PLAN.
INNOVATE.
ENGAGE.

ETIP SNET
EUROPEAN TECHNOLOGY AND INNOVATION PLATFORM
SMART NETWORKS FOR ENERGY TRANSITION

Identification of main recommendations from projects' presentations and roundtables' discussions – Day 1

Reliable, economic and efficient smartgrid system

- Field data are needed to have an accurate forecast
- **Forecasting standards are needed** to respond to interoperability problems
- **Developing innovative business case** for the benefits/value proposition of all involved stakeholders (Aggregator, DSO, Utility supplier, Consumer)
- Efficient ways have to be identified to **motivate consumer** to become energy active consumers/prosumers (Introducing local ambassador, developing easy to use platforms and make evident the economical benefits)
- **Regulation needs:**
    - Harmonization between EU28 countries
    - Develop a homogeneous framework for the participation of the demand side
    - Develop new markets (heat) and allow the participation
    - Focus on services more than products and think services based on value chain creation (*vs* grid operation architecture). To do this we need to bring enabling technologies on ICT and IoT level
- Integrate in the design stages of plant and installations provision to participate to the demand side management (energy and heat)

Storage technologies and sector interfaces

Conclusive "facts"

- Losses in MV- and LV-grids can be reduced significantly with the right MV- and LV-storage design and operation
- Self-consumption can be increased up to 67% (of which 26% by storage) and by that: savings of 25€/month (but no payments for PV capacity paid for by prosumers demo)
- Batteries can be used (Up to 1 hour long proven) for islanding operation of LV and MV.
- Interoperability and related SW are not yet available
  - No plug-and-play yet (e.g. thermostats and heat pump) for residential sector
  - The communication signals for Inverter and DSO operation may be conflicting (frequency of signals);
- Costs for control and communication is too high (for mass use). Masses of use cannot afford such high costs; costs must be reduced;
- Valorisation of storage must be clarified for everybody involved.
- Storage efficiency is low with losses increasing: additional energy may be needed for cooling + heating which may increase GHG/CO2- emissions
  - The country specific starting point may be very different, case-dependent.
- More Demonstrations are needed for CAES (TRL must be increased; is still too low)
- Commercial business case for CO2-neutral, liquid methanol is already given. But big equipment cannot be funded any more (too high capex, goes up exponentially for larger equipment)
- GHG accounting in the context of CO2-neutral Methanol production must be clarified.

Storage technologies and sector interfaces

Technology:

- **Model based predictions are key; Preference of people are hard to capture – very difficult control strategy.**
  - Thermal storage technology challenges: Time lags of thermal parts must be considered in the right way
  - Aggregation and aggregators is not yet widely understood by the consumer and market

Fundamental issues:

- **The legal basis for the demos:**
  - Ownership of ESS still unclear;
  - There are no incentives yet for implementation of ESS based emergency solutions by DSO
  - Some countries: No legal basis for Energy Community given; DSO cannot own or operate batteries; this must be clarified
  - The demos must be done with the right Research beforehand?
- **Systems perspective is key; Who invests needs to have the right incentives from the regulatory point of view.**
  - Control of system should adapt to legislation.