



Safe, smart and efficient solutions for water

Prepare your operations for a digital future





Water a life source

An essential catalyst for a sustainable future with a growing demand

We need more water than ever before

Water demand will rise

55%

By 2050¹

Water is becoming more scarce

The world will face a global water deficit of

40%

by 2030²

Challenges are increasing to ensure a clean and sustainable water supply.

References:

1. United Nations, The United Nations World Water Development Report 2020..

2. United Nations, The United Nations World Water Development Report 2021: Valuing Water. UNESCO, Paris.

Making every drop of water count means meeting specific needs across water applications



Desalination

Reduce energy consumption



Water and Wastewater Treatment

Minimize interruption and downtime



Storage and Distribution

Avoid wastage



Irrigation

Real-time control of water distribution



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**Digitalization will power
the future**

Transforming operations through data

Digital technology is enabling customers to unlock the power of data. The result? Actionable insights for optimized operations.



Reducing costs



Increasing reliability

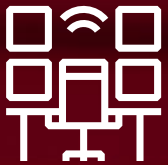


Improving efficiency



Creating a new world of opportunity for water networks

Digitalization will empower billions of better decisions with the ability to...



Monitor and measure performance of assets and systems



Optimize utilization and resource efficiency



Future-proof infrastructure and key business processes

**Because when we know more,
we can do better.**



Driving productivity and quality in the world of water



Benchmarking

Compare water facilities across multi-site networks



Remote monitoring

Ability to detect and manage quality issues



Predictive maintenance

Identify and address problems before they occur



Intelligent instrumentation

Detect shifts in water quality



Digital analysis

Avoid hazards and fines



Taking your operations to the next level

Digitalization can help deliver improved operations and tangible results.



Increase energy efficiency



Save up to 20% on energy bills



Reduce cost of ownership



Save up to 30% on operational costs



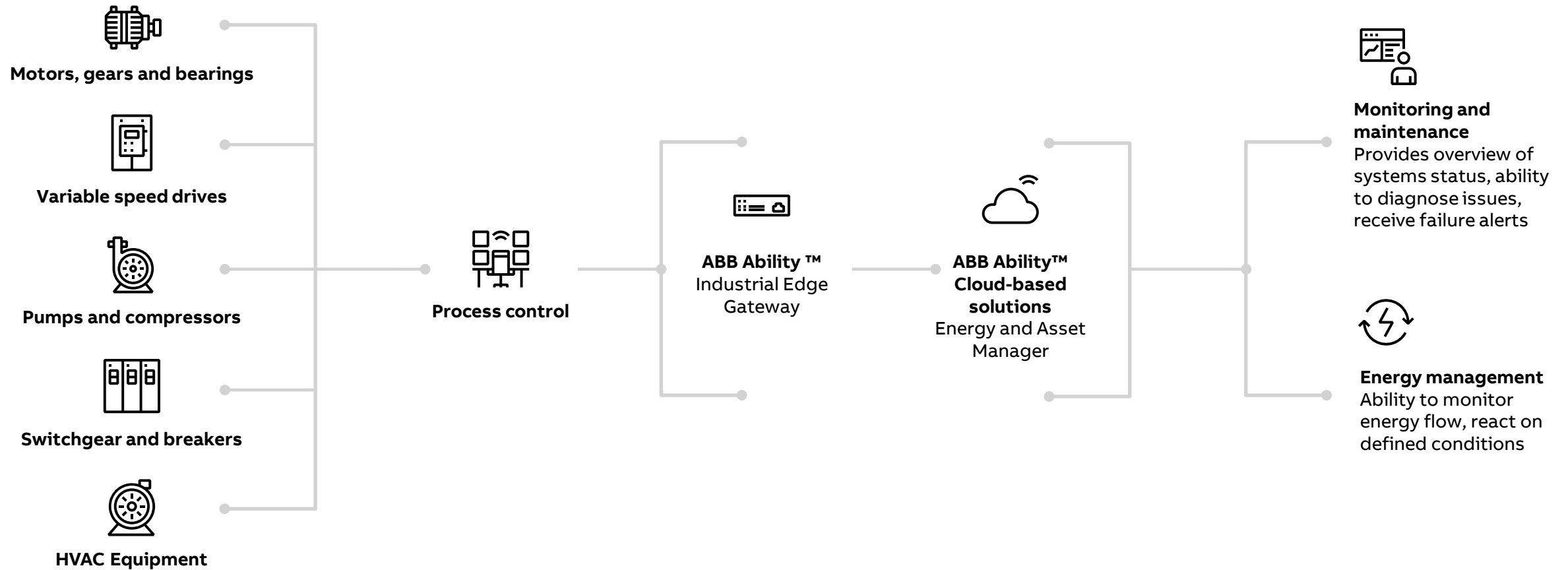
Improve safety



Increased safety, reliability, flexibility and save 100% on unplanned labor

What a digital architecture for water looks like

Connectivity from process control across substation functions, generating end-to-end value





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How ABB can help you

A partner for your complete digital journey

ABB is equipped to guide you with expertise in:



Electrification



Process
automation



Motion



Robotics &
discrete automation

Supporting all your needs



Broad portfolio of products and solutions to meet your needs



Scalable and modular solutions to give you the flexibility to move at your own pace



Consultative team to guide you through the complexities of digitalization



Local services backed by global resources



ABB solutions and domain expertise helps you achieve your business goals



Smart Power
Distribution
solutions



Energy Management
solutions



Motor and drives
solutions



Asset Management
solutions

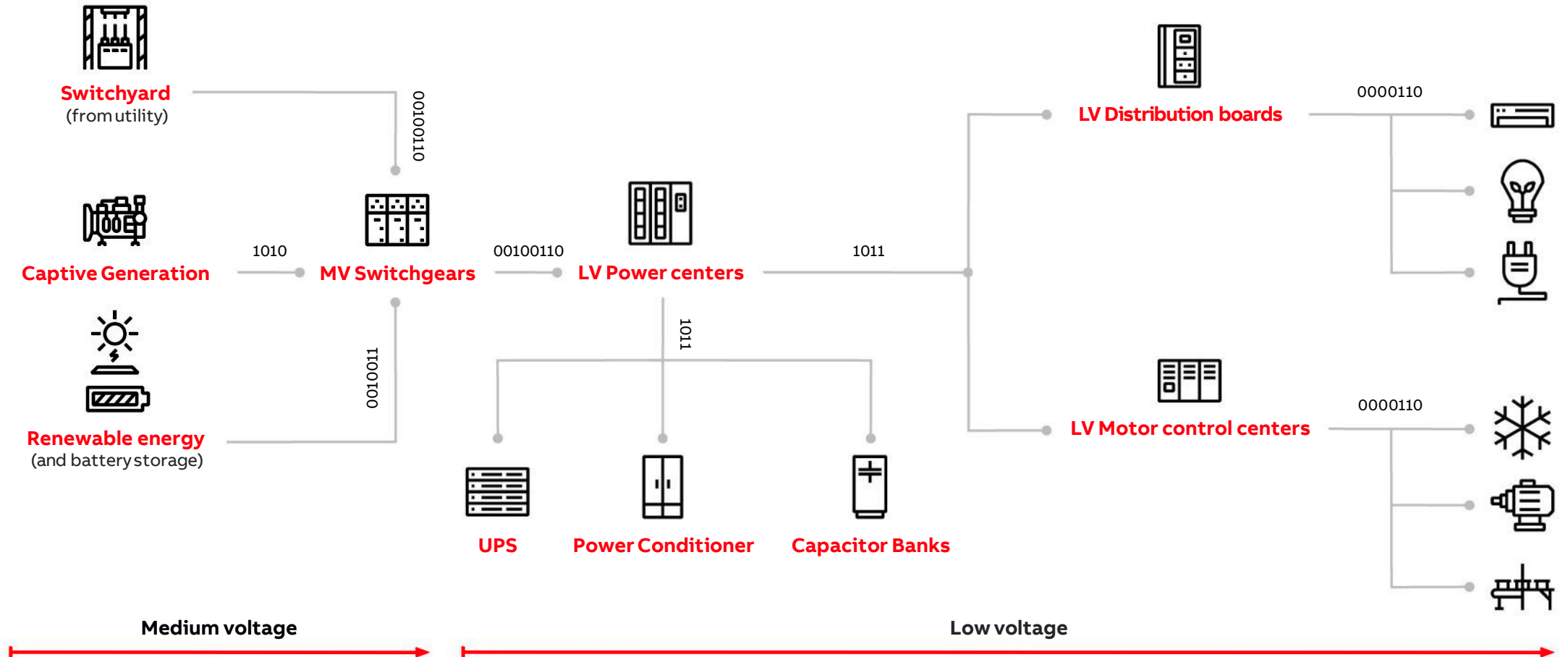


Measurement and
analytics solutions



Solutions at all levels

Digitalized electrification landscape



An aerial photograph of a large-scale industrial water treatment facility, characterized by numerous rectangular basins and complex metal walkways. The entire image is overlaid with a uniform red color. In the center, a group of four workers wearing hard hats and safety gear are standing on a walkway, looking towards the camera. The text is centered on the left side of the image.

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**We help you run safe,
smart and efficient water
operations**

Make power distribution smarter

Delivering Value



Optimize energy efficiency



Meet regulations and comply with energy standards



Improve reliability for maximum uptime



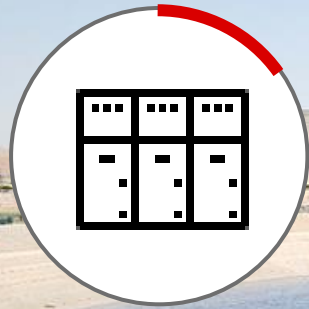
Ensure the safety of people and equipment



Create long-term cost savings

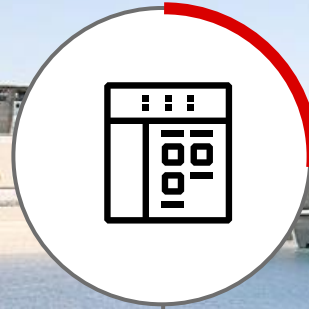


Smart Power Distribution solutions



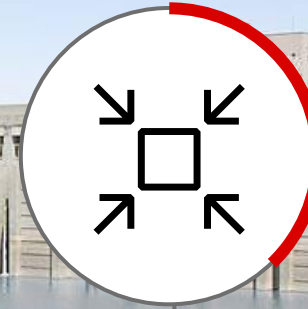
MV Distribution

- Gas Insulated switchgear
- Air insulated switchgear
- Indoor/Outdoor vacuum circuit breakers



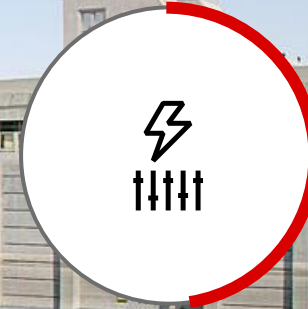
LV Distribution

- Main Distribution
- Motor Control Center
- Sub main distribution
- Final distribution
- Circuit breakers
- Switch Disconnectors
- Contactors & Relays
- Softstarters



Packaged Solutions

- E Houses
- Compact substation
- Skid mounted solutions
- Energy storage solutions



Safety solutions

- Lightning and grounding protection
- Arc guard and protection
- Surge protection devices

Optimize energy usage

Delivering Value



Get real-time visibility of energy consumption



Gain insight to help make more informed decisions about energy usage



Ensure system reliability and minimize downtime



Improve energy efficiency and achieve cost savings

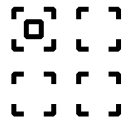


Reduce wastage and meet sustainability goals



Energy Management solutions

Powered by ABB Ability™



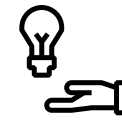
Grid automation and substation management

- Centralized protection and control
- Substation controller and gateways
- Renewable integration
- High speed bus transfer



Solutions to view and analyze energy usage

- Energy & Asset manager
- Edge gateway
- Intelligent relays
- Smart sensors



Solutions to control and optimize energy usage

- Zenon energy management solution
- Relion series relays
- System Automation
- Programmable logic controller

Make motors and drives more efficient

Delivering Value



Ensure uninterrupted water flow



Optimize energy usage from motors and drives and meet sustainability goals



Reduce operational costs



Control flow, pressure and level



Motor and drives solutions



Drives for compressors and blowers

Medium voltage drives
Low voltage drives
Low harmonic drives



Motors for water and wastewater

Generators
IEC low voltage motors
High voltage induction motors
Vertical garmotors

Get the most from your equipment

Delivering Value



Understand how efficiently systems are operating



Achieve high system reliability and maximum uptime



Make maintenance more efficient and reduce costs



Minimize water wastage



Asset Management solutions

Powered by ABB Ability™



Predictive maintenance solutions

- Predictive analytics
- Events & Alarms
- APIs to integrate other systems



Solutions to view, analyse and manage asset health

- Energy & Asset Manager
- Digital twin
- Switchgear Condition Monitoring
- Condition Monitoring for Electrical Systems



Backup management Electrical backup solutions



Safety and protection solutions

- Sealing systems
- Flow and pressure protection

Make measurement and analytics easier

Delivering Value



Get reliable and accurate water measurements



Improve water quality



Detect leakages more quickly



Optimize operations and reduce downtime



Greater energy efficiency and OPEX reduction through digitalization



Legislative compliance

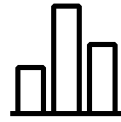


Measurement and analytics solutions



Instrumentation

Flow
Temperature
Pressure
Level



Service

Pro-active maintenance
Asset optimization
Cost reduction



Analytical measurement

Monitor quality
Control chemical usage
Recorders & controllers

Local support services

Backed by global resources



Planning and design:

- System design and calculation support
- Engineering and consultation
- Product information and whitepapers



Construction:

- Installing and commissioning
- On-site testing



Operation:

- Access to ABB services and support
- Maintenance and repairs
- Spares and consumables
- Training



Upgrading:

- Expert consultation
- Extensions, upgrades and retrofits

Simple data security



On premise or in cloud options



Powered by Microsoft Azure



Data manifesto guaranteeing your proprietary data won't be use without your permission



An aerial photograph of a large circular industrial structure, possibly a water treatment tank or a large storage silo, with a complex network of steel trusses and beams. The entire image is overlaid with a semi-transparent red color. The structure is viewed from above, showing the radial and circumferential supports.

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**Real-world
results**

Energy management for Italian water company

CBV water pumping stations ensure supply from reservoirs for farms during dry periods.



Challenge:

- Client wanted to digitalize their operation to increase efficiency



Solution:

ABB delivered:

- ABB Ability™ Electrical Distribution Control System
- We connected power installations to the cloud
- We provided the customer with actionable insight from real-time information and historical data



Outcome:

- 30% reduction in operating costs
- 40% reduction in plant maintenance time expected



ABB drives in water and wastewater

This wet well consisted of two 160KW submersible pumps. The site had two old Variable Speed Drives mounted in an outdoor enclosure, connected back to SCADA system via an onsite RTU system.



Challenge:

- Regular monthly pump blockages



Solution:

ABB ACQ540 drive

- ABB Pump clean function triggered based on a torque percentage at every start and after a defined pumping time



Outcome:

- \$30,000 maintenance cost savings
- Flow rate improvement of 48%
- Halved pump run times due to increased efficiency



Energy management for Asia's largest wastewater treatment plant

Power management solutions bolster efficiency and reliability of wastewater treatment processes.



Challenge:

- Client wanted to improve water discharge quality with a continuous, precise and resilient power supply



Solution:

ABB delivered:

- Medium- and low-voltage electrical distribution solutions
- Data-driven energy management
- Predictive maintenance functions
- Monitoring of power consumption
- Early identification of any safety risks



Outcome:

- Improved water discharge quality and reduced pollutants, supporting processes such as advanced phosphorus removal



Power for the world's largest seawater desalination project

ABB technology powers smart, safe and clean water supply for local communities.



Challenge:

- Client wanted safe, reliable and stable power for the first reverse osmosis independent water project in Abu Dhabi to desalinate seawater



Solution:

ABB delivered:

- 30 panels of medium-voltage switchgear
- 250 panels of low-voltage switchgear with digital capabilities
- Low and medium voltage motors and variable speed drives



Outcome:

- ABB has ensured power supply continuity, boosted system operational efficiency and reduced maintenance costs



Automation and electrification for wastewater treatment

ABB solutions support a new screening and grit removal facility utilizing ultraviolet light to disinfect the treated wastewater.



Challenge:

- Client wanted a control system for a new headworks with a maximum hydraulic capacity of 440 million gallons per day



Solution:

ABB delivered:

- ABB Ability™ automation and control system
- Optimization via an additional system standardizing all plant operations
- Upgrades to all drives, instrumentation and electrical components within the plant



Outcome:

- Operators have complete visibility of plant operations in real time, enabling more accurate decision making





How could we help you today?

Every organization has different digital needs. We have solutions that can help. A chat with one of our friendly experts will tell you everything you need to know

ABB