SUSTAINABILITY

Environmental sustainability helps industrial enterprises address present and future challenges to our planet and society while they attract new talent and investment, improve operational efficiency, and gain more business.

se.com/industrial-automation-solutions

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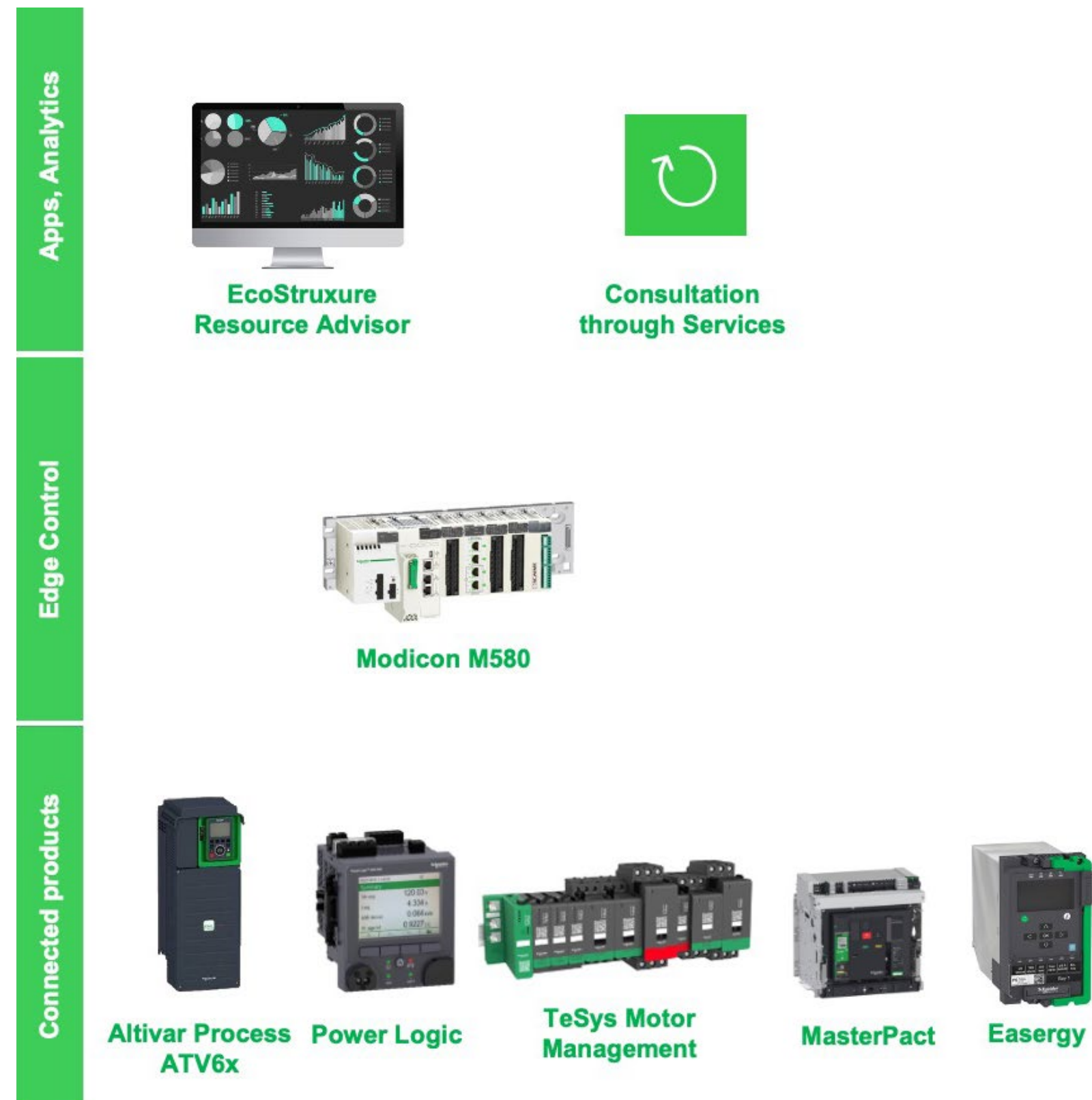
Table of contents

- Do you need to track important performance measures and optimize energy procurement?

- Do you need a solution supported by energy experts who can consult on with you on demand?

- Do you need to generate KPI's to benchmark multiple sites in a cloud-based platform?

Enterprise-level energy supply and efficiency management

Solution architecture

Apps, Analytics

EcoStruxure
Resource Advisor

Consultation
through Services

Edge Control

Modicon M580

Connected products

Altivar Process
ATV6x

Power Logic

TeSys Motor
Management

MasterPact

Easergy

Secure access to energy and environmental data, reports, and summaries to drive energy and sustainability programs via an online sustainability and energy management portal.

Monitor, measure, and manage key energy and sustainability data for your entire enterprise

- Collect, aggregate and analyze data from across the enterprise, then produce KPI´s to benchmark facilities

- More efficient operations and increased collaboration

- Better management of infrastructure and investment

- Monitor energy market opportunities and risk

- Accurate and timely environmental reporting

La Societe Wallonne des Eaux
Energy accounting and sustainability

Customer challenge

Reduce OpEx (energy usage and staffing requirement) to free up CapEx for network infrastructure upgrades (replacement of aging pipes etc.)

The solution

Because Schneider Electric was able to offer a complete architecture that allows a seamless stream of information across all layers, SWDE selected an EcoStruxure for WWW solution, including:

- Energy accounting and sustainabilty
- Integrated industrial software solutions
- Centralized control and data management
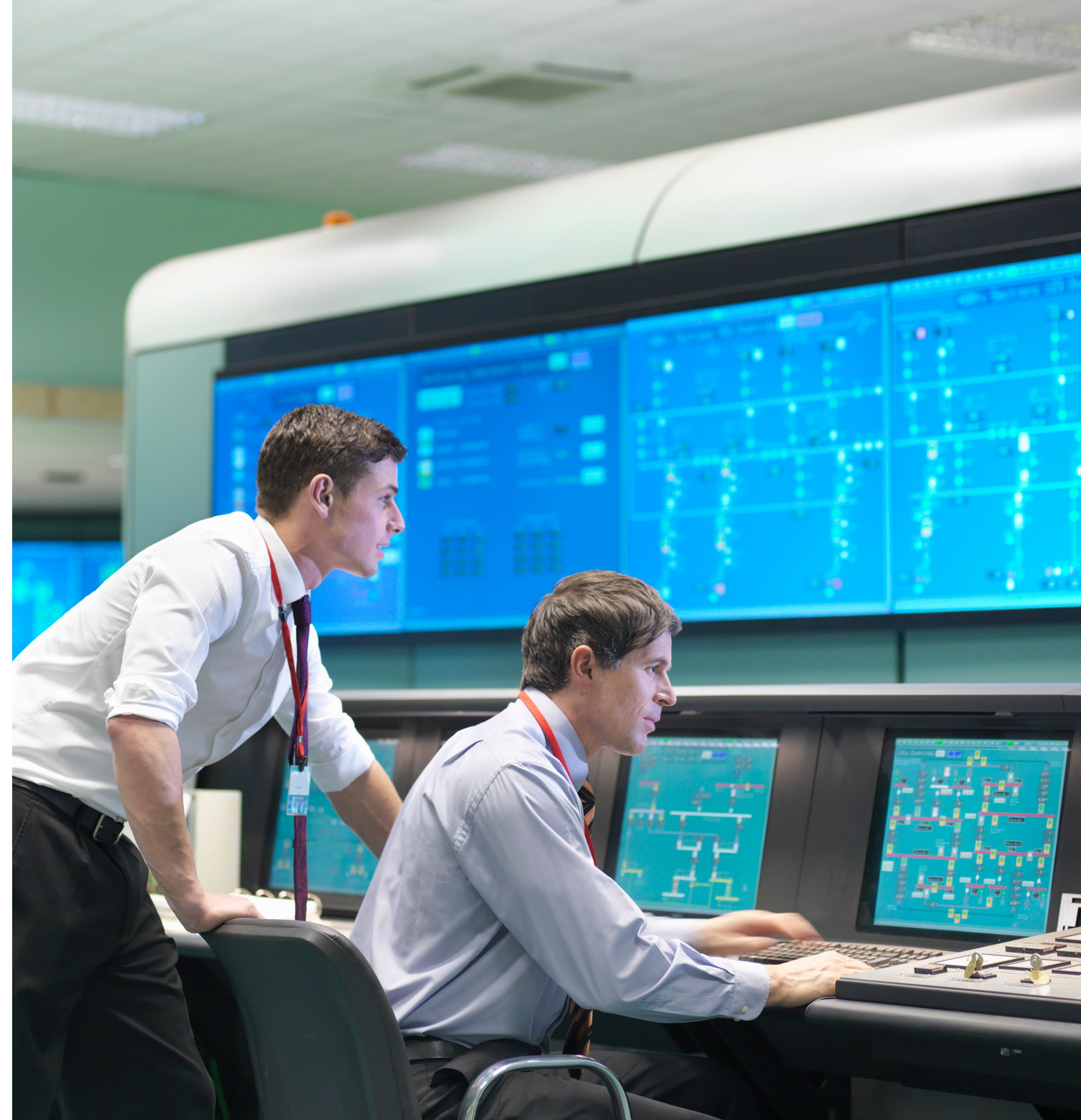
- Automation
- Electrical distribution

Results

- Improved operational efficiency and reliability
- Confidence in their ability to meet their OPEX reduction goals and timeline - including a 15% decrease in energy requirements by 2023 - without reducing productivity.

Learn More

Belgian water utility serving

2.4 million people in **200**

municipalities since **1986**

- Do you help to reduce your water losses and ensure water quality by improving water conservation?

- Do you need better insights to help you improve water resource management?

- Do you want to improve energy efficiency and decarbonize water operations across your entire network?

- Do you need leak detection and real-time information from the entire distribution network embedded into SCADA?

Integrated water network management

Solution architecture

EcoStruxure Water Advisor Water Simulation

EcoStruxure Geo SCADA Expert

AVEVA System Platform

Modicon M580

SCADAPack RTU

Universal Automation Controller (dPAC)

Altivar Process ATV6x

Altivar dPAC

TeSys Motor Management

Process Instrumentation

(Side labels: Apps, Analytics · Edge Control · Connected products)

Digital twin of the water distribution network embedded in remote SCADA. Operations managers and control room operators get the insights they need to reduce network management risk, cost, non-revenue-water, and energy use.

Why it matters?

Optimize network operation in real-time

• Adjust to changing demands

• Proactively inform customers of supply issues

• Immediately identify any water supply pollution issues

• Control and optimize water quality

Up to 15% reduction of leakage (non-revenue water)

• Reduce time to detect water supply main leaks

Real world project execution
Field application example

Acqua Novara (AVNCO)

10% reduction in water loss

6 Mm3/year of water saved

15% reduction in water supply energy consumption

As more and more municipalities look to reduce costs and improve operations, they are finding that digitizing their water networks yields promising new ways to reduce costs and optimize operations.

Acqua Novara, for example, an Italian-based water utility, recently merged multiple municipal management organizations into one. Their water network supplies 450,000 people across 140 municipalities, and covers 3,600 square kilometers of area. Water network leaks and inefficient use of energy were resulting in high operating costs.

In order to address these issues and strengthen their network, they moved to a centralized management system and standardized their procedures. To support this process, they adopted EcoStruxure digitization technologies including smart sensors, variable speed drives (VSDs), analytics software for water loss management and water network optimization, integrated SCADA and telemetry, and Modicon PLCs. Following a smooth and rapid integration, they were able to benefit from a 10% reduction in water loss, 6 Mm3/year of water saved, and a 15% reduction in water supply energy consumption.
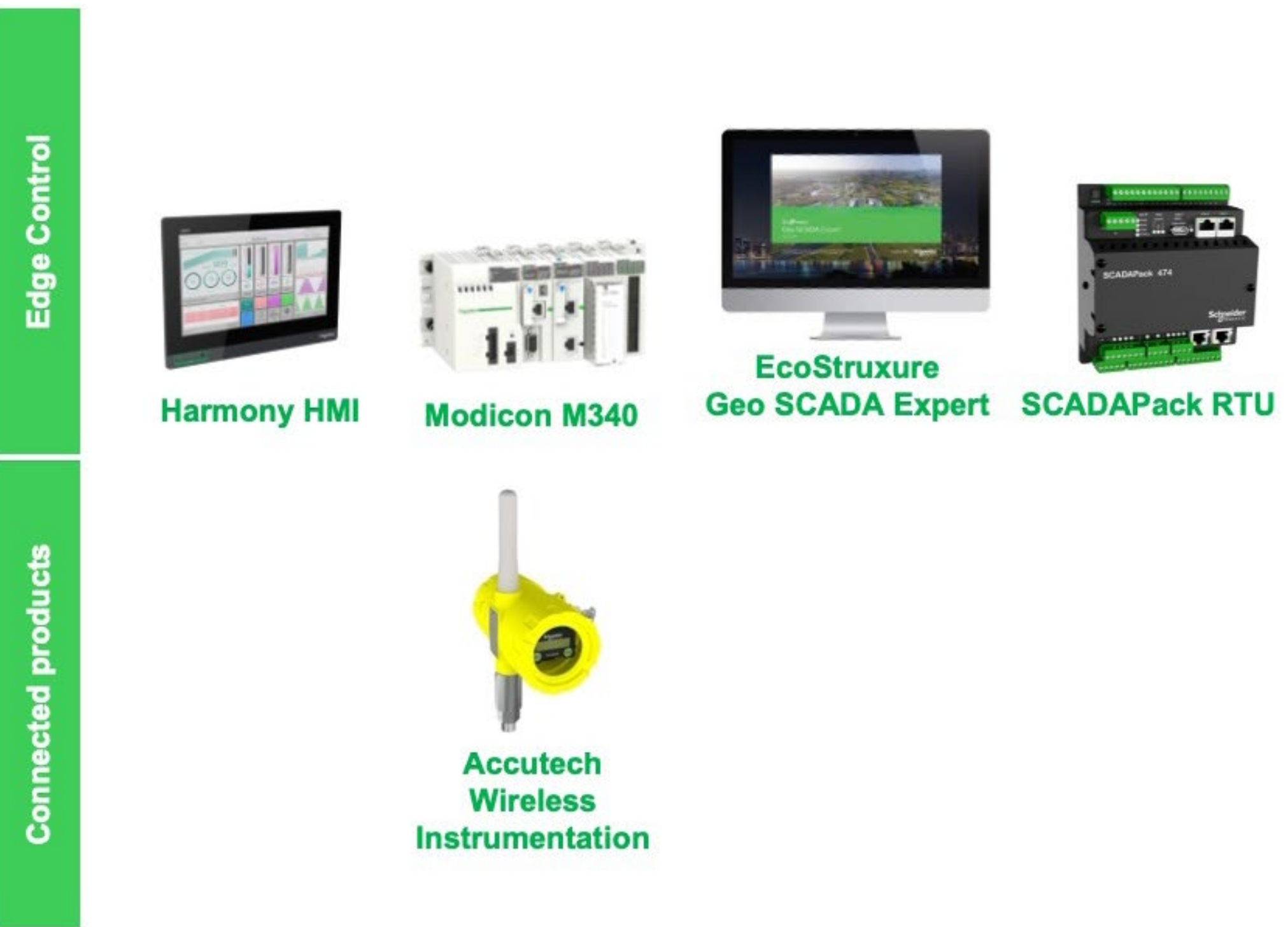
Learn more

- Do you need to monitor and track fuel consumption and stock with a telemetry solution built from commercially available products which have been tested and validated in real projects?

- Do you need to monitor fuel stock and consumption with wireless instrumentation?

- Do you need complete, accurate fuel visibility and reconciliation (tank levels and fuel dispensed to mobile assets)?

Fuel management solution plants

Solution architecture

Edge Control

Harmony HMI   Modicon M340

EcoStruxure
Geo SCADA Expert   SCADAPack RTU

Connected products

Accutech
Wireless
Instrumentation

Solution to monitor and control fuel consumption in open pit mines to reduce operating costs.

Why it matters?

- Allow better informed decisions to increase mobile asset performance, reduce fuel consumption and loss, and improve overall profitability
- Realtime accounting: fuel inventories, purchases, and usage per asset
- Improve data accuracy and accountability

Copper Mine Fuel management

Customer challenge

This U.S. copper mine in a very remote location needed to improve the tracking reliability of their own fuel use and fuel supplied to their contractors.

A significant amount of fuel was unaccounted for each month resulting in unrecovered costs. It was also not possible to reliably track fuel use by vehicle or manage fuel dispensed and storage levels. Other management solutions failed to deliver results.

The solution

Through telemetry supervision with Geo SCADA™, Accutech™ wireless sensors and PLCs, Total Power deployed a complete and accurate fuel visibility and reconciliation system.

Results

- Initial audit of installation
- Increased accountability for up to 100,000 gallons of fuel resulting in more accurate cost recovery from 3rd party users
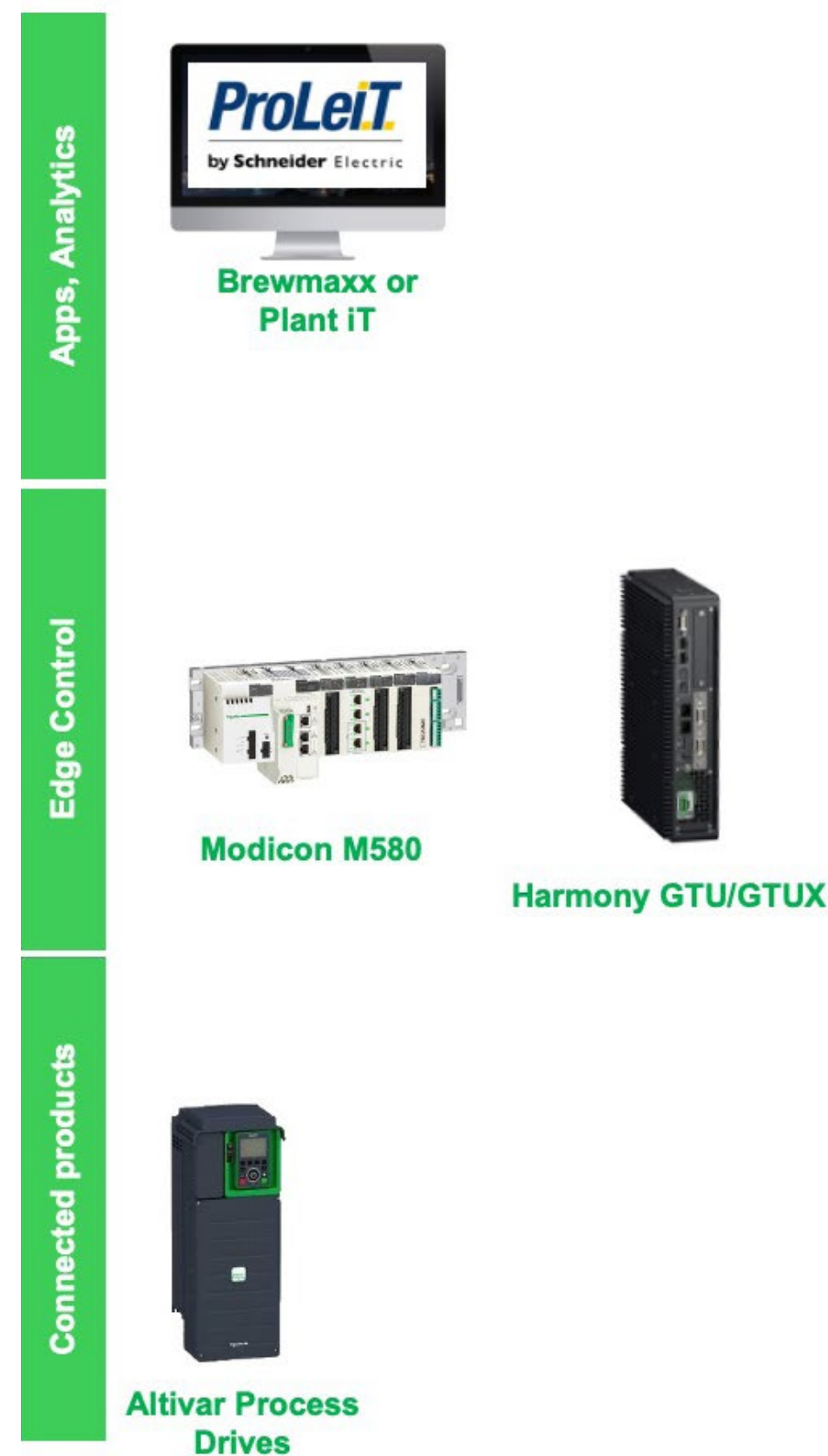- 9% increase in data accuracy

Learn More

"This will completely change the way fuel and other consumables are managed in industrial operations."

- Do you need to collect real-time Clean-In-Place (CIP) data and understand relevant trends?

- Do you need to provide better transparency of CIP process data and analytics to understand what happened (or not) and why it happened?

- Do you need to monitor and optimize CIP operations and provide the level of traceability required by regulations and standards?

Clean-In-Place Optimize for Food and Beverage (F&B)

Solution architecture

Apps, Analytics

Brewmaxx or Plant iT

Edge Control

Modicon M580

Harmony GTU/GTUX

Connected products

Altivar Process Drives

Assessment, monitoring & optimization tool to track and tune Clean-In-Place (CIP) operations within the Food & Beverage industry.

Why it matters?

- Quickly generate significant savings: about 10k€ per year each CIP line and average payback is 1 year.

Customer	Number of Lines	Savings identified	Savings per line
1	14	126 k€	9,0 k€/line
2	5	32 k€	6,4 k€/line
3	11	130 k€	11,8 k€/line
4	7	106 k€	15,1 k€/line
Average savings per lines			**10,6 k€/line**

Other benefits include:

- Improved traceability
- Help to ensure cleaning quality
- Reduction in lost product

- Increased productivity
- Reduced load on waste water treatment

Nestlé Waters Clean-in-place optimized for Food and Beverage

"Thanks to Schneider Electric EcoStruxure solution, we are now able to reduce our production line downtime for CIP by 20%."

Customer challenge

Nestlé wanted to improve the efficiency and tracking of their production and clean-in-place and processes. Effective management and tracking of cleaning processes is essential to ensure safe products while operating efficiently and sustainably.

The solution

Nestlé selected Schneider Electric's innovative EcoStruxure Clean-in-Place solution. The flexibility it provided allowed them to adapt the system to their IT and automation constraints and more efficiently track and optimizing their cleaning processes.

Results

- 20% less CIP time
- Improved tracking and diagnosis processes
- 340t CO_2 saved in the first year
- Improved maintenance with dedicated custom features

Do you need to improve operational performance and sustainability with help from real time insights?

Do you need the right business analytics and intelligence to drive improvements in:

• Safety?

• OEE and line/machine performance?

• Production flow and throughput?

• Quality?

• Asset uptime with root cause analysis of downtime events?

Do you want a solution that is scalable and can easily be deployed plant or enterprise wide?

Control tower

Solution architecture

Apps, Analytics

AVEVA Data Hub

Control Tower App

Edge Control

Modicon M580

Harmony P6 Edge box

EcoStruxure
Data Expert

Connected products

Harmony Hub

Sensors

This flexible, scalable IOT platform supports manufacturing or process business intelligence by aggregating all operational and business processes flow data.

Why it matters?

- Leverage business analytics as a new source of increased competitive advantage
- Clear insights from industrial big data to decide which improvements to prioritize first to make the greatest difference
- Faster deployment, lower software costs, enterprise wide scalability

Schneider Electric worldwide factories

Standardized Control Tower for Manufacturing for Schneider Electric Plants

As a manufacturing solutions provider, Schneider Electric uses, tests and implements the same solutions we recommend to customers. To improve our competitiveness at all our plants around the world and meet escalating demand, we strive to increase production capacity.

To do so, it's critical that we increase plant uptime, optimize plant efficiency, and empower our workforce of over 128,000.

We have a wide range of different manufacturing processes where complexity must be translated to simplicity. Processes need to be simple enough for anyone to manage.

The solution must support processes with different levels of automation from all-manual assembly lines to a fully automated process.

A manufacturing control tower has been developed as the scalable IOT-based manufacturing efficiency system for Schneider Electric plants.

This has led to multi-site operating insights, issue and root cause analysis based on multiple inputs and KPIs, and a better understanding of process situations for better decision making and customer satisfaction

Learn More

- Deployed EcoStruxure solutions for manufacturing in 200 of our sites

- Reduced energy costs 10-30%

- Reduced maintenance costs by 30-50%

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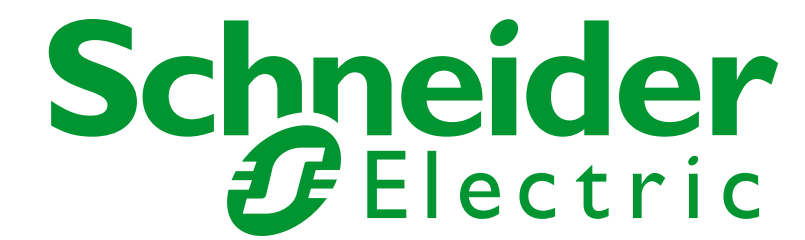
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