

From Farm to Fork we help improve sustainability, efficiency and transparency of your operation thanks to digital innovation.

Ensure product quality, while lower costs production

EcoStruxure™ Power for Food and Beverages for Large sites

A disruptive market

“In a fast-moving consumer market where customers buying behavior is evolving quickly, the success of F&B industry is associated with *brand image*, *agility* and *cost optimization*. In such a complex and demanding context, many F&B actors see digital transformations as key enablers for differentiation and profitable growth.”

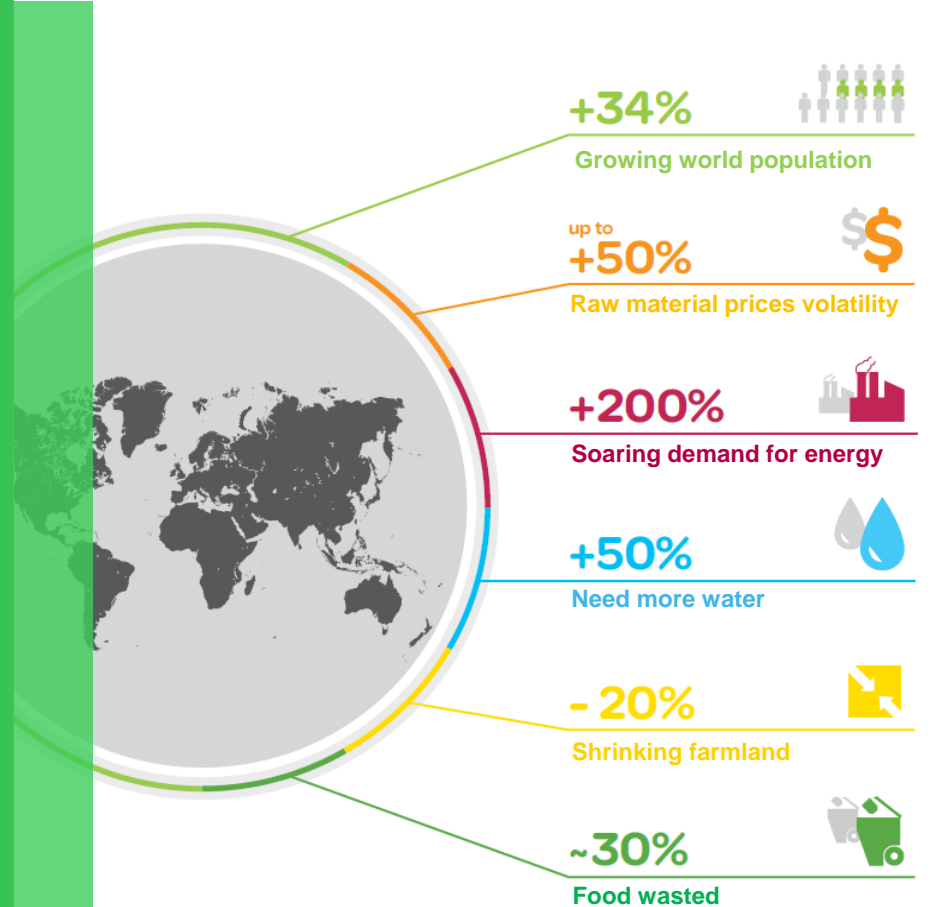
The F&B industry needs to *produce more* to feed the growing world population while better managing the planet resources (energy, water, wastes,) and facing the impact of climate change (raw material availability and price)

Downtime, full capacity production, workforce, flexible extension

How will we feed the world in 2050 ?

Business as usual is not an option...

We need to find a new sustainable efficiency paradigm



Address your greatest challenges

With EcoStruxure™ Power for Food and Beverages

Design & Build Flexible Plants for the Future

Efficiently Operate & Maintain Productive Plants

Workforce 2.0

“The young generation is more and more digital and green-conscious, they want to data-driven productivity context, demonstrate green image, and be contributor to planet & society program”

Production Flexibility

“Having the right tools and guidance to build adaptable, and flexible plants to meet fast-changing consumer demands to sustain market competitiveness”

Regulatory Compliance

“It is mandatory to be up to date compliant with standards and to have capability to prove carbon footprint. Cybersecurity and energy efficiency standards and certifications will impact in the way to design new architectures”

Ensure Product Quality

“To avoid production breakdown, we have to guarantee power availability, identify and diagnose failure rapidly and act fast to reduce impact to sensitive production !”

Lower Cost of Production

“To minimize the cost of production and increase profitability, a good understanding and benchmarking of factory performance may help to plan and reduce maintenance cost and also optimize the energy use”

SIMPLER

FASTER

COMPLIANT

RELIABLE

SAFE

EFFICIENT

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Internal

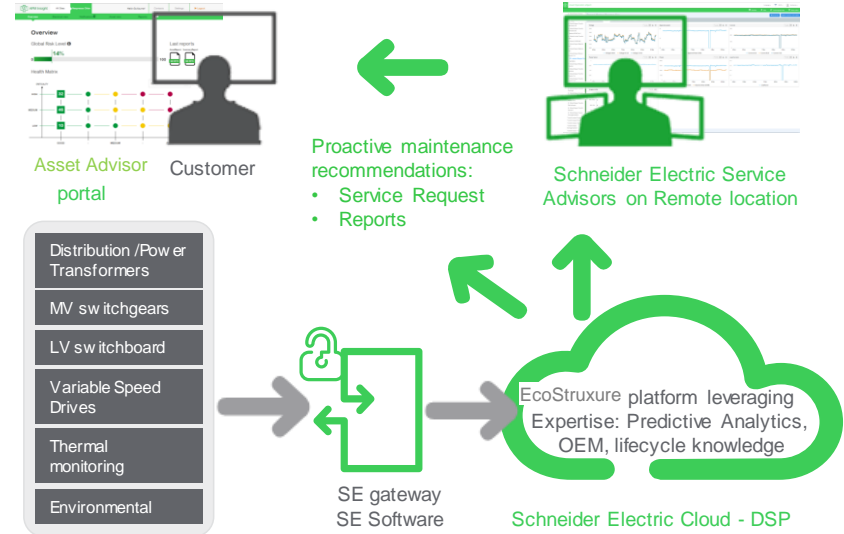
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Challenge 1 : Workforce 2.0

“The young generation is more and more digital and green-conscious, they want to data-driven productivity context, demonstrate green image, and be contributor to planet & society program”

Empower staff and catch young generation



- Digitalized the Electrical Distribution architecture
- Use relevant Edge software's and analytics Apps
- Collect data and compare factory performance
- Use Advisor services to leverage the image
- Access yourself to your data in the cloud to foster decision
- Gain in digital competencies to prepare factory of the future
- Transfer knowledge from seniors to juniors

“In F&B, only 23% of the industry have appointed a Chief Digital Officer”



BY APPOINTMENT TO THE ROYAL DANISH COURT

Royal Greenland

*Challenge 1 :
Be able to attract a
modern workforce*

Royal Greenland

Food processing company invests in energy efficiency

Customer Challenge

- High energy consumption
- Multiple physical sites
- No central management of usage and costs

The Solution

- EcoStruxure™ Power Monitoring Expert
- Customized information from multiple factories integrated to a single user interface

Customer Benefits

- Standardized measurement method to facilitate improvement
- Integration of 20 operating locations across geographies

Multinational company processing **millions** of pieces of seafood daily



EcoStruxure™ Power Monitoring Expert



“We’re constantly striving to optimize our production facilities, and this is where monitoring energy consumption has tremendous potential.”

Henrik Kraft,
Technical Project Manager, Royal Greenland

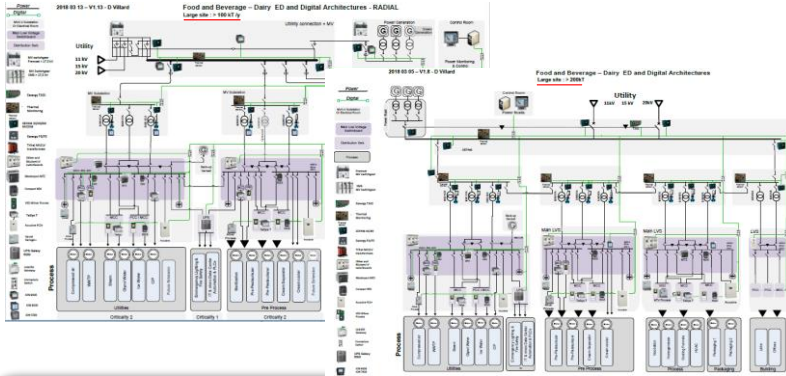
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Challenge 2 : Production Flexibility

“Having the right tools and guidance to build adaptable, and flexible plants to meet fast-changing consumer demands to sustain market competitiveness”

Speed up new product introduction



Save Time and Money in Design & Engineering

Simplify Install & Commissioning

- Specify your process critical zones
- Specify installation and commissioning procedure

Meet the challenge of the flexibility



Reduce Risk and contribute to Future Ready Design

- Improve the digitalization of your process and facilities
- Re-use reference design and architectures and optimize to specific company process

“Power quality costs 4% of the annual industry turnover”

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Five:am, Australia

Greenfiled dairy products plant

*Challenge 2 :
Be responsive to fast
changing consumer
demands*

Customer Challenge

- Build a sophisticated and automated manufacturing plant with flexibility for future business expansion

The Solution

- Optimized Electrical Distribution architecture
- EcoStruxure solutions platform

Customer Benefits

- Facility can run from one interface by just one or two operators

Start-up company producing
organic dairy products.

EcoStruxure™
Innovation At Every Level

for Food & Beverage

“The EcoStruxure platform from Schneider Electric helped us achieve sustainable manufacturing processes by reducing wastage, and helping ensure a smooth running of the plant, enabling significant time savings from not having to manually operate and optimizing maintenance plan”

David Prior
Owner Five:Am

Challenge 3 : Regulatory Compliance

“It is mandatory to be up to date compliant with standards and to have capability to prove carbon footprint. Cybersecurity and energy efficiency standards and certifications will impact in the way to design new architectures”

Comply with Standards & Best Practices

- Learn white papers and reference design
- Comply with market best practices and standards
- Put in place a Cybersecurity strategy and deploy it



Minimal

Anti-Malware
Best-in-class Anti-Malware solutions validated in time critical OT environments.

Security Network Devices
OT next generation firewalls, data diodes and network IDS.

Secure Architectures
Certified secure reference architectures including segmentation based on OT function and data flow.

Hardening
Hardening procedures and tools based on the latest benchmarks for IEDs and PCs.

Backup and Restore
Disaster recovery to return to service as quickly as possible after a malicious event or component failure.

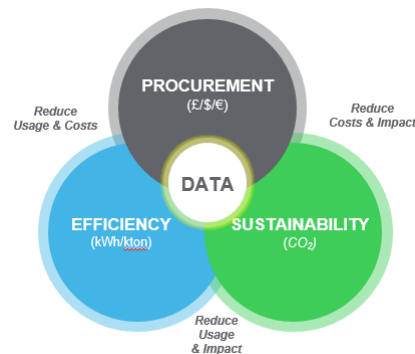
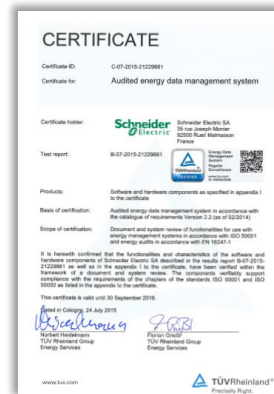


Nice to have

Centralized Management
Centralized management of users and security policy for system components.

Logging & Monitoring
Logging and monitoring based on IEEE 1686 and IEC 62351-7 and integrated to the latest real-time monitoring systems.

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Maintain Compliance to Regulations and Sustainability

- Put in place an Energy Efficiency strategy
- Report Carbon emission evolution
- Benchmark my Power quality
- Maintain availability of backup power

“49% of the F&B CFO see a correlation between sustainability and financial performance”





Grain player, Europe

Moving away from diesel generator for electrical generation

Customer Challenge

- *Put in place an Energy Efficiency strategy*
- Upgrade electrical capacity from 800 to 1,600 kVA
- Removal of on-site diesel-fired electrical generation

*Challenge 3 :
Be compliant with
government regulations*

The Solution

- Review of historical electrical demand
- Identification of the requirements for power upgrade
- Implementation and integration of a solution allowing complete removal of diesel-powered generators
- Installation of new High voltage/Low voltage switchgear and a 1,600 kVA transformer

Customer Benefits

- Reduction in carbon dioxide emissions: 127 tonnes per year
- Reduction of power costs by 36%

60 types of conventional & organic grains. **Drying capability of 240 tons grain per hour..**

“Following the development of our facility and after doubling our grain handling and drying capability, it was necessary to increase the capacity of our power supply. Schneider Electric Professional Services provided us with immediate support to develop a technical specification, followed by on-site support to project manage the upgrade process through to completion. Providing control of contractors, timescales, costs and the associated documentation meant we could focus on our core operations.”

Director

Challenge 4 : Help Ensure Product quality

“To avoid production breakdown, we have to guarantee power availability, identify and diagnose failure rapidly and act fast to reduce impact to sensitive production !”

Reduce power-related risks



Help Avoid Electrical Fires and Ensure Protection

Recover from an Outage and Help Restore Power Safely

- Detect arc flash and reduce risk to operators
- Measure abnormal temperature increase
- Diagnose and improve power restoration

“Electrical Hazard are in the top 5 reasons for fire incidents in manufacturing”

Avoid abnormal situations and production breakdowns



Help Avoid Downtime by Preventing Power Failures

Increase Electrical System & Asset Reliability

- Monitor and alarm on issues in the power installation
- Notify facility teams of power quality problems
- Trend load capacities to prevent process breakdown
- Put in place suitable corrections

“30 to 40% of the Business Downtime is caused by power quality disturbance”

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Challenge 5 : Lower Cost of Production

“To minimize the cost of production and increase profitability, a good understanding and benchmarking of factory performance may help to plan and reduce maintenance cost and also optimize the energy use”

Measure the impact of current decisions on future operation results



Save Money by Reducing Energy Spend

- Measure and understand my energy performance
- Benchmark competitiveness product/energy consumption
- Analyze my utility bill and put in place multi-source strategy

“The Energy consumption used by F&B factories is 3% - 5% of the total process cost, except for milk driers (30%)”

Lower the costs of production and maintain the operational efficiency with limited resources



Save Money by Optimizing Maintenance

- Provide users with constant & up-to-date information flow
- Provide users relevant asset health status
- Advise on efficient maintenance planning

“F&B represent 7% of the total energy used in Europe”



Macmyra Whisky, Sweden

Building a state of the art distillery

Customer Challenge

- Build the world's most innovative and environmentally-friendly distillery.

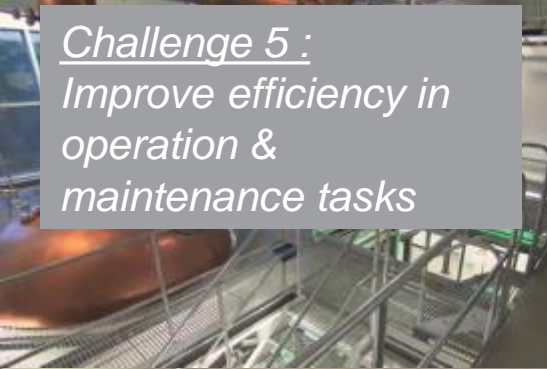
The Solution

- Comprehensive EcoStruxure architecture
- From innovative building design, to powerful energy and optimal production control.

Customer Benefits

- Joint innovative process development
- Combined and integrated solution
- Complete process traceability

*Challenge 5 :
Improve efficiency in
operation &
maintenance tasks*



Innovative Gravity Distillery
able to produce **1.8
Millions bottles** per year.



EcoStruxure™
Innovation At Every Level

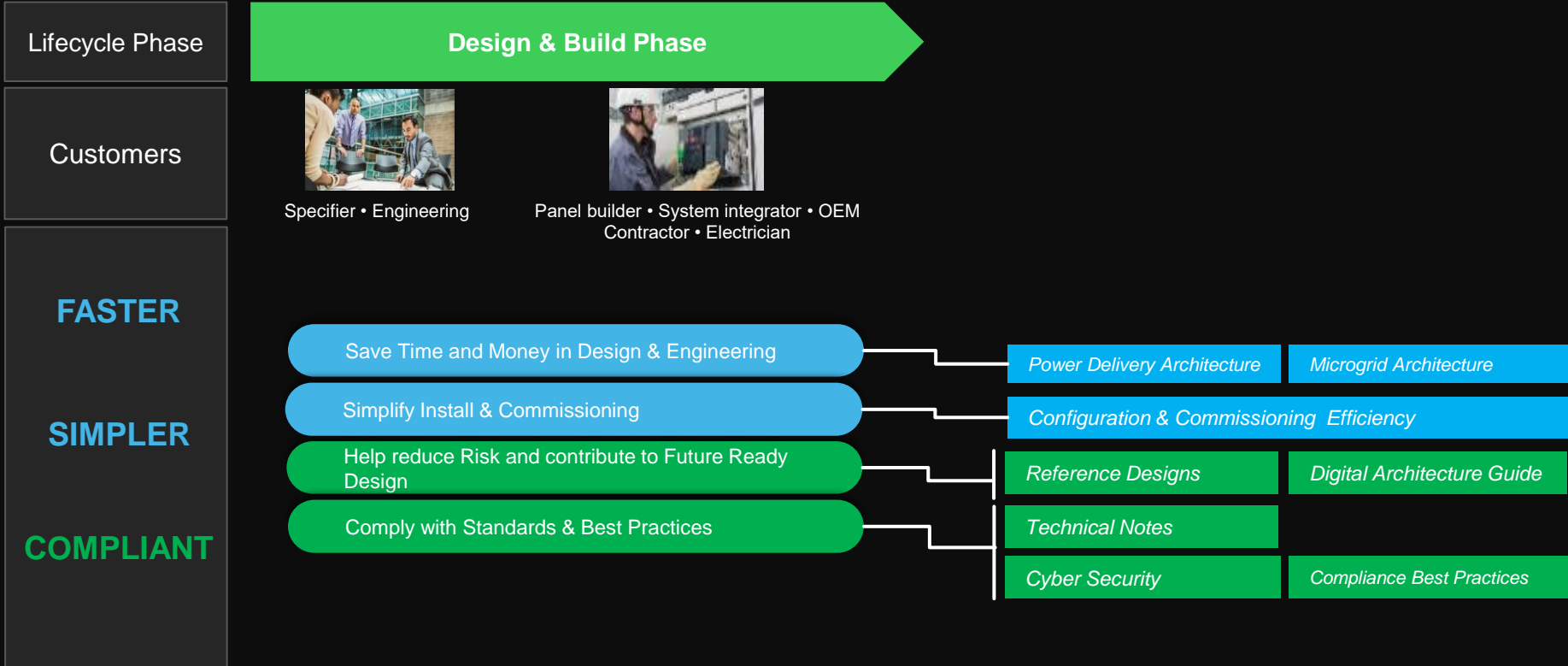
for Food & Beverage

“We are delighted to have Schneider Electric as a partner and look forward to a long & successful relationship. Besides being able to give us a high-quality production facility, they have favorably positioned us to realize our environmental vision.”

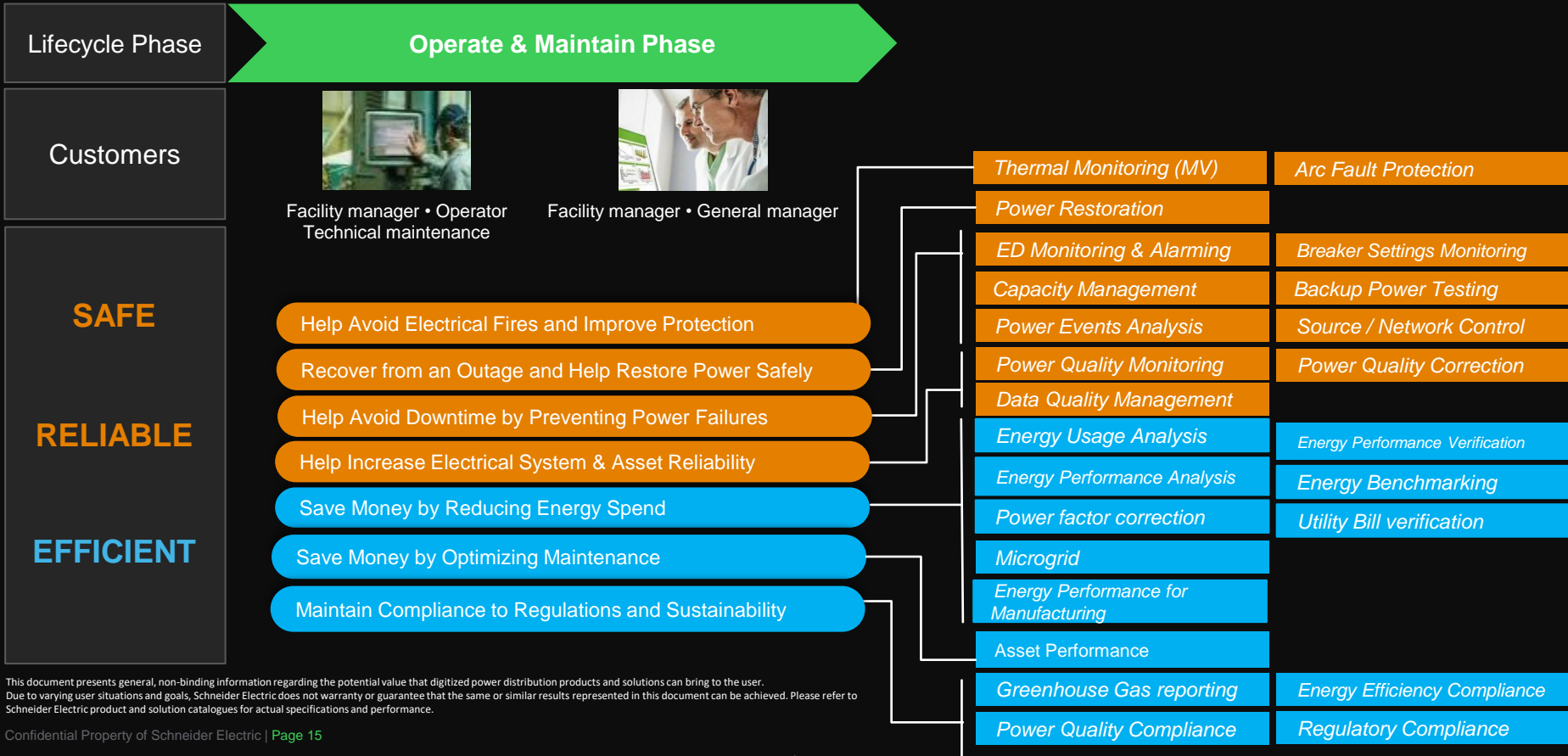
Jonas Berg,
Project Manager,
MacMyra Swedish Whisky

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Key Message to Application Mapping



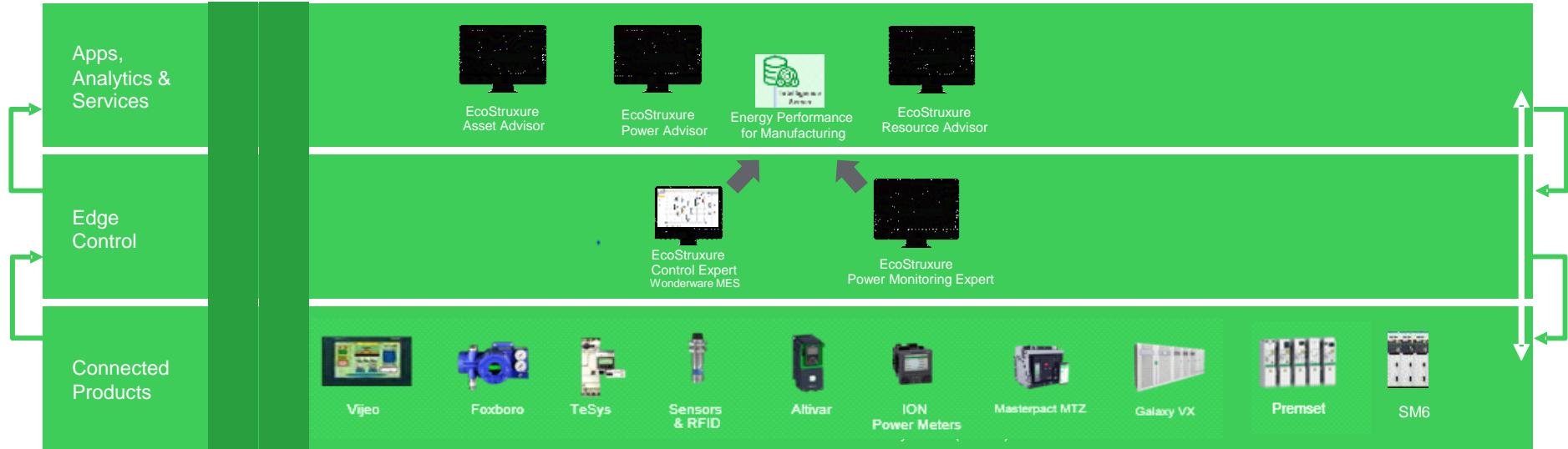
Key Message to Application Mapping



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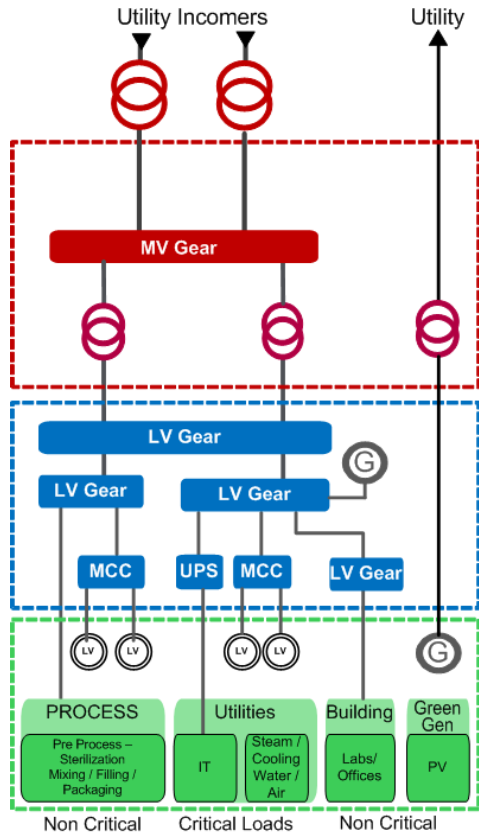
EcoStruxure Power for F&B Batch process

EcoStruxure™ Power Architecture:

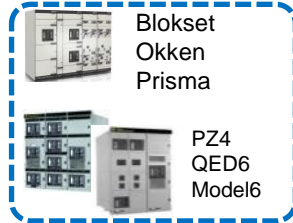


Typical Architecture for large site : F&B Batch process

Electrical



Installation



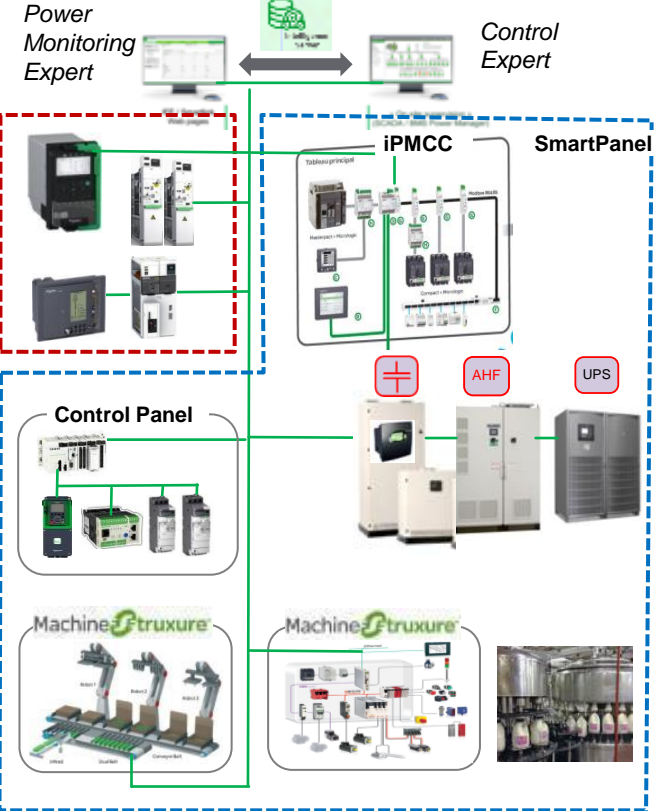
Power Busway

Power Busway

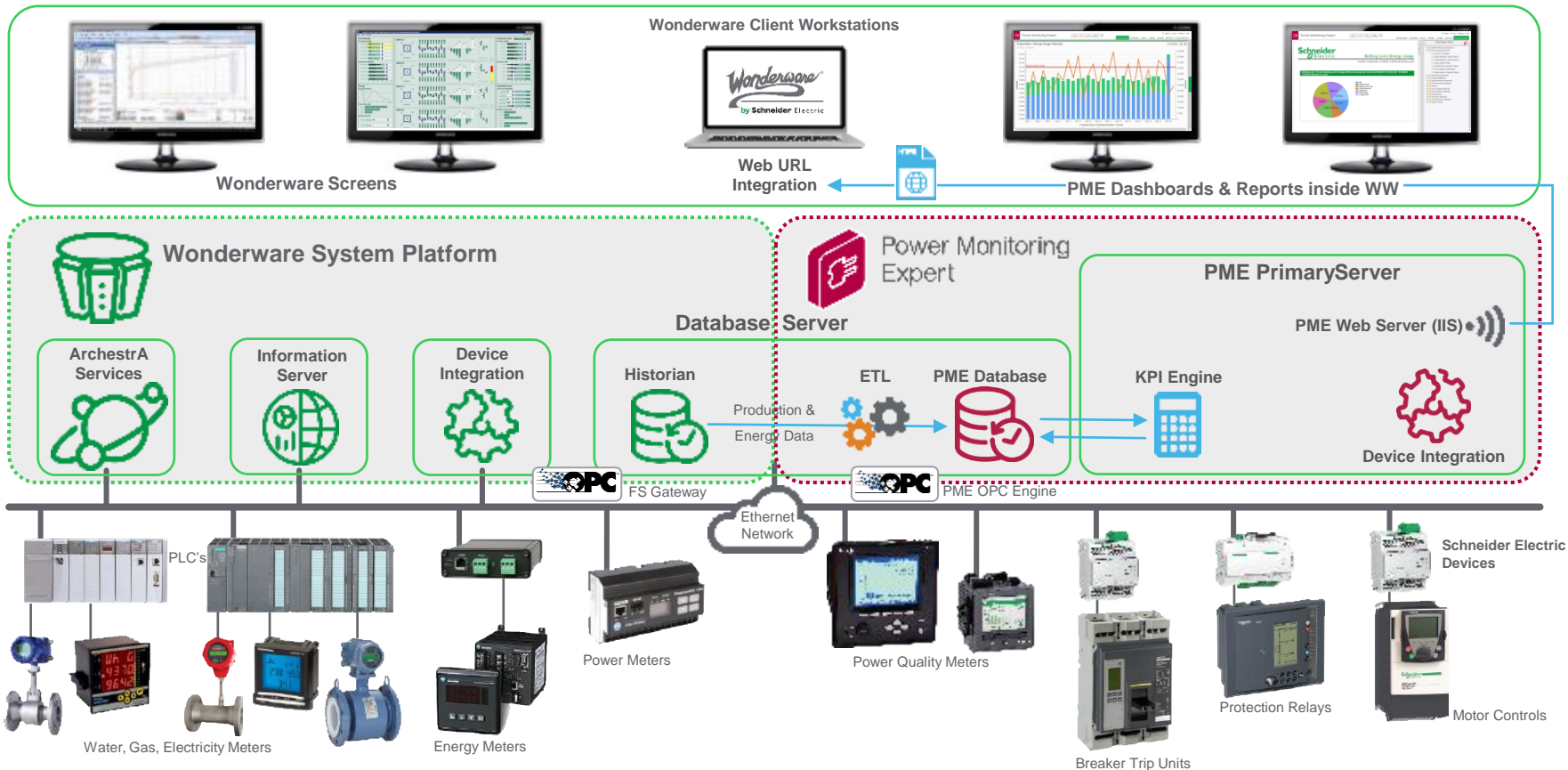
Control Panel



Digital



Energy Performance Architecture (System Platform + PME)



EcoStruxure Power for F&B Continuous process

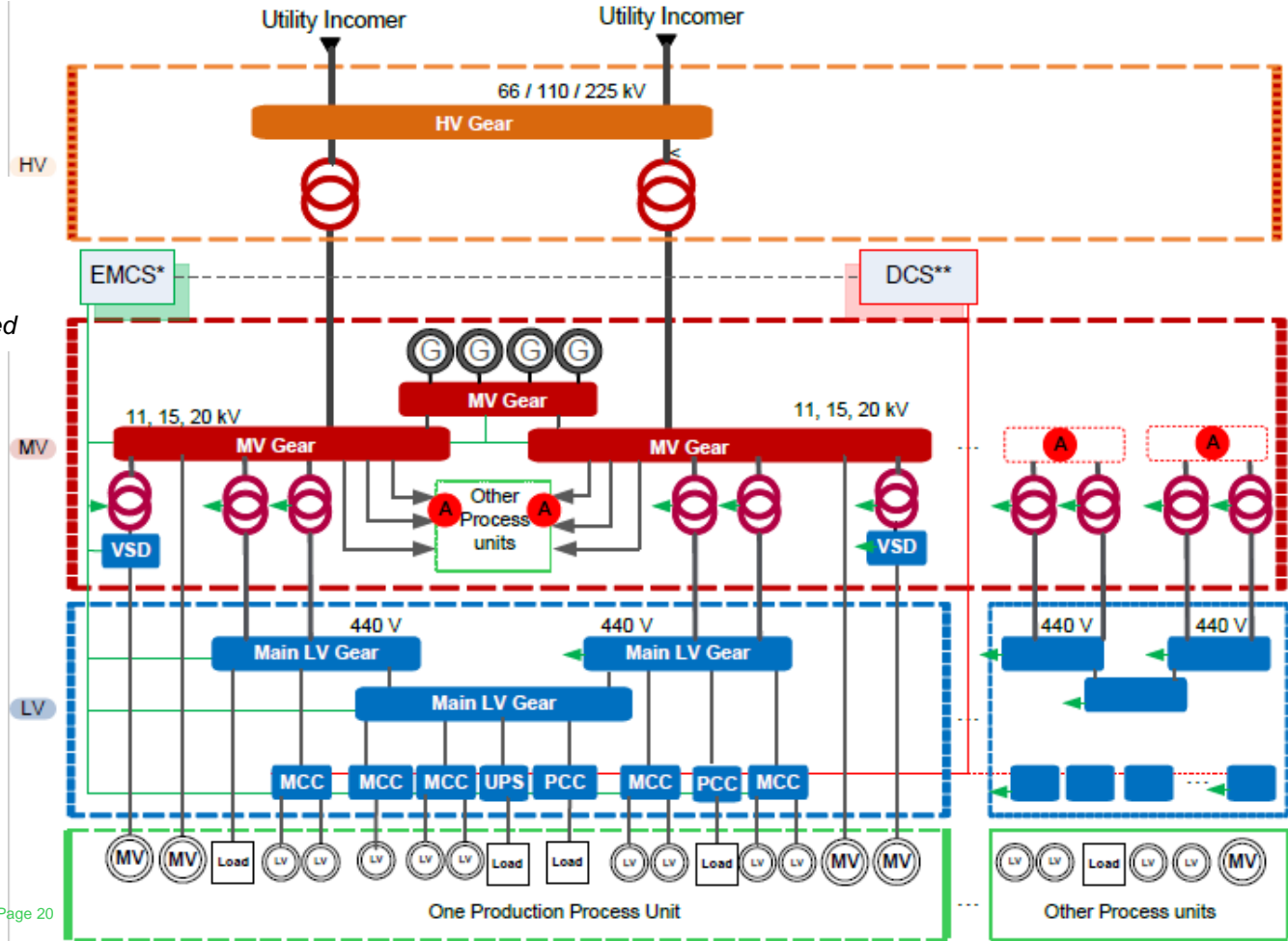
EcoStruxure™ Power Architecture:



Typical Architecture for large site : F&B Continuous process

(*) Energy Monitoring and Control System
 Nota : In Some application only Monitoring is performed

(**) Distributed Control System



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