

H2020 Smart Grids and Storage projects clustering workshop

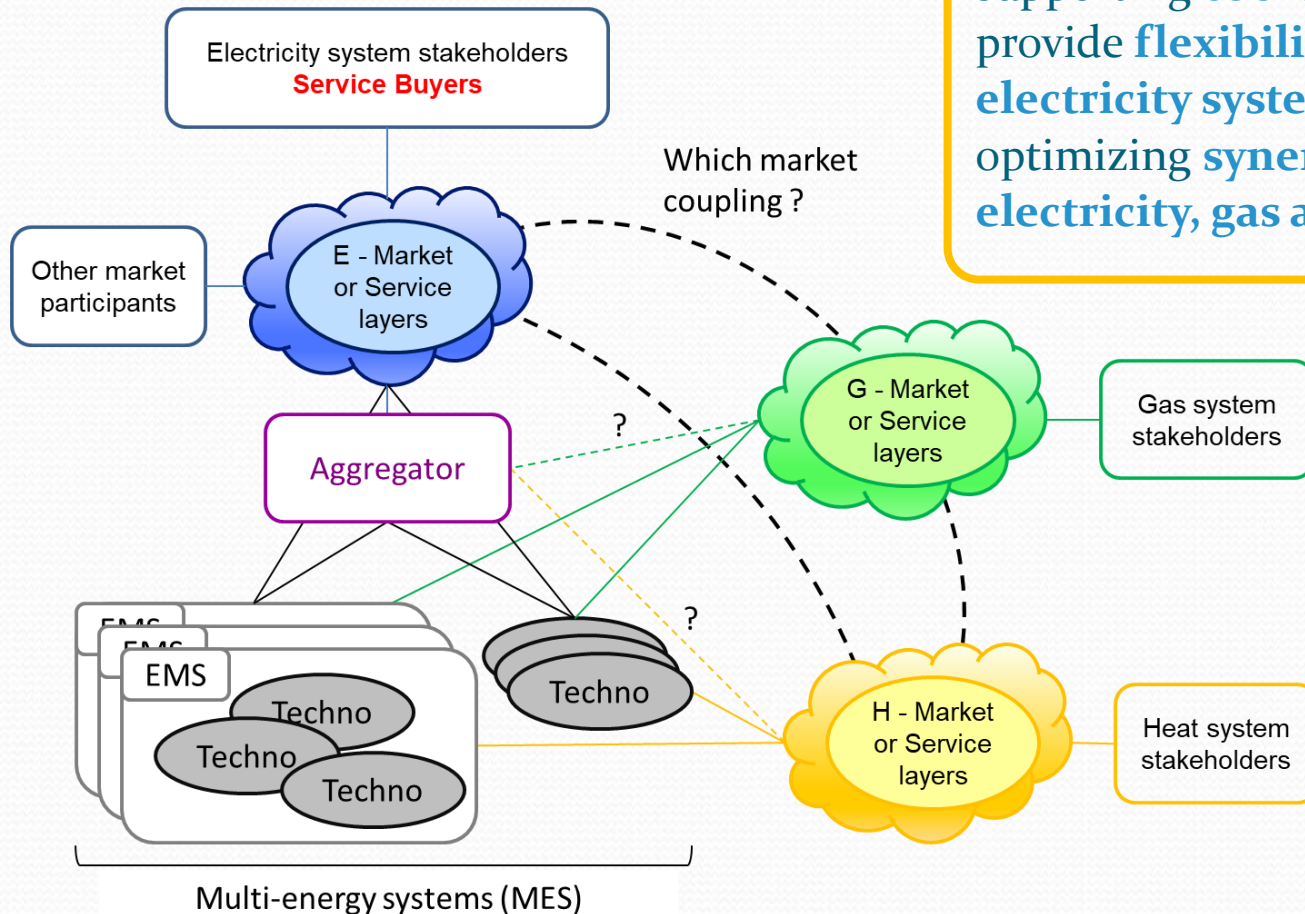
MAGNITUDE

Bringing flexibility provided by multi-energy
carrier integration to a new MAGNITUDE



Project scope and concepts

MAGNITUDE aims to develop **business and market mechanisms** as well as supporting **coordination tools** to provide **flexibility to the European electricity system**, by increasing and optimizing **synergies between electricity, gas and heat systems**.



- Validation on 7 real life case studies with different:
- Regulatory frameworks
 - Contracts
 - Core businesses
 - Sector-coupling technologies
 - Business models
 - Relationship between stakeholders

In Austria, Denmark, France, Italy, Spain, Sweden, UK.

Expected Impacts

MAGNITUDE aims to demonstrate that multi energy systems have great potential for the provision of flexibility to electricity systems. The project is expected to have impacts in the following fields:

Societal and environmental aspects – Contribute to

- **Increase the share of RES** while ensuring the quality and **security of supply** in the electricity grid
- **Smooth energy consumption** and offset the need for additional power generation.
- Meeting **climate and energy targets** at a European level, and stimulate new **economic and social benefits** at different levels.

Design and operation of multi energy systems (MES):

- Inform the wider community of the **flexibility to be expected from different multi energy technologies** and combinations, and pave the way for **optimized operation of MES**,
- Foster **innovation in local energy system design** and stimulate **closer collaborations** among the heating, gas and electricity sectors.

Market design and business models

- Provide **market and regulatory options**, based on a transnational perspective, to enable MES participation in the markets
- Provide **insights for the on-going discussions** to shape European energy markets.
- Contribute to the **creation of business opportunities for MES actors** including electricity, heating and gas generation and network operators, energy suppliers, aggregators, as well as customers.
- Address the **specific role of the aggregator** and provide adapted solutions for new business models.

Main achievements

- **Flexibility services** to the electricity system to be provided by MES - **Done**
- 7 Real-life MES **Case study technology setups** consolidated - **On-going**
- **MAGNITUDE concepts**, and functional technical and commercial **architecture** - **On-going**
- **Innovative future market designs** for MES participation - **On-going**
- **Capabilities of MES technologies** to provide flexibility services, technological adaptation, and associated technological and regulatory constraints and barriers - **2019**
- Specification of a **multi-energy data hub** - **2019**
- **MAGNITUDE KPIs** and assessment procedure - **2019**
- **Simulation and optimization tools** for maximization of flexibility provision by **MES** - **2020**
- Multi energy **aggregation platform** and **market simulation platform** - **2020**
- Adaptation **layer for interoperability** between MES and the relevant stakeholders - **2020**
- Simulation of the real-life case studies under baseline and future scenarios - **2020**
- **Opportunities and barriers for replicating** studied flexibility products and market designs - **2020**
- **Business model evaluation** of the different case studies for the simulated markets - **2020**
- **Final evaluation of the integrated system:** MES, aggregation and market platforms - **2021**
- **Project findings, lessons learnt and policy recommendations** addressing market mechanisms, regulation and standardization from a EU perspective - **2021**
- Mid-term and final **public workshops** - **2019 and 2021**