



# Efficient Facilities

EcoStruxure™ manage safer, more available and greener resources  
for Food & Beverage, Household and Personal Care production environments

Life Is On

**Schneider**  
Electric



**Our mission is to be  
your digital partner for Sustainability and Efficiency**





**Rethinking next generation industries:  
business resilience and sustainability performance  
for lifecycle integrated management**



# We help on every step of the value chain

**Efficient facilities**  
Safer, more available,  
and greener resources

**Resilient supply chain**  
Manage complexity and  
improve visibility

**Agile manufacturing**  
Boost manufacturing  
flexibility & efficiency



# ... leveraging transversal digital transformation capabilities

## Food Safety & Traceability

Ensure compliance and increase trust across the whole value chain

## Energy & Sustainability

Reduce environmental footprint and meet sustainability goals

## Asset Performance

Maximize return on asset investment

## Workforce Empowerment

Take teams efficiency to the next level

## Digital Engineering

Cut time, cost and risks of capital project engineering

# Efficient Facilities

Safer, more available and greener resources

## Power Safety & Availability

Standardization, site assessment, and predictive maintenance for safe and available power

## Building management

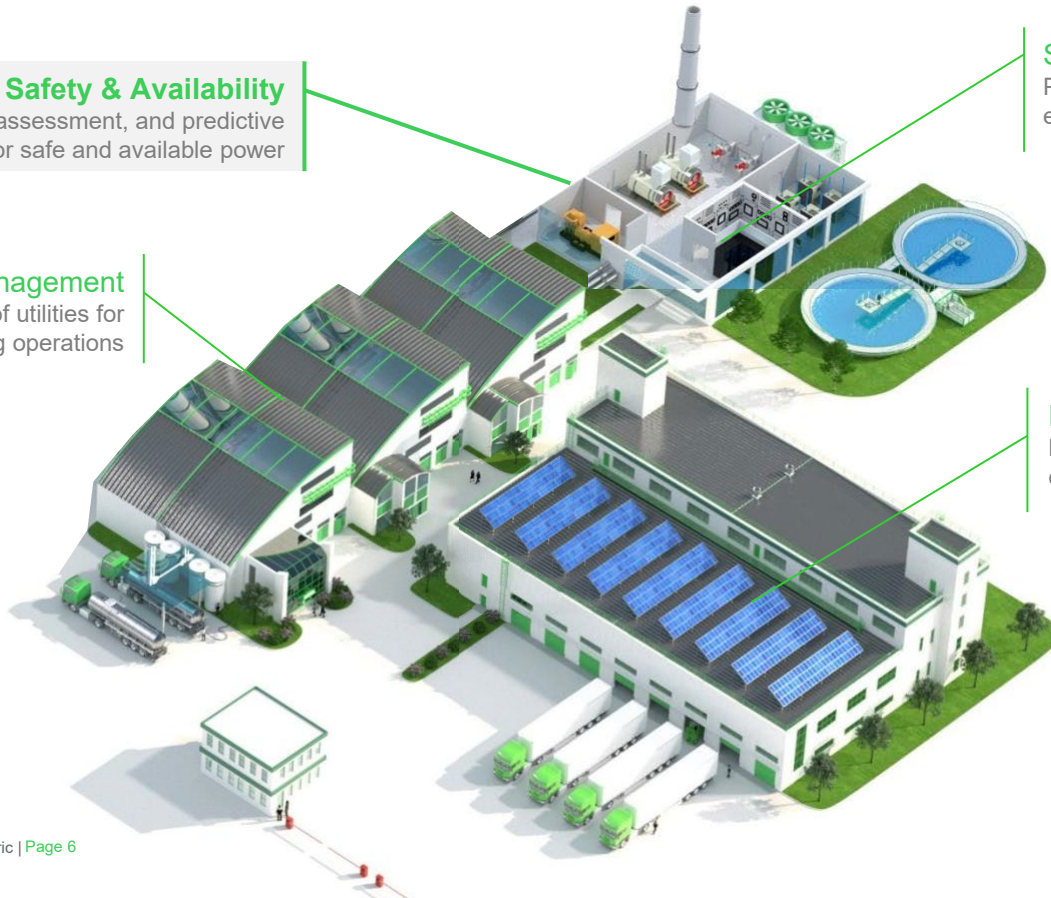
Effective and efficient use of utilities for your manufacturing operations

## Server Rooms management

Provide self contained and secure computing environment for your on-premise applications

## Renewable Energies & Microgrid

Manage complex energy mix to optimize cost and carbon footprint.

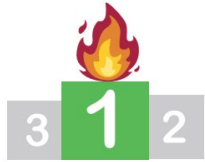




# Power Safety and Availability

Minimize your risks, production downtime and Total Cost of Ownership

## Safety of people and assets cannot be compromised



After natural disasters, fire is the **1st\*** cause of corporate insurance claims. Electrical fire contributes to greater than **\$200M\*\*** in property damage cost.

\*Allianz, \*\*NFPA

**22%\*** of workplace fires are electrical in origin.



**25%\*\*** of electrical fires are due to faulty or loose connections.



\* Electrical Contractor Magazine, \*\* NETA World

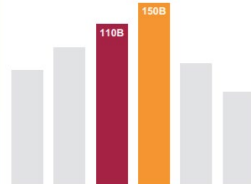


**5 to 10** arc flash incidents per day in USA.

ESFI, NFPA

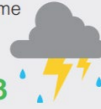
## Power is essential to ensure business continuity in the digital age

Power outages cost the US Economy about **110B USD** and the EU economy **150B EUR** each year.



Berkeley National Labs, Consequences of Poor Power Quality – An Overview - 2011

Electrical interruptions caused by extreme weather have **doubled\*** since 2003 in the US.



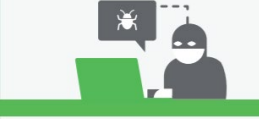
Industrial plants can lose anywhere from **100k Euro** up to nearly **half a million** per hour.



Poorly maintained switchgear/circuit breakers are **62%\*** more likely to fail than those under a proper maintenance program.

\* IEEE 493

## Cybersecurity planning is essential, not optional



**Thirty-one percent** of organizations have experienced cyber attacks on operational technology infrastructure.

Cisco

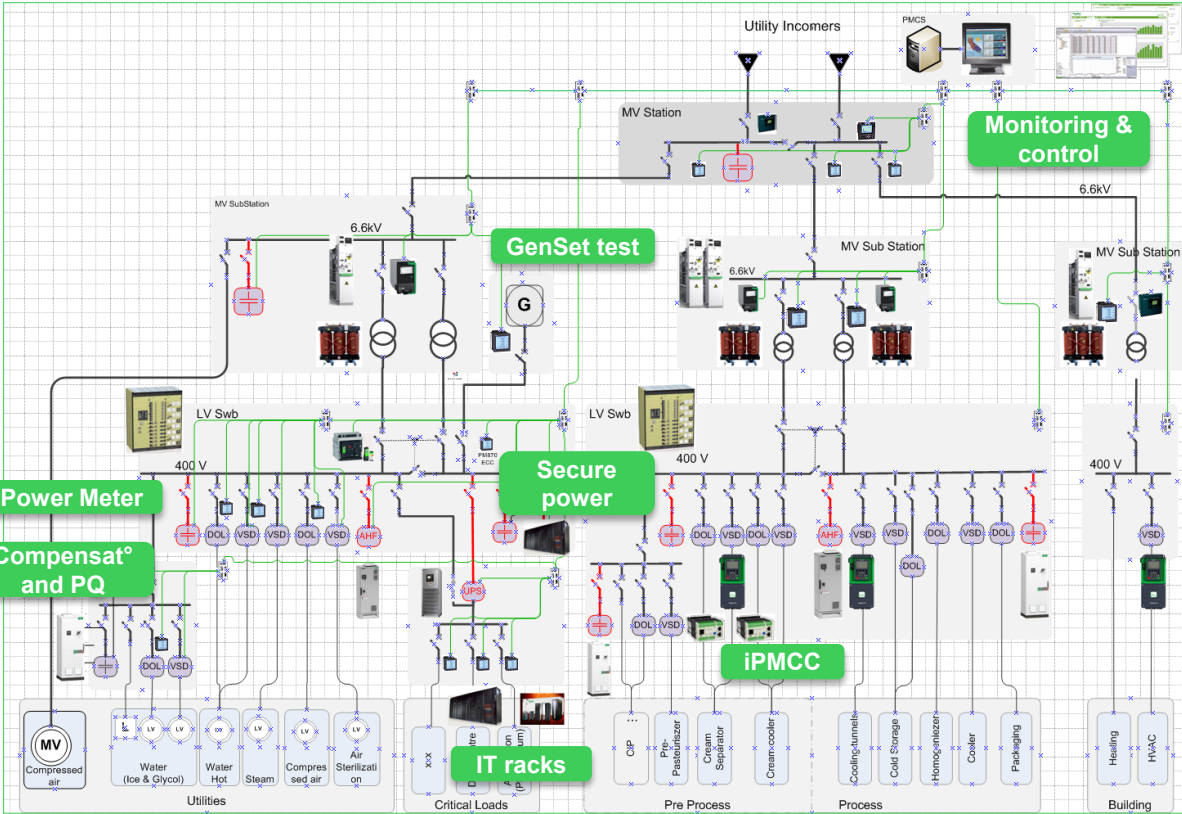


IoT security costs will rise to **20%** of the IT budget of a company by 2020 compared to just 1% in 2015.

Gartner

# Power Safety and Availability

Building specific and comprehensive solutions to energize your plants



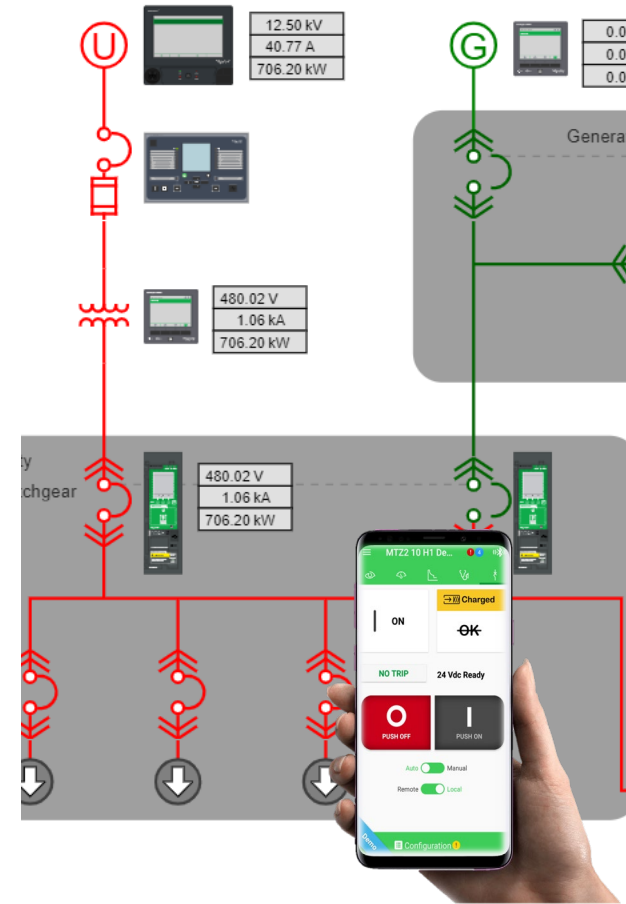
- **Safe** for people, asset & data
- **Available** with dedicated architectures
- **Efficient** with native digital communication to integrate asset and energy management.
- **Open** to comply with all Process system
- **Tested & Validated** Architecture for easy implementation & limit risks



# Power Safety and Availability

Building specific and comprehensive solutions to energize your plants

- EcoStruxure Power helps achieving business outcomes
  - **Improve electrical safety** with safety-by-design circuit and load protection, fast tripping to mitigate impact of arc events, continuous monitoring of temperature, alarming, and predictive analytics
  - **Increase power reliability and availability** with operational intelligence, power quality monitoring, enhanced diagnostics and fast restoration, asset management and control
  - **Manage energy performance** with energy accounting, compliance reporting and performance analysis



# Power Safety and Availability

Potentially delivered via ready to use modules

- Electrical MV/LV Substation fully assembled and pre-commissioned at factory



- A new step in standardization and modular design of plant

- Plug & Play Solution to reduce site work and site costs
- Withstand to harsh environments
- Safety for people and assets
- Compliance with international standards and local regulations
- Reliable & low maintenance equipment
- Benefits
  - Reduce time to market
  - Reduce cost and risks
  - Improve Quality



# Power Safety and Availability

## Possible safety issues in existing plant



### People

#### Right Safety Competency?

- Expertise of your electrical staff?
- Ready to respond safely to unexpected events?
- Non-electrical staff electrical safety awareness?



### Systems

#### Good System Understanding?

- Diverse installed base and uncertain history?
- System expansions managed strategically or ad hoc?
- Are fire risks identified and managed?



### Equipment

#### Equipment status visibility?

- Potential failure and fire risk due to ageing assets?
- Maintenance appropriate to avoid disruptive failure?
- Equipment correctly documented and identified?
- Arc flash and fault rating risk identified and managed?



### Operations

#### Compliant Safety Procedures?

- Documentation management?
- Periodic review and validation of safety procedures?
- Corporate versus local regulations & standards?
- Are procedures understood and correctly followed?

# Power Safety and Availability

How can we help mitigate the risks?



## People

### Test, Train & Monitor Safety Competences

- Expert trainers in our 96 worldwide technical training centres or on site
- 24/7 multi-language e-Learning & “Serious Games”
- Haptic Virtual Reality to test safety behaviour



## Systems

### Audit your electrical system

- Technical studies & audit to identify and mitigate risks
- Take the first corrective actions



## Equipment

### Safely maintain, connect & monitor your equipment

- Manufacturer maintenance
- Monitor the health of your critical assets
- Use analytics to optimise maintenance and predict failure



## Operations

### Secure your operations

- Step-by step guidance with Augmented Reality solution
- Digitize and simplify documentation management process



# Power Safety and Availability

Test, train and monitor safety competencies

- eLearning
  - Comprehensive catalogue for electrical and non-electrical staff available on a global basis



Electrical risk prevention for electrical staff

Electrical arc flash prevention linked to NFPA regulation

Electrical safety in the workplace for non-electrical staff

Test and train your electrical people on their safety knowledge

For electrical Staff

For non electrical Staff

Worldwide, 10 languages

NEM countries, or NEM native global companies, 3 languages available

Worldwide, 19 languages

Click here for a demo

Click here for a demo

Click here for a demo


- Virtual Training
  - VR lab with MV and LV equipment allowing trainee to acquire new competencies in operation & maintenance

A digital way to prepare your team for equipment operation

Haptic VR educational equipment is a training solution that plunges trainees into a **virtual electrical world**, called VR Lab.

Our solution provides VR Lab on electrical distribution with MV and LV equipment. It allows trainees to acquire new **competences**, in electrical **safety, operation & maintenance** domains.

It allows them **to learn routine processes**, but also face rare **unexpected events and situations**.



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- In class training
  - 96 training centers in the world using of modern technologies such as Augmented reality



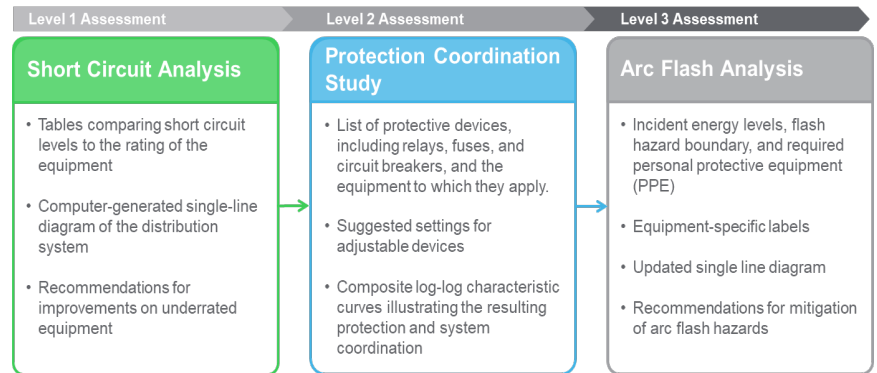
# Power Safety and Availability

## Audit your Electrical systems

- MPS-Enterprise arms you with four distinct areas of planning and recommendations so that you can expertly manage your electrical distribution



- Arc flash study will assess the incident energy of an Arc Flash, recommend protection settings and define the labelling and PPE requirements





# Power Safety and Availability

Safely maintain, connect and monitor your equipment

Contract Service Plan



Condition based maintenance using on-line monitoring and predictive analytics



## ASP CONNECT

- **Advantage Service Plan**
  - Preventive maintenance for your electrical distribution assets, connected or not
  - Scheduled on-site diagnosis (ASP Diag)
  - Tailored corrective maintenance (Asset Connect)
- **EcoStruxure Asset Advisor**
  - Cloud based asset management of your connected critical equipment
- **Field services expertise** - for your peace of mind
- **Proprietary diagnosis** - based on 25+ years manufacturer experience
- **Emergency on-site intervention** and spare parts delivery
- **24/7 Service Bureau** support and critical connected asset health monitoring
- **Operational and financial optimization** (by reducing risks of failure, optimizing asset lifetime and ensuring maintenance budget controls)

# Power Safety and Availability

Secure your operations with Augmented Reality solutions



- Increase Safety procedure compliance thanks to step-by-step digital check list



- Reduce human error and speed up operation and maintenance

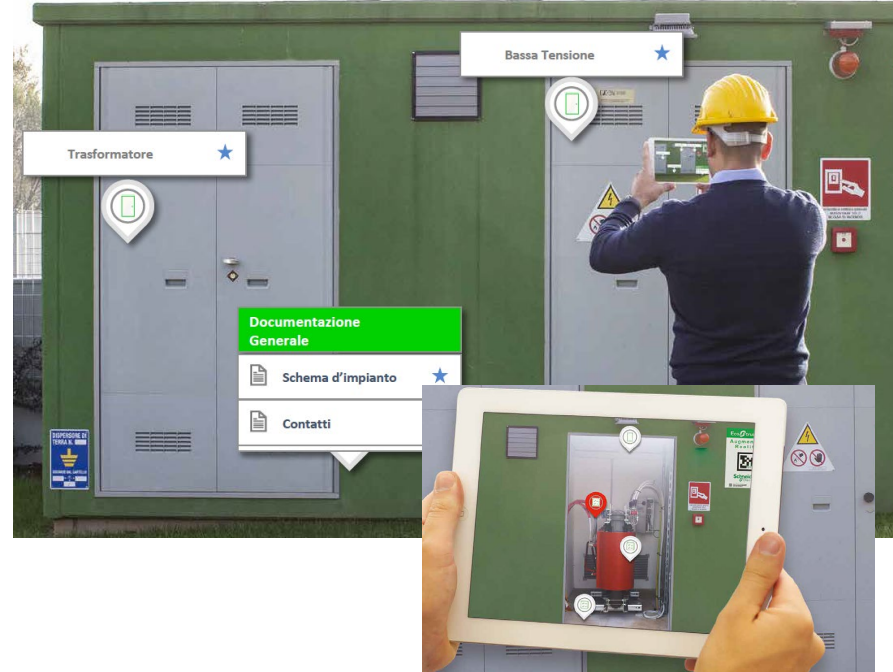


- Manage much more easily documentation process



- Get extra information, with invisible parts shown and remote mentoring and support

Pilot mode



# They trust us

- 400 sites audited in a Food & Beverage company.
- 120 Life Science company sites audited, 2000+ electrical staff tested and trained on electrical safety.
- 35 000 pharmaceutical company employees trained thanks to our solution, and their 70 sites audited.
- 24/7 continuous remote asset monitoring, with predictive assets maintenance in all packaged goods company Mexican sites.





# Fonterra, New Zealand

The largest company of New Zealand



## Customer Challenge

- Increase Darfield plant with a new Dryer
- Process additional 4,4 million liter of milk a day
- Produce about 30 tons/hour of whole milk powder
- Maintain product quality
- Reduce operation cost

## The Solution

- EcoStruxure Power: holistic Power management system
- MV drives
- Harmonic mitigation
- Energy and Quality monitoring

## Customer Benefits

- Delivery on time, on budget
- With very high quality

## The Results: Life is On with ... Fantastic health and safety performance

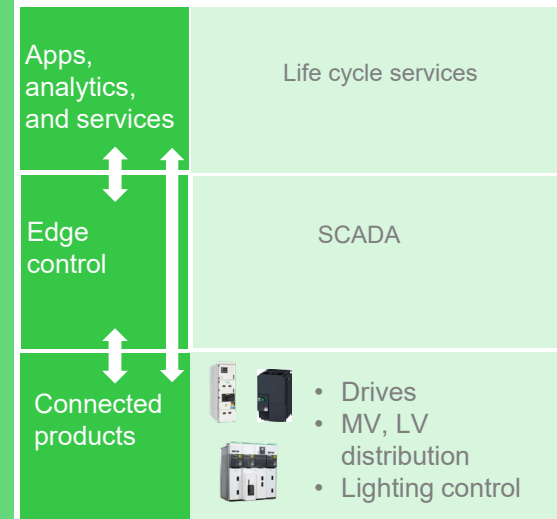
“Fonterra is pushing the limits on scale and this requires a lot of technology and knowledge. Schneider Electric’s role is understanding how to control and provide enough energy into the plant ”

Glen Sullivan,  
Group Manager of Electrical Engineering,  
Fonterra

[Link to Web](#)  
[Link to Video](#)

Pushing performance and safety  
to the limits with  
EcoStruxure™ Power

**EcoStruxure™** For Food & Beverage  
Innovation At Every Level



# Medium Size Bakery, Europe

Energy efficiency upgrade



## Customer Challenge

- Electrical problems and power outages during peak production time (winter)
- Ageing electrical infrastructure struggling to cope with ongoing demands of expanding factory

## The Solution

- Altivar Speed Drives
- VARSET Power Factor Correction Unit
- 80 kW Solar system

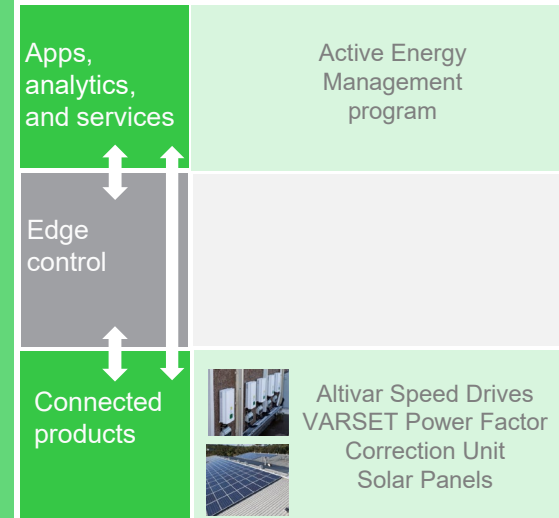
## Customer Benefits

- Additional power capacity provided
- Reduction of Greenhouse Gas Emissions by 30,000 kg
- Payback in less than 5 years
- Improved reliability of the solution provided

**The Results: Life is On with... \$28,000 savings per year in energy consumption**

Family-owned business producing bakery products

**EcoStruxure** For Food & Beverage  
Innovation At Every Level



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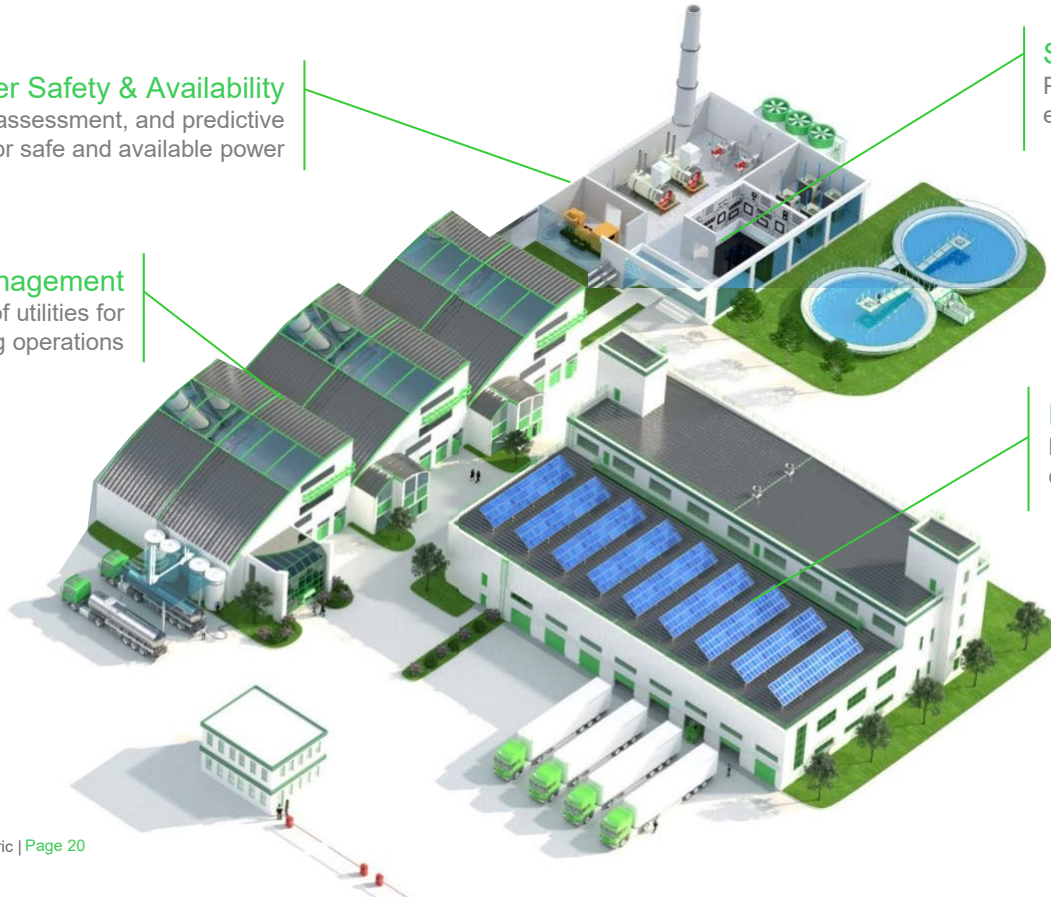
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Manage complex energy mix to optimize cost and carbon footprint.





# EcoStruxure for Food & Beverage / CPG

## Agile manufacturing Boost manufacturing flexibility and efficiency

- Manufacturing Operation Management
- Industrial Information Management
- Process Control System
- HMI and data Integration
- Process Automation
- Packaging Automation

## Efficient facilities Safer, more available, and greener resources

- Smart Building Management
- Power Safety & Availability
- Power Quality & efficiency
- Renewable Energy & Microgrids
- IT Infrastructure Management

## Resilient supply chain Manage complexity and reduce logistics costs

- Agriculture Efficiency & Sustainability
- Suppliers Management
- Supply Chain Optimization
- Cold Chain Monitoring
- Product Information Management

## Food Safety & Traceability Ensure compliance and trust across the product life cycle

- Food Defense
- Cybersecurity Services
- Digital Calibration
- Raw material traceability
- Production traceability
- Product Identification & Tracking

## Energy & Sustainability Reduce footprint and meet sustainability goals

- Sustainability Consulting
- Energy Demand Services
- Strategic Energy Sourcing
- Enterprise data management
- Energy as a Service

## Asset Performance Maximize return on capital expenditure

- Assessment and Consulting
- Enterprise Asset Management
- Condition Monitoring
- Predictive Analytics
- Line & Process Optimization
- Modernization services

## Workforce Empowerment Improve staff knowledge, productivity and collaboration

- Operator Training Simulator
- Augmented & Virtual Reality
- Workflow Management
- Staff Schedule Management
- Operator Knowledge Sharing

## Digital Engineering Cut time, cost and risks of capital project engineering

- Electrical CAD
- Building Information Modelling
- Integrated Engineering-Design
- Digital Asset Visualization

A photograph of two men in white lab coats and hairnets standing on a factory floor, leaning on a yellow and black railing. They are engaged in a conversation, with one man pointing towards the background. The background shows a complex industrial environment with various machinery, pipes, and structural elements. The lighting is bright and even.

Let's talk about it.

Life Is On



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Electric