

TOPIC BRIEF: **Pilot data sharing**

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: 10 February 2021

Coordinator of the exchange session: AURA-EE

What is the topic about?

Pilot data collection, processing and dissemination: processes and tools being used by project partners within their pilot activities in order to contribute to the development of Alpine microgrid economic models and governance models.

What is at stake?

Data availability, data processing, data accuracy, data ownership and data relevance for dissemination to stakeholders.

Partners' experiences

Project Partners were able to share their valuable experience in previous projects:

- Microgrid in rural area: insights from the PEGASUS MED project: presentation available [here](#)
- Smart Poly Generation Microgrid project & Smart Energy Building projects at the Savona Campus: presentation available [here](#)

Partners' insights?

Project partners shared [their experience](#) within the framework of current pilot activities:

Data acquisition (energy consumption, production, storage parameters, etc.).

Energy data:

- can be measured by data collection & monitoring solutions (smart communicating meters, meter sensors, RTU, SCADA system)
- can be estimated based on national standards and literature review
- can be simulated (e.g. PV production)
- can be provided by DSOs through dedicated energy consumption information portals (e.g. Moj elektro in Slovenia)
- data sampling time varies (e.g. 1, 5 or 15 min)
- measurement period taking into account seasonal effect (e.g. one year)

Data processing:

- Acquired data need to be processed in order to design the microgrid making use of tools such as Matlab, Simulink or simple spreadsheets
- Energy Management Systems are key for operating and maximizing operational conditions of the microgrid (several technology suppliers: Siemens, EOS Power solutions, Schneider Electric, etc.)
- Smart battery management systems in case of storage
- Energy managers are needed to operate the systems

Data accuracy:

- Need to assess data quality and check missing or abnormal values

Data ownership:

- Especially in the case of load consumption analysis. Reach agreement with data owner or use aggregated data

Take away messages:

- No-one fits all microgrid solution thus requiring detailed scoping (goals,) and advanced system architecture design activities;
- Off the shelf EMS not always the most effective solution: need to be based on own needs
- Implementing collective self-consumption schemes requires advanced energy data sharing
- Data needed to establish economic models should be defined taking into account a common set of indicators so as to enable a comparison between the different models:
 - o Investment and operating costs over the complete useful life of:
 - PV system (€/ kWp and/or €/kWh)

- Storage investment costs (€/kW and €/kWh)
- Any new infrastructure (e.g. connection cables and switchboard) and any equipment (including EMS) to be installed in the microgrid
- Tariff and their components (energy, transport duties, taxes) of electricity consumed from the grid by the microgrid (if not self-sufficient)
- Price of electricity locally generated and consumed in the microgrid
- Any incentive, subsidy or grant available in implementing a microgrid
- Internal Rate of Return of all the investment required by the establishment of the microgrid.

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