Supporting the Sustainability goals of the Food & Beverage industry

Building a sustainable, resilient and credible Value Chain with EcoStruxure for Food & Beverage

Life Is On | Schneider Electric

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

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

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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

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… enabled by 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

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Reduce your environmental footprint and meet your sustainability goals

End to End Decarbonization

Tackle your energy challenges by creating an optimized way to access reliable, green, and resilient energy. Reduce GHG emission, scope 1, 2, 3 to address climate change

Towards **Net Zero emissions**

Efficient and sustainable operations

Meet your energy and sustainability goals and reduce costs with smart energy, water and waste management at your facilities

Up to **30%** energy cost reduction

Minimize footprint on environment

Reduce impact on the planet by helping farmers improving productivity and better managing the usage of resources. Protect agriculture and ecosystems.

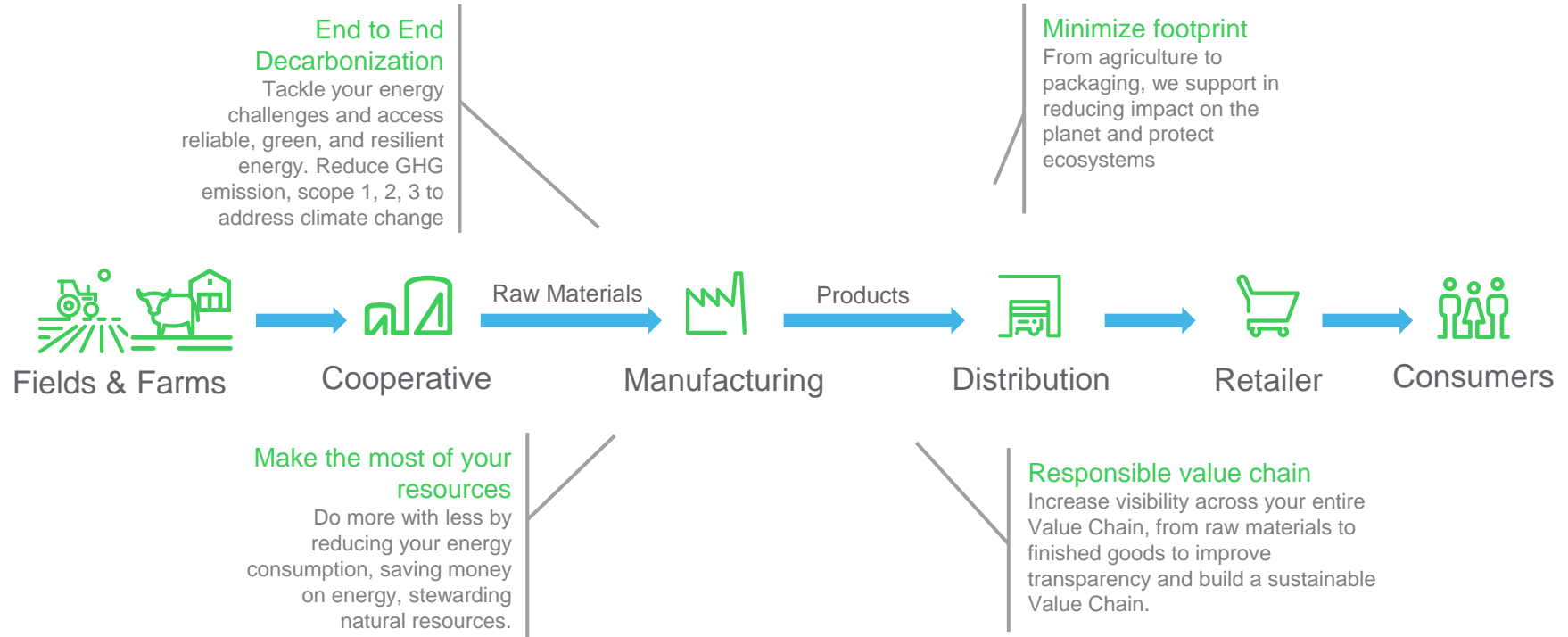For a **better future** from agriculture to packaging

Responsible Value Chain, end to end

Increase visibility across your entire Value Chain, from raw materials to finished goods to improve transparency and build a sustainable Value Chain.

Build a **sustainable** Value Chain

Energy & Sustainability

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Minimize footprint
From agriculture to packaging, we support in reducing impact on the planet and protect ecosystems

Fields & Farms → Cooperative → Raw Materials → Manufacturing → Products → Distribution → Retailer → Consumers

Make the most of your resources
Do more with less by reducing your energy consumption, saving money on energy, stewarding natural resources.

Responsible value chain
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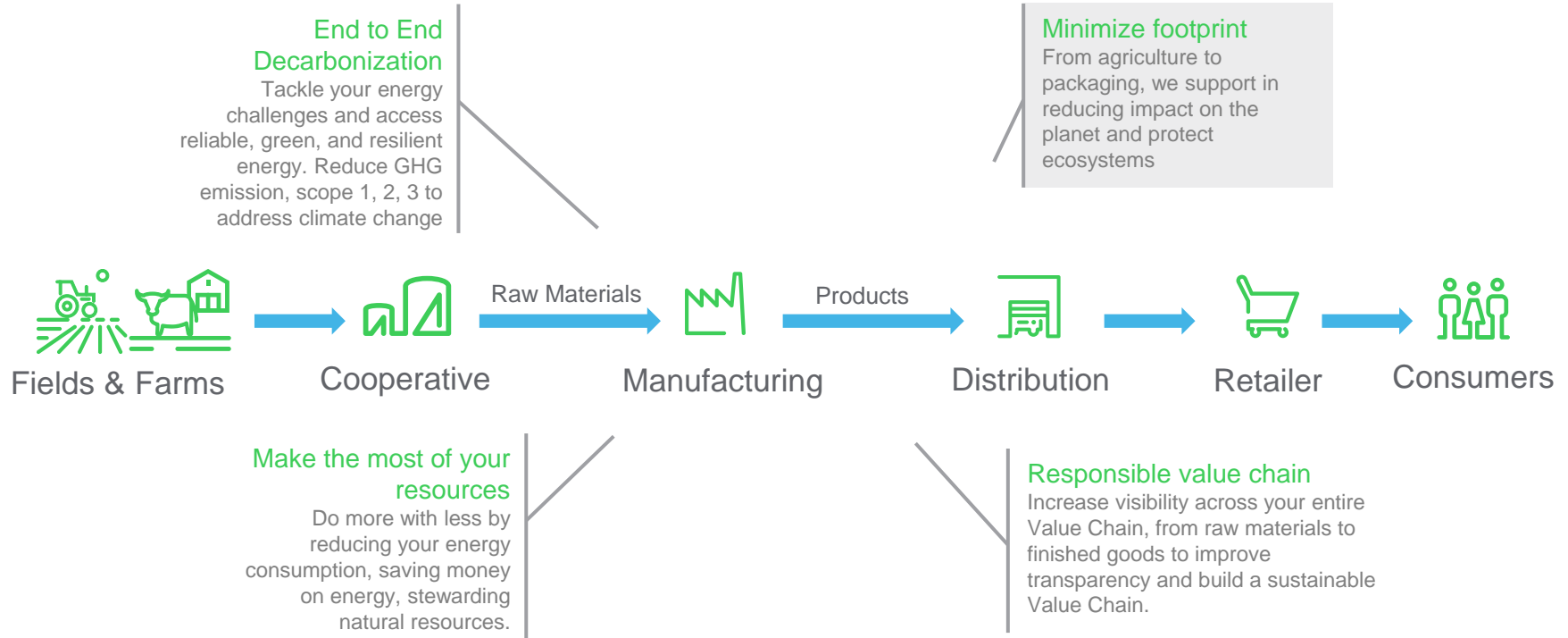# Supporting the Sustainability goals of the Food & Beverage industry

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From agriculture to packaging, we support in reducing impact on the planet and protect ecosystems

Increase agriculture efficiency and sustainability
- Agriculture irrigation & rural access to energy

Help Fish farming and aquaculture be more sustainable

New ways of farming: indoor growing

Sustainable solutions by design
- Green premium products
- Partnership with Solar Impulse foundation

Minimize footprint on environment

Help farmers improving productivity and better manage the usage of resources.

Increase agriculture efficiency and sustainability

- Improve operational efficiency through automation and software technologies.
- Optimize energy and water usage through digital solutions and associated services for reliable, flexible and sustainable systems
- Facilitate access to energy in difficult rural zones

Help Fish farming and aquaculture be more sustainable

- Enable real-time process control to achieve real-time profitability and sustainability control

Support new ways of farming

- Address the challenges of new ways of farming with an integrated solution and holistic approach to achieve optimal production while minimizing the impact on the environment

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Agriculture Efficiency & Sustainability

Main Challenges

Watch the video

Increase Productivity

- Connected sensors/IoT
- Automatization of operations
- Software solutions
- Collaborative platforms

Enhance Water

- Irrigation solutions
- Irrigation supply in off grid areas: fully automatic water pumping system to provide water at affordable cost
- Water consumption monitoring & management

Energy management

- Energy consumption management monitoring
- Access to energy in difficult rural zones
- Minigrid for agribusiness in developing areas

Use Cases

Precision Farming / Precision Crop Management

Vertical Farming and Smart Greenhouses

Livestock Management

Fish Farming Aquaculture

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Irrigation Systems, France

Perfect fit for farmers' needs

Customer Challenge
- Optimization of the complex irrigation system
- Control of the energy performance and real time maintenance management of the system in place

The Solution
- Altivar Process Speed Drive
- Real-Time, easy to understand and relevant data displayed: flow, cumulated water consumption and duration of irrigation

Customer Benefits
- Optimization of water pumping and field irrigation
- Remote control and monitoring of the irrigation system
- Digitization of the maintenance

The Results: Life is On with... Typically 35% energy consumption reduction and 20% increase in productivity

The first drive speaking the farmer's language. Key element of the connected agriculture

EcoStruxure for Food & Beverage
Innovation At Every Level

Apps, analytics, and services

Edge control

Connected products

Altivar Process

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IoT contributes to the digitization of irrigation systems

Agriculture solutions dealer, Lesieur SA, France

Customer Challenge
- Digital solution for water pumping stations and irrigation systems
- Solution enabling to connect unreachable assets in the field

The Solution
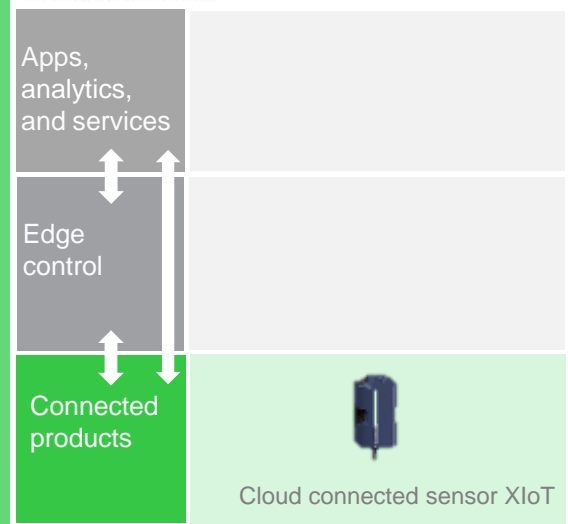- Cloud connected sensor XIoT from telemecanique sensor

Customer Benefits
- Ease of use
- Precise, reliable data provided about the installation in real time such as status of the solution so farmer can immediately place the irrigation solution to other field location
- Solution enables increased productivity and time saving
- Quick and easy to install
- Real Time Data & alarms sent to the cloud, all accessible on mobile devices
- Data can be configured to suit users requirements

The Results: Life is On with... Greater machine availability and process reliability

Link to video

Lesieur SA is a dealer of agriculture material and machine including water pumping stations and irrigation systems for farmers

Eco struxure for Food & Beverage
Innovation At Every Level

Apps, analytics, and services

Edge control

Connected products

Cloud connected sensor XIoT

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WaterForce, New-Zealand

Cloud industrial IoT solution for critical irrigation system monitoring and control

Customer Challenge
- Critical assets are remote and isolated
- Increasing regulatory requirements
- Obtaining visibility into system status and performance

The Solution
- AVEVA InSight
- EcoStruxure Geo SCADA Expert (Clear SCADA)
- SCADAPack 500E rPAC
- Altivar Process 600, Trio Q Radio

Customer Benefits
- Single integrated view of critical irrigation assets
- More efficient and effective water use
- Significant time savings

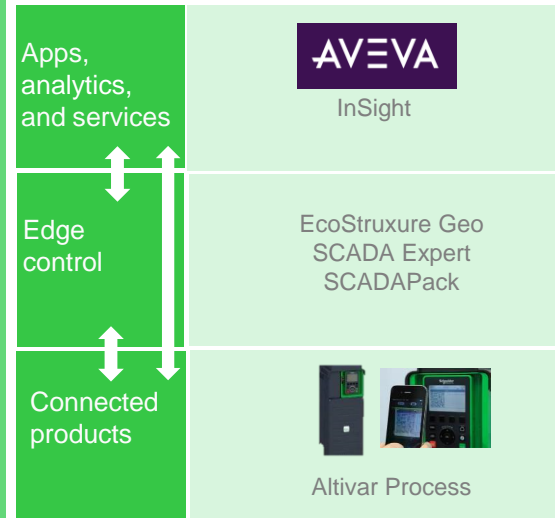**The Results: Life is On with...** 50% reduction in energy costs in the first season using SCADAfarm

"By leveraging our relationship with Schneider Electric, we can focus on our core business – effective water management – knowing that the information management, analytics and automation side is covered".

Ron McFetridge
Director, WaterForce

Link to Video
Link to Paper

Industry leading provider of smart, sustainable irrigation and water management solutions

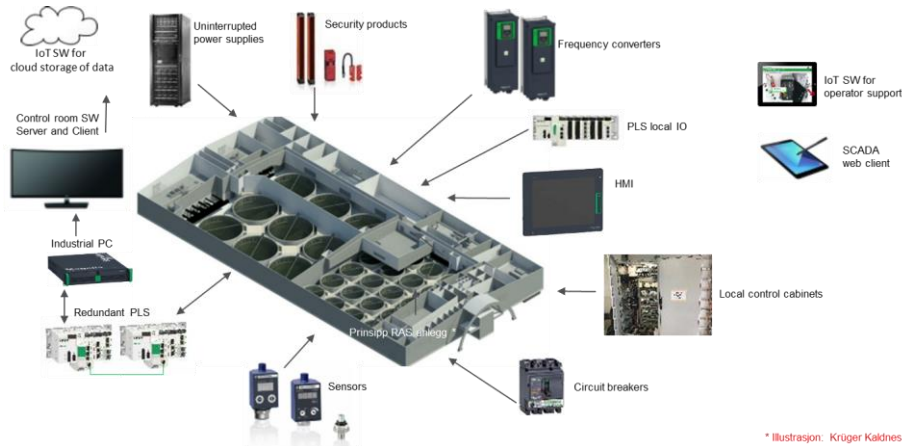EcoStruxure Innovation At Every Level for Food & Beverage

Apps, analytics, and services	AVEVA InSight
Edge control	EcoStruxure Geo SCADA Expert SCADAPack
Connected products	Altivar Process

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Solutions for Fish farming and Aquaculture

From real-time process control to real-time profitability and sustainability control

The Solution

* Illustrasjon: Krüger Kaldnes

Learn more

Business value

Better fish welfare, prevents fish death

Increased or maintained growth rate with the least amount of feed and energy consumption

Better insight and mobility. The facility notifies you via apps anytime, anywhere

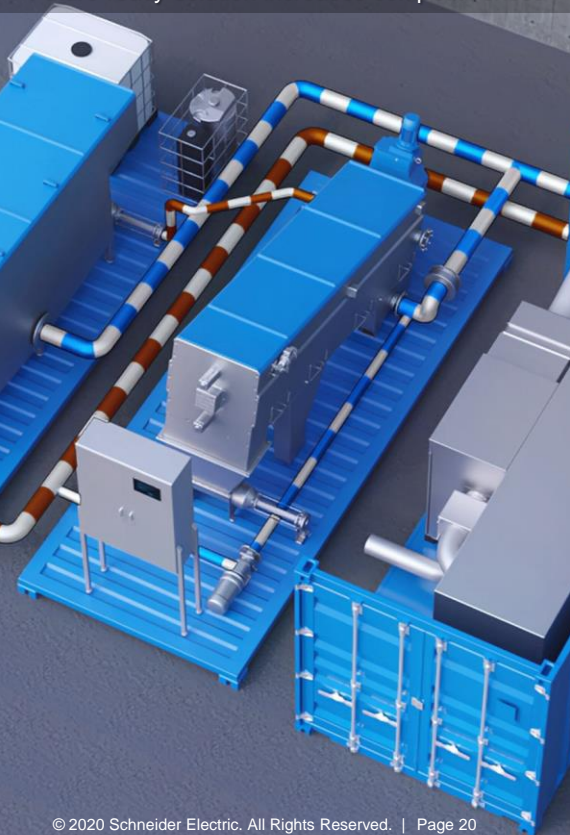Process efficient production, lower operating costs

Blue Ocean Technology

Future-ready solution increases competitiveness

Customer Challenge
Innovative solution to extract fish sludge in order to dry it for use as fertilizer.

Solution
A full EcoStruxure™ Machine solution to remotely manage sludge management/treatment in the plant and feed barges:
- EcoStruxure Secure Connect Advisor for cybersecurity
- EcoStruxure Machine Advisor to remotely monitor drives and motors, with fault notifications
- Altivar drives for pump management
- Sensors

Customer Benefits
- Increased profitability and sustainability thanks to 25% savings in maintenance, energy & resources
- Single supplier for complete hardware and software solution for automation and electrical (delivered through partner BEKAS)
- Better equipment control
- Confidence in a cybersecure plant
- Reduced downtime & OpEx using predictive maintenance
- Smaller environmental footprint than competitors
- Better informed decision-making on operations through intelligent remote control and meaningful analytics
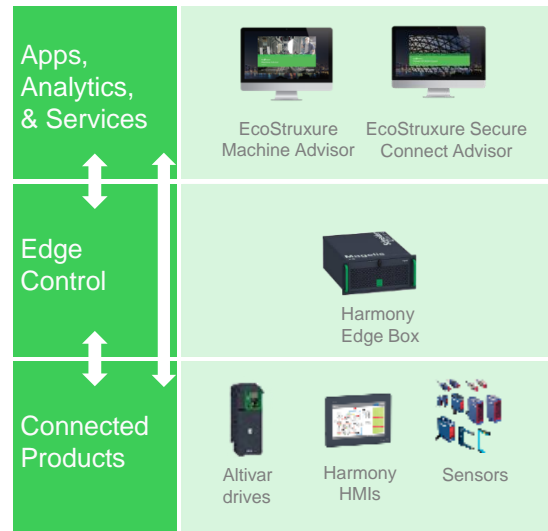
The Results: Life Is On with...
25% savings in maintenance, energy & resources for increased competitiveness

Video
HTML

Delivering a **new generation** of aquaculture sludge treatment systems for hatcheries and postsmolt facilities - and full cycle closed fish farms – on land and at sea

EcoStruxure™ Aquaculture

Apps, Analytics, & Services	EcoStruxure Machine Advisor	EcoStruxure Secure Connect Advisor
Edge Control	Harmony Edge Box	
Connected Products	Altivar drives	Harmony HMIs	Sensors

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EcoStruxure solution for sustainable and efficient fish-farming.

Norway

Customer Challenge
- Operate a big land-based RAS (Recirculating Aquatic System) modular fish-farming plant efficiently and sustainably, in natural surroundings close to a recreation area, with extra strict environmental requirements regarding noise and emissions.
- Need to ensure constant water conditions – level and quality – in a prefabricated module installed in remote locations

Solutions
- EcoStruxure™ Plant with connected products and AVEVA Software solutions, to remotely manage the whole plant
- EcoStruxure™ Secure Connect Advisor for cybersecurity
- EcoStruxure™ Power connected ACB and CCB
- Pump application Drives (ATV Process)
- Telemecanique sensors: XMLP pressure transmitters, XCS safety switches, XX ultrasonic and XS inductive sensors
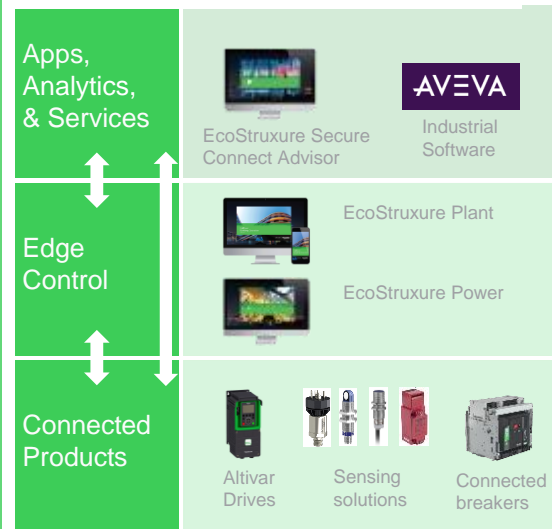
Customer Benefits
- Complete hardware and software solution for automation and electro from one supplier
- A cyber-secure plant for best possible fish-health + top productivity
- Predictive maintenance to avoid down-time and lower OpEx
- Energy and resources savings: low energy consumption and environmental blueprint
- Intelligent remote control, resulting in meaningful analytics and more informed decision-making for operations.

The Results: Life Is On with... Increased productivity and improved quality

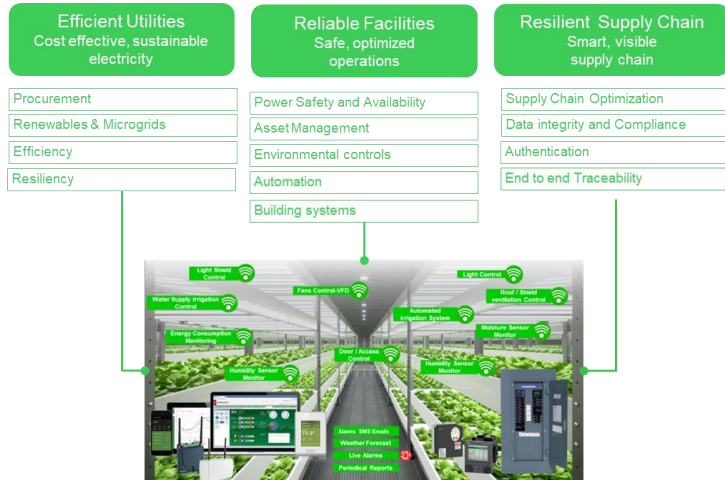A fully automatized fish-farming plant with **6000 m²** surface / 20-30 employees.

EcoStruxure™ Innovation At Every Level for Food & Beverage

Apps, Analytics, & Services
- EcoStruxure Secure Connect Advisor
- AVEVA — Industrial Software

Edge Control
- EcoStruxure Plant
- EcoStruxure Power

Connected Products
- Altivar Drives
- Sensing solutions
- Connected breakers

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Navigating the challenges for growing smarter

Temperature, humidity, light, CO2, and water/nutrients must be in balance to achieve optimal production, but they also deal with the need of a comprehensive reduction in water and energy usage

The Solution

| Efficient Utilities
Cost effective, sustainable electricity | Reliable Facilities
Safe, optimized operations | Resilient Supply Chain
Smart, visible supply chain |
|---|---|---|
| Procurement | Power Safety and Availability | Supply Chain Optimization |
| Renewables & Microgrids | Asset Management | Data integrity and Compliance |
| Efficiency | Environmental controls | Authentication |
| Resiliency | Automation | End to end Traceability |
| | Building systems | |

Business value

- Reach full production potential with highest quality possible

- Prevent food loss and waste to reduce operating costs and maximizing profitability.

- Carbon emissions reduction

- End-to-end traceability

Learn more

20x greater yield

than a traditional plantation, leveraging automation technologies.

"We could not have come as far as we have without the support and progressive nature of Schneider Electric."
– David Soo, CEO of Australian Vanilla Plantations

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Australian Vanilla Plantations

Boosting crop yield through automation

Customer Challenges
Create and tightly control an artificial environment to maintain optimum growing conditions: light, temperature, humidity, watering

The Solution
Schneider Electric's reputation for high quality and reliability are the main reasons why Australian Vanilla Plantations chose to install an EcoStruxure Plant solution with the Modicon M172 PLC and Altivar Process variable speed drives. These products deliver the automation and efficiency essential for maintaining the ideal growing conditions for the vanilla orchid's beans.

Customer Benefits
- Increased efficiency and reduced operational costs due to the automation of processes such as ventilation, water misting, temperature control
- Remote access capabilities which allow the team to receive alerts and monitor conditions when offsite
- Improved reliability in a harsh environment
- Optimized growing conditions through data analysis to constantly adjust and improve growing capabilities

Life Is On with... 20x greater yield than a traditional plantation, leveraging automation technologies

"We could not have come as far as we have without the support and progressive nature of Schneider Electric."

David Soo
CEO of Australian, Vanilla Plantations

Link to Paper

Innovative vanilla producer uses **advanced** research and automation to cultivate the highly **prized** beans

Eco truxure for Food & Beverage
Innovation At Every Level

Apps, analytics, and services

Edge control

Modicon M172

Connected products

Altivar Process variable speed drives

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Agro-Invest, Russia

The fastest growing modern greenhouse complex to grow fresh vegetables.

Customer Challenge
- Improve operational efficiency and reduce energy-related costs
- Ensure electrical network reliability and reduce downtime
- Optimize equipment utilization and reduce the cost of operations

Solution
- EcoStruxure Power Monitoring Expert
- Integration of existing power meters, relay protection and MES
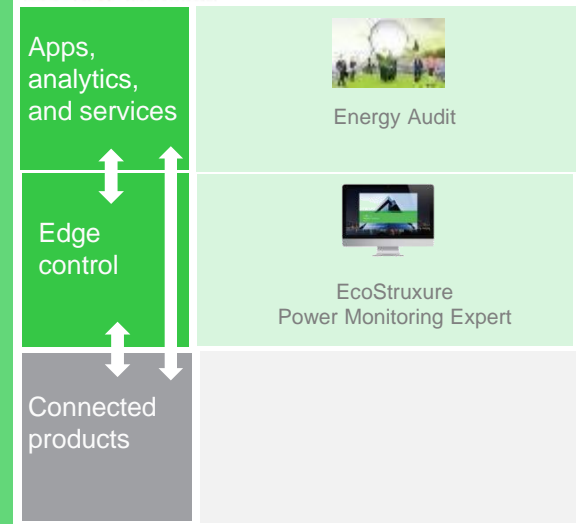- Service expertise to develop Energy Efficiency improvement

Customer Benefits
- Simple and fast project delivery due to easy integration of existing devices and systems
- Visible impact of temperature, occupancy, or production values on energy usage
- Reliable, flexible and customized tool that help achieving energy saving targets
- Energy efficiency increase and emissions reductions
- Full utilization of the Energy assets

The Results: **Life is On with...** Proactive management of the Energy cost and usage

80 hectares of modern greenhouses. Over 25 varieties of vegetables every year and annual capacity of 35,000 tons.

EcoStruxure Innovation At Every Level for Food & Beverage

Apps, analytics, and services	Energy Audit
Edge control	EcoStruxure Power Monitoring Expert
Connected products	

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Sustainable performance by design

Schneider Electric offers and solutions contribute to minimize footprint on environment

Achieve sustainable performance by design

- Reduce your energy consumption, save money on energy and reduce your overall impact on environment with Schneider Electric Green Premium portfolio of products, services and solutions.

Solutions labelled Solar Impulse

- Check the Schneider Electric solutions labelled Solar Impulse that contribute to protect the environment.
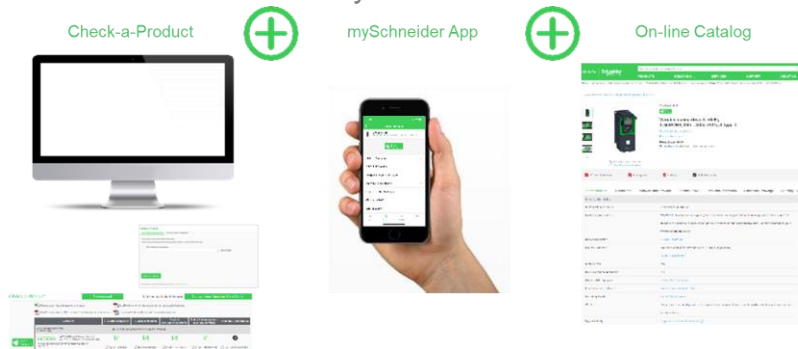
The new Green Premium label

Reduce your energy consumption, save money on energy and reduce your overall impact on environment

The solution

The Green Premium label is based on three pillars:

- **Resource performance:** improve resource-efficiency throughout an asset's life cycle.

- **Circular performance:** optimize the total cost of ownership of assets.

- **Well-being performance:** best protect their people from environmental risks they face.

Check-a-Product ⊕ mySchneider App ⊕ On-line Catalog

Business value

- **Compliance and superior transparency.** Reliable information on regulated substances present in products, their environmental impact and circular instructions.

- **Superior business value (Well-being performance, Resource performance, Circular performance)** Tailored value propositions which provide differentiation for our products, solutions, and services.

- **Differentiating with claims and external labels** Validation by leading third party labels increases the credibility of our products' environmental profile to our customers.

Learn more

Partnership with Solar Impulse Foundation

Contributing with labelled solutions to protect the environment

SOLARIMPULSE FOUNDATION | Schneider Electric Foundation OFFICIAL PARTNER

- Signature of a 4-year partnership between the Schneider Electric Foundation and the Solar Impulse Foundation

- 5 labeled solutions Solar Impulse, including:

  - EcoStruxure Microgrid Advisor (EMA)

  - New Energy Opportunities (NEO) Network

  - EV Link Load Management System

  - Altivar Process services oriented drives

  - Altivar variable speed drives for pumps with photovoltaic arrays

6 CLEAN WATER AND SANITATION   7 AFFORDABLE AND CLEAN ENERGY   9 INDUSTRY, INNOVATION AND INFRASTRUCTURE   11 SUSTAINABLE CITIES AND COMMUNITIES

Bertrand Piccard, Président de la Fondation Solar Impulse, et Jean-Pascal Tricoire, Président-Directeur general de Schneider Electric et Président de la Fondation Schneider Electric

The Schneider Electric Foundation partners with the Solar Impulse Foundation. 25 June 2019

- Faced with the environmental emergency, the Solar Impulse Foundation launched a race to select 1,000 profitable solutions in favor of sustainable development and present them to decision-makers in order to speed up their implementation as soon as possible.

- The Schneider Electric Foundation wants to help accelerate the detection and selection of these solutions by making the Group's experts available and by helping to intensify the effort.

Learn more

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Sources: Press release June 2020; Press release Sept 2020; Solar Impulse Foundation, 2020

Reduce your environmental footprint and meet your sustainability goals

Let's engage in this journey!

- Towards Net Zero

- Doing more with less

- Minimizing impact on environment from agriculture to packaging

- Building a responsible and sustainable Value Chain, end to end

- Communicating sustainability goals, projects and achievements with all company stakeholders.

Up to **50%**
energy cost savings

Up to **-5%**
of OpEx savings

Up to **40%**
CO_2 footprint reduction.

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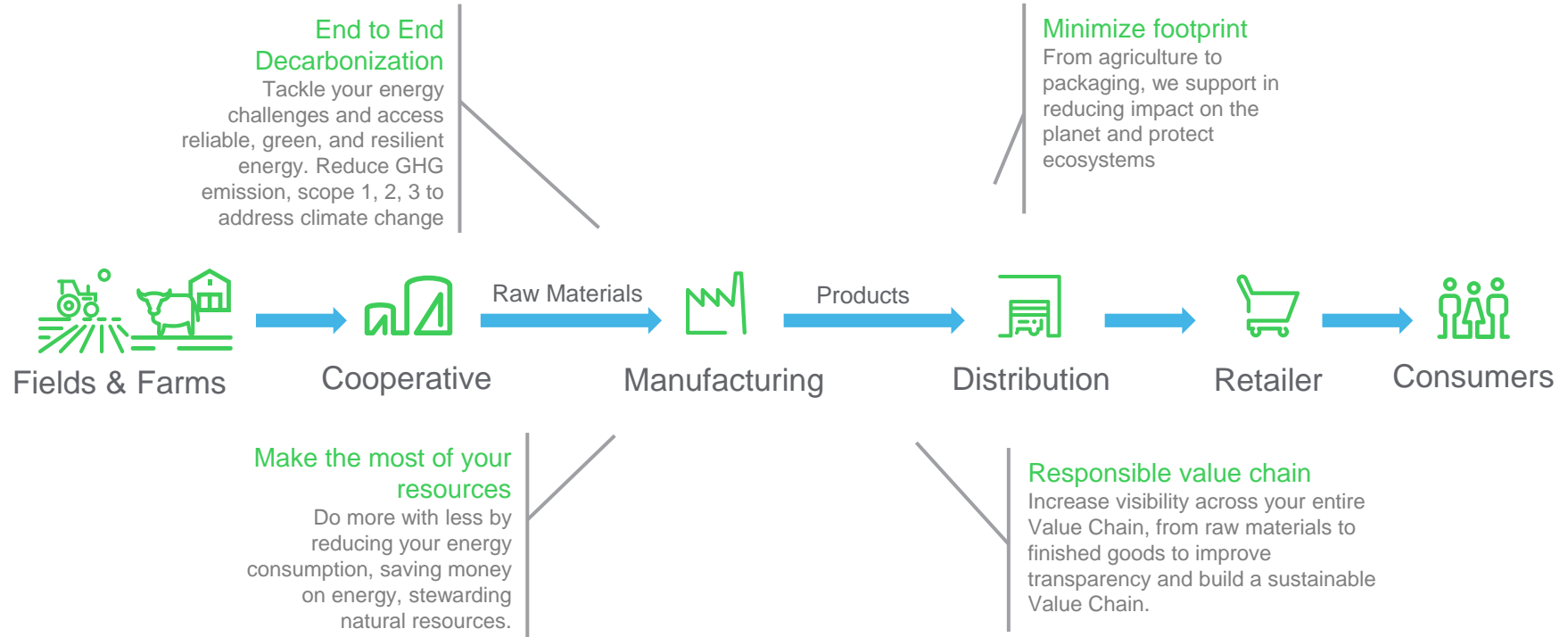For a **better future** from agriculture to packaging

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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

Let's talk about

Eco truxure™
Innovation At Every Level

for Food & Beverage

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