

## TOPIC BRIEF: Meeting with key market players

The following topic brief summarizes discussions held during a transnational exchange sessions among ALPGRIDS project partners. It aims at providing the main outcomes of the discussions. Each topic brief focuses on one specific development topic for microgrid solutions in Alpine regions. Topics that were addressed within the framework of the project are documented at <https://alpine-space.eu/projects/alpgrids/en/project-results/wp-t1-creating-a-common-and-shared-understanding-of-microgrids>

**Date:** 15 April 2021

**Coordinator of the exchange session:** AURA-EE

---

### What is the topic about?

Two global solution providers **Schneider Electric** and **Siemens** met with ALPGRIDS Project Partners during two dedicated online exchange sessions in order to share their perspectives about the market for microgrid solutions in Europe and their own experience.

### What is at stake?

The following points were shared and discussed with each company:

- Definition of microgrids
- Microgrid perspectives in Europe
- Value proposition of both companies
- Examples of business cases

### Solution providers' insights

Each solution provider kindly accepted to share its vision and valuable experience in Europe, hence contributing to a common understanding about microgrid solutions.

Their presentations are available here:

[Schneider Electric](#)

[Siemens](#)

## ▪ **Microgrid definition:**

There is now a shared definition of microgrids:

- It is a combination of production sources, energy storage and flexible loads within the same territory or defined boundaries (where everyone is interconnected). It is a scaled-down version of the centralized power system that generates, distributes, and regulates the flow of energy.
- Main energy is electricity but complementary sources can be integrated (through CHP, H/C devices)
- Although microgrids were historically used for off-grid applications, it is now widely admitted that they can operate either grid connected or islanded and, if required, can switch between the two.
- The disconnection /reconnection capability provides a lot of flexibility both to the microgrid operator and to the transmission & distribution grid operators. It requires robust technology capabilities in order to ensure power quality and reliability standards are met.
- Standard backup systems are not considered as microgrids.

## ▪ **Market perspectives in Europe:**

Microgrids are becoming increasingly common in Europe, driven by the EU Green Deal and the new energy landscape.

Key driving forces include :

- Growing electricity needs & transition to e-mobility
- Local RES production & network integration
- Energy autonomy supported by growing demand from civil society
- Corporate sustainability goals
- Need in some Alpine valleys for more resilient energy systems
- More enabling policies supporting local initiatives (e.g. collective self-consumption)

Some roadblocks exist :

- Regulation still missing/hindering
- Some technical standards missing
- Lack of common understanding about microgrids and their benefits (e.g. microgrids not yet integrated into regional & local climate & energy plans)

Market segments:

- 4 market segments can be identified:
  1. **Off-grid facility owned by single owner** (isolated hotel, remote military base, remote mines, .)
  2. **Off-grid community** (island, remote village, .)
  3. **Grid-connected facility owned by single owner** (single commercial building, hospital, industrial facility, campus,.)
  4. **Grid-connected community** (industrial & business parks, local energy community, eco-district,.)



source: Schneider Electric

## Value proposition of companies

- Both companies have developed a complete product & system offering addressing the various market segments (grid-tied and off-grid), providing solutions for modeling & operating microgrids and for monitoring, managing & optimizing DERs and energy network.
- Product & system portfolio are indicated in the above presentations.
- The companies offer turnkey solutions supported by a set of services supporting the whole lifecycle of the project during the design, installation, operation and maintenance phases.

## Examples of business cases:

- SCHNEIDER ELECTRIC presented the **IMT smart campus** project in Grenoble/FR, concerning market segment 3 above.

Main drivers were:

- better integration of local energy generation
- management of multiple energy flows (electricity, water and heating in a complex multi-building project)
- energy optimization according to usage demand and electricity tariffs

The company implemented a complete turnkey solution based on its EcoStruxure TM system.

Customer Benefits included:

- a microgrid "living lab" of nearly 3000 people
- 15% of the energy consumed is provided by local energy sources
- up to 30% reduction of the grid energy consumption

- SIEMENS presented the **Water Plant Hassfurt** project in Germany, concerning market segment 3 above.

Main drivers were:

- Demand for an innovative & sustainable concept for the energy supply

- Ensure continuous water supply for the population same time ensuring high level of water quality
- Integration and full control system of different energy assets for a critical infrastructure

The company implemented a complete turnkey solution based on its Microgrid Control solution and SICAM application.

Customer Benefits included:

Technical benefits

- Transparency of data from generation, consumption and storage
- Fully-automated managing of the assets, control and decoupling of the water works plant grid in a blackouts
- Automation and digitization of the entire energy system

Commercial benefits

- Financing solution for storage facility
- Reduction of cost based on consumption optimization
- New revenue source from energy market participation
- Reducing the CO2 footprint

- ❖ SIEMENS presented the **Lemene Commercial Campus** project in Finland, concerning market segment 3 above.

Main drivers were:

- Optimization of energy costs through the lowest cost generation mix
- Self sufficiency and energy efficiency leveraging photovoltaics, CHP and battery storage
- Advanced Microgrid functionality such as demand charge reduction, energy market participation, ancillary programs such regulating power, and islanding from the grid.

The company implemented a complete turnkey solution based on its Microgrid Control solution and SICAM application.

Customer Benefits included:

- Optimizes energy production and self sufficiency considering heat and electricity demand
- Provides resilience through black start capability, seamless island transfer and operation
- Increase revenue stream by enabling energy and frequency regulation markets participation

#### ▪ **Contacts:**

##### **SCHNEIDER ELECTRIC**

FRANCOIS BORGHESE: [FRANCOIS2.BORGHESE@SE.COM](mailto:FRANCOIS2.BORGHESE@SE.COM)

OLIVIER MEURANT: [OLIVIER.MEURANT@SE.COM](mailto:OLIVIER.MEURANT@SE.COM)

##### **SIEMENS**

TOBIAS TEPE: [tobias.tepe@siemens.com](mailto:tobias.tepe@siemens.com)

MARKUS REISCHBOCK: [markus.resichboeck@siemens.com](mailto:markus.resichboeck@siemens.com)

*If any further information, please contact: [patrick.biard@auvergnerrhonealpes-ee.fr](mailto:patrick.biard@auvergnerrhonealpes-ee.fr)*