Microgrid The technology enabling the new energy landscape

Schneider

Life Is On

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Speaker's Biography



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Our purpose is to empower all to make the most of our energy and resources bridging progress and sustainability for all

At Schneider, we call this Life Is Un



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Our actions towards a Sustainable Future

Our contribution to sustainability is unique because we play on both sides of the equation

#1. Leading by example in our ecosystem



#2. Being part of the solution for our customers

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What differentiates us is that not only do we act sustainably, we also help our customers become more sustainable

Three dimensions – Energy Triangle

Security of Supply

Energy Affordability

Environmental Sustainability

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Extraordinary measures - Reduce Electricity Consumption A measure for households to energy-intensive industry

THE COMMISSION PROPOSES:



A target for Member States to reduce overall electricity demand by at least 10% Demand during peak hours 5%

An obligation for Member States to reduce demand during peak price hours by at least 5% Governance should select on average 3 to 4 hours per weekday to reduce demanduntil March 2023

Member States will be **free to choose the measures** to achieve this demand reduction. In particular, they should consider economically efficient and market-based measures such as auctions or tender schemes for demand side response or electricity not consumed.

By reducing electricity demand by **5% at peak** times, we **reduce** gas use for power by around 4% over the winter and reduce pressure on prices





Scheduled power cuts



2022 European Commission, #SOTEU

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Microgrid The antidote of the energy weaponization

DGTA



Microgrid – the key technology enabling the new energy landscape

A local electrical distribution network with **Distributed Energy Resources(DER)**: generation, storage and flexible loads interconnected and coordinated by **intelligent management systems**



Energy that is Smartly produced, Locally Generated and Efficiently Consumed

generation + storage + flexible loads

Sustainability

Reliability / independence

Savings and earnings

Microgrid differentiation lies in combining multiple values



EcoStruxure Microgrid- maximize the outcomes of DERs



Why Microgrids with energy storage can meet Greece's RES Targets?

Driver # 1: Sustainability

Microgrids helps integrating Energy Storage & Renewable resources. Key solution for companies to decrease their scope 1, 2 emissions

Driver # 2: Resilience

Electrical networks are impacted by climate change effects & grid congestion, so onsite generations are essentials for increasing sites' resiliency and continuity of productivity

Driver # 3: Optimize energy expenditures

Hedge against volatile prices & diversity of energy sourcing risks. Get revenues from energy markets and/or increase selfconsumption

Driver # 4: Clean energy to the Islands

Microgrid is the key technology for universal access to Green energy. Ensures system stability whatever the system configuration (Grid or NI)





Consumers become Prosumers – New energy policy

Consumers shall be able

- to consume, to store and to sell self-generated electricity to the market
- to participate in all electricity markets by providing flexibility

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te the system

to participate in all forms of demand response

Microgrids enable the achievement of these goals and thus contribute to an efficient, sustainable and reliable energy supply

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Different Sizes of Microgrids

Energy that is Smartly Procured, Locally Generated and Efficiently Consumed



Microgrid innovative projects Successfully designed, built and maintained microgrid projects worldwide

#SpreadAwareness, #MicrogridSolutions



Microgrid Customer References



350+ ECX Microgrid Projects globally **900+** Electrification projects

80% of EMS projects with PV

67% of EMS projects with BESS

Successfully designed, built and maintained microgrid projects worldwide.

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Lidl Finland Logistics Center

- First Commercial Industrial Microgrid solution in Finland
- Participating in the Frequency Regulation market: BESS provides 1 MW for the FR
- Using heat recovery services to reuse excess heat on the site



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Type: Industrial facility, gird connected Location: Finland Size: 4 MW

Customer Challenge

- To build a flexible, future-proof, environmentally friendly and energy-efficient new logistics center in Finland
- Ability to optimize heating and cooling and to participate in Demand Response markets for energy with a microgrid solution for solar energy
- BREEAM excellence award for the building

Solutions

- EcoStruxure Microgrid Advisor and PPC
- **EcoStruxure Building Operation**
- eValvomo (cloud service for remote monitoring)

Customer Benefits

- 100% renewable energy sources
- CO2 emissions cut by 40%
- The logistics center uses 50% less energy than current two operational centers
- A lifecycle optimized solution for future expansion

"We value the fact that Schneider Electric can offer an energy efficient and flexible solution that integrates our many facilities into one integrated system that serves us throughout the lifecycle of the

Press release (in Finnish) **EMA Leaflet on Frequency Regulation**



Eco Struxure for Building

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eValvomo (cloud

EcoStruxure Microgrid Advisor

EcoStruxure

EcoStruxure

AS controllers

Innovation At Every Level

Apps,

Analytics.

& Services

Control

Connected

Products

South Australian Produce Market

The largest private solar PV system for Adelaide's biggest whole fruit and vegetable market



Large Sites/ Wholesale & Retail Trade

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Type: Islandable Location: Pooraka, South Australia Size: 4.3MWh lithium-ion batteries, 2.5MW solar PV system and a 2.4MW on-site diesel Generator

Customer challenge

- Reduce energy costs and pressure on the grid and increase reliability in case of a power outage
- SAPM install 2.5 MW solar system and a large lithium-ion battery, that will cut power bills by >\$500k a year. The \$10.5m microgrid received a \$2.5m State Government Energy Productivity Program grant.
- The system supplies all of the wholesale market's energy needs and feeds surplus power into the grid.

Schneider Electric and AZZO's Solution

- The operational strategy and controls are being developed by EcoXpert AZZO
- Schneider Electric provided EcoStruxure Microgrid Advisor, cloud-based optimization and analytics platform
- M580 PLCs, Micrologic MTZ LV breakers, ION and PowerLogic metering, SEPAM HV relays and Power SCADA Operation Edge Control software, are embedded into the existing EcoStruxure Power Monitoring Expert platform and metering solution

Customer Benefits:

- Lower energy costs by **\$4.3M** over 10 years
- Improve energy reliability and security
- Reduce annual greenhouse gas emissions by 32%

SAPM Testimonial SAPM Customer Story

"We needed to have our own destiny in our own hands. And we got that thanks to Schneider," CEO of SAPM

for Wholesale

Ecostruxure PowerSCADA

Operation

Power Monitoring Expert

Power

Schneider

PowerLogic

Meters

EcoStruxure Microgrid Advisor

DER Study

Eco **3** truxure

Innovation At Every Level

Apps, Analytics,

Control

Connected

Masterpact

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Air Circuit Breakers Meters

Products

& Services

Learn more about Microgrid Solution... at the Innovation Talk Webinar



Microgrids & EU Green Deal October 11, 2022

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Spread Awareness

Good for planet Earth **Good for** humanity & business

"In the face of weaponisation of energy, we need a collective effort of solidarity in order to build a more secure and sustainable Europe."

"Flexibility is the key element for future power systems to cope with the volatility of energy consumption and production."

"A future regulatory framework with enhanced customer inclusion would give signals to the citizens to experience cheap Renewable Energy"

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How can we absorb the Trillions of money in the most efficient way in order to get projects done and feel their positive results...

The Question is...

...before it's too late?

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