ‘smart’ for real-time operations

SUEZ’s solution optimizes the day-to-day management of your water network by monitoring flow, pressure and water quality in real time.

PERFORMANCE ANALYSIS & NETWORK RESTRUCTURING

- Understand flows in your water network through GIS analysis and hydraulic modeling
- Design and implement the ideal sectorization to better control your network

SMART NETWORK EQUIPMENT

- Install advanced flow, pressure, acoustic and water quality sensors for high quality data transmission
- Implement and operate pressure management efficiently, to match actual needs with specific pressure regulation valves linked to Information Regulation System
- Turn your existing system into a ‘smart’ network, powered by AQUADVANCED™

REAL-TIME NETWORK MONITORING & MANAGEMENT

- Get an overall view of your network in real time including possible anomalies and means of optimization (leakage location, energy)
- Take immediate action from a distance thanks to flow and pressure regulators connected to the IT system

AQUADVANCED™ REAL-TIME DATA MANAGEMENT

- Monitors and manages sectors equipped with sensors
- Collects and centralizes data
- Manages and optimizes water network performance in real time
- Integrates Customer Relationship Management and workforce management systems

BENEFITS

- Save water and energy
- Extend the life of your network
- Guarantee water quality
- Detect and repair leaks quickly

REFERENCES

CASABLANCA – MOROCCO

51% of water savings through dynamic pressure regulation

- Real-time monitoring through the installation of 80 pressure sensors and 200 flow sensors
- Better network performance: from 71.5% (2009) to 75.5% (2011)
LEAK MANAGEMENT

improve detection and make repair sustainable

SUEZ’s solution leverages innovative technologies to efficiently detect and repair leaks in your water network.

EFFECTIVE & APPROPRIATE LEAK DETECTION SYSTEMS
- Implement optimal leak detection tools and location techniques based on your specific local needs
- Benefit from our latest technologies such as tracer gases and acoustic systems to limit nuisance to surrounding area and population

EFFICIENT & APPROPRIATE LEAK DETECTION SYSTEMS

DETECTION TECHNIQUE

- Detects leaks with a tracer gas (helium or hydrogen), that has no impact on either water quality or health. This gas is injected into the water pipe and comes out of it in case of leak. Very small holes are then drilled above the pipe, so that gas can escape through impermeable ground layers. Thus, unusual concentrations of tracer gas can be detected from the surface.

REFERENCES

JEDDAH – SAUDI ARABIA

2,500 LEAKS/YEAR

- 16,000 visible leaks/year: each repaired in less than 24 hours and recorded on the GIS
- Water and money savings: 16.3 Mm³ saved in 2011 (more than €12M)
- Higher customer satisfaction and improved perception of the Public Water Service

BENEFITS

- Save water resources by reducing leaks
- Improve customer satisfaction
- Facilitate repairs and reduce nuisance
- Guarantee lasting repairs

AQUADVANCED™ COMPATIBLE

EFFICIENT & APPROPRIATE LEAK DETECTION SYSTEMS

DETECTION TECHNIQUE

- iDROLOCK™

SENSING TECHNOLOGY

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ASSET MANAGEMENT

understand network condition for optimized investment

SUEZ’s solution prioritizes water network renewal and rehabilitation to optimize medium and long-term investment.

NETWORK CONDITION ASSESSMENT & REHABILITATION PLAN

Evaluate your network condition using available data and innovative proprietary technologies (Scanner, Ciclope™)

Establish a detailed and prioritized investment plan to better manage your investments.

OPTIMAL WORKS MANAGEMENT

Select the most adapted materials and techniques with which to renew your network while minimizing the impact on the surrounding environment.

Select and train field teams to guarantee high work quality.

Reduce nuisance with our innovative renewal and rehabilitation technologies, such as trenchless works or ice pigging.

PREVOIR™ DECISION SUPPORT TOOL FOR ASSETS RENEWAL

Helps you to optimize your investments using predictive models of pipe ageing. Based on these predictions and depending on your investment capacity, it indicates where and when to replace pipes over the next 5 to 20 years, thus extending network life.

BENEFITS

- Optimize your investment
- Anticipate the network renewal
- Extend your facilities service life
- Reduce nuisance due to network repairs

REFERENCES

Helps you to optimize your investments using predictive models of pipe ageing. Based on these predictions and depending on your investment capacity, it indicates where and when to replace pipes over the next 5 to 20 years, thus extending network life.

Bordeaux - France

-40% IN BURSTS (-2,000 breakages in 2012 vs. 4,300 in 2005)

Improved network quality and significant reduction in emergency works

AQUADVANCED® COMPATIBLE
CUSTOMER MANAGEMENT

increase revenues and customer satisfaction

SUEZ’s solution accurately measures and bills water consumption to increase your revenues and customer satisfaction.

WATER METERING IMPROVEMENT

- Gather and upgrade client information through customer census to guarantee fair billing and prevent fraud.
- Select the right meters and appropriate installation techniques to prevent fraud.
- Identify meters requiring replacement and prioritize their renewal.
- Implement our remote and real-time automated water consumption metering technology for higher reliability (Smart Meter Reading).

EFFICIENT CUSTOMER SERVICE MANAGEMENT

- Optimize your customer services management through our tools and expertise.
- Improve customer satisfaction with our fair and modern Smart Metering services such as alerts in case of suspected leaks and regular billing based on real consumption.

AQUACIS™ CUSTOMER RELATIONSHIP MANAGEMENT SOFTWARE

- Centralizes all client data and customer claims so as to manage them efficiently. The software is linked to a field work management tool to optimize operations coordination.

BENEFITS

- Grow revenues
- Increase customer satisfaction
- Reduce Non-Revenue Water volumes
- Raise the level of your meters’ reliability

REFERENCES

CARTAGENA – COLOMBIA

- From 2 payment centers in 1995 to 96 in 2011
- Higher meter coverage: from 58.6% of the population in 1995 to 99.67% in 2011
- Increase in the number of legal users: from 25% of low-income neighborhoods in 1995 to 80% in 2011
advanced solutions for water networks

Operational assessment of losses & adapted action plan
Project Management

Network condition assessment & rehabilitation plan
Optimal works management

Performance analysis & network restructuring
Smart network equipment
Real-time network monitoring & management

Efficient & appropriate leak detection systems
Effective & long-lasting leak repairs

Network condition assessment & rehabilitation plan
Optimal works management

Water metering improvement
Efficient Customer Service Management

tracking map

01 ASSESSMENT, PLANNING AND COORDINATION OF NON-REVENUE WATER RECOVERY
- Operational assessment of losses & adapted action plan
- Project Management

02 FLOW, PRESSURE AND WATER QUALITY DAY-TO-DAY MANAGEMENT
- Performance analysis & network restructuring
- Smart network equipment
- Real-time network monitoring & management

03 EFFECTIVE LEAK DETECTION AND REPAIR ON WATER NETWORK
- Efficient & appropriate leak detection systems
- Effective & long-lasting leak repairs

04 SUSTAINABLE MANAGEMENT OF WATER NETWORK ASSETS
- Network condition assessment & rehabilitation plan
- Optimal works management

05 PRECISE MEASUREMENT AND BILLING OF WATER CONSUMPTION
- Water metering improvement
- Efficient Customer Service Management
SUEZ makes its operational expertise and know-how available to local staff.

For years, SUEZ’s worldwide research and technical centers have been pooling their water cycle expertise. Supported by the Group’s expert networks and our track record of successful implementations, SUEZ has developed an innovative and comprehensive approach for transferring know-how to local operations.

SUEZ helps you to achieve high degree of institutional competency and full autonomy.

In accordance with your specific needs, we address the elementary core business processes and help water operations improve their efficiency. We assist you in defining, implementing and monitoring tailor-made action plans for the effective transfer of knowledge to your local staff.

**Benefits**

- Achieve a high degree of institutional competency and full autonomy
- Transfer pertinent know-how and expertise to local staff
- Improve operational efficiency

**References**

- 400 researchers and experts across the world
- 6 research centers and over 65 research programs
- More than 120 research partners

**Key Figures**

- Achieve a high degree of institutional competency and full autonomy
- Transfer pertinent know-how and expertise to local staff
- Improve operational efficiency

**A GLOBAL LEADER IN WATER AND WASTE MANAGEMENT SERVICES**

**Operating in more than 70 countries on 5 continents**

**Municipal and industrial clients**

**People benefit from our drinking water supply services**

**People benefit from our sanitation services**

**References**

- Greater Paris Area (France), Bordeaux (France), Dijon (France), Barcelona (Spain), Bristol (UK), Casablanca (Morocco), Algiers (Algeria), Oran (Algeria), Jeddah (Saudi Arabia), Santiago (Chile), Macau (China), Chongqing (China), New Delhi (India), Mumbai (India), Adelaide (Australia), Perth (Australia), Cartagena (Colombia)

**They trust us**

- Operator
- Customized & innovative solutions developer
- Solution integrator