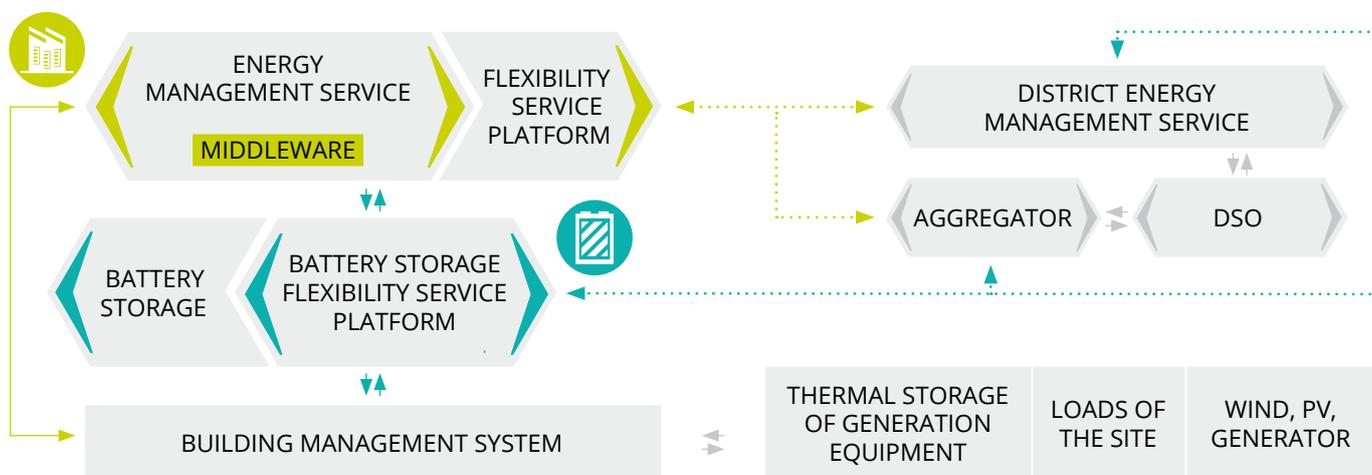


Energy Local Storage Advanced system

Decentralised small and medium-size energy storage systems provide much greater operating flexibility than today's large, centralized energy distribution systems. They ensure a reliable energy supply for buildings and districts and thus enable the integration of a high share of intermittent renewable energy sources. Yet, few such storage solutions are technically mature and economically viable at this stage. Wide-spread application is hindered by the EU's existing legal and regulatory framework.



ELSA architecture

Objectives

The project Energy Local Storage Advanced system (ELSA) brings distributed storage solutions to maturity. Its objective is to enable their integration into the energy system and their commercial use. ELSA is addressing existing energy storage development needs by combining **2nd life batteries with an innovative local ICT-based energy management system** in order to develop a low-cost, scalable and easy-to-deploy battery energy storage system. These storage solutions are deployed as energy services. Existing legal and regulatory barriers are analysed and international standards are pushed forward. At the same time, ELSA is developing innovative service-oriented business models. Sustainability and social acceptance are taken into account through comprehensive life-cycle and socio-economic impact assessments as well as the involvement of citizens and stakeholder groups.

10 partners
6 test sites in 4 EU countries

Planned activities

ELSA's mission is to further develop technology that is already close to maturity. ELSA storage systems will be applied in six demonstration sites representing several application contexts, covering services such as grid congestion relief, local grid balancing, peak shaving, voltage support and regulation. Several feedback loops and the constant involvement of relevant stakeholders will guarantee the optimal implementation at all pilot sites, while validation and evaluation will ensure scalability and proof of feasibility beyond the project.

●○ GATESHEAD COLLEGE

○ UNITED TECHNOLOGIES RESEARCH CENTER IRELAND

● AMPERE BUILDING LA DÉFENSE

○ BOUYGUES ENERGIES & SERVICES

○ RENAULT

○ NISSAN

● NISSAN EUROPE OFFICE

●○ ASM TERNI

B.A.U.M. ○ CONSULT

RWTH ○ AACHEN UNIVERSITY

AÜW ○●

ENGINEERING ○

Test sites:

- DSO
- Building
- District
- Project Partners

Demonstration Sites

The demonstration sites include buildings, districts and grids: the Skills Academy for Manufacturing and Innovation facility at Gateshead College (building), United Kingdom, the Ampere Building (offices) at La Défense, and the Nissan Europe Building (offices) in Paris, France, the E.ON Energy Research Centre at RWTH Aachen University (R&D district), Germany, the City of Termini (grid), Italy, and a residential district in the city of Kempten, Germany.

The ELSA consortium

This multi-disciplinary consortium brings together industry players with extensive experience in Electric Vehicle battery storage systems, (Renault and Nissan), as well as in sustainable development, digital and energy networks infrastructure, and building and district management (Bouygues). Research institutes specialising in the design and manufacturing of components and systems for buildings and industrial applications (United Technologies Research Center Ireland), in the energy sector including ICT for energy (RWTH Aachen) and in the area of smart homes and energy management options (Gateshead College) are also involved as are companies with experi-

ence and knowledge in IT-solutions for Energy and Utilities (ENGINEERING), in consultancy and training on sustainable development (BAUM), and in the management of electrical distribution systems (ASM and AÜW).

The ELSA Advisory Board

ELSA's work is supported by an Advisory Board tasked with providing valuable feedback. The Board is also responsible for advising ELSA's Technical Committee to assure consistency in outcomes in accordance with market expectations. The Advisory Board is composed of key players of the European energy sector as well as key users of future storage solutions.



RENAULT

NISSAN



RWTH AACHEN UNIVERSITY



United Technologies Research Center



The project Energy Local Storage Advanced system (ELSA) receives funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 646125.