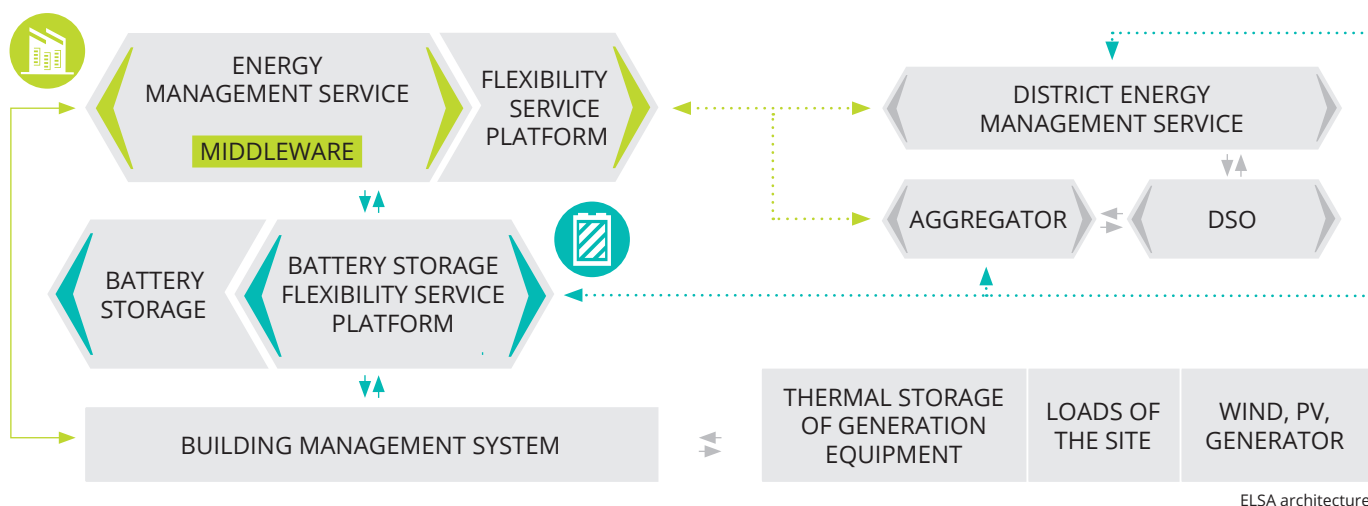


Energy Local Storage Advanced system

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

The ELSA solution

The project Energy Local Storage Advanced system (ELSA) is demonstrating an environmentally friendly and effective electrical storage system. It integrates second life electric car batteries and an intelligent energy management system to provide innovative services in a wide range of applications. For instance, in districts, commercial buildings and farms it can raise the degree of self-consumption by balancing electricity demand and local PV generation. In charging stations, it can shave load peaks of high demand and balance times of high generation. DSOs can use it in sub-stations for frequency and power regulation.

The system is highly scalable and able to incorporate batteries of different age and performance, each one managed by a separate controller. Existing legal and

regulatory barriers have been analysed and international standards have been pushed forward. Sustainability and social acceptance have been 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

ELSA storage systems have been successfully demonstrated in six demonstration sites. Several feedback loops and the constant involvement of relevant stakeholders guaranteed the optimal implementation at all pilot sites, while validation and evaluation ensured scalability and proof of feasibility beyond the project.

The ELSA system is planned to be launched for the mass market from 2019.



RENAULT

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ENGINEERING



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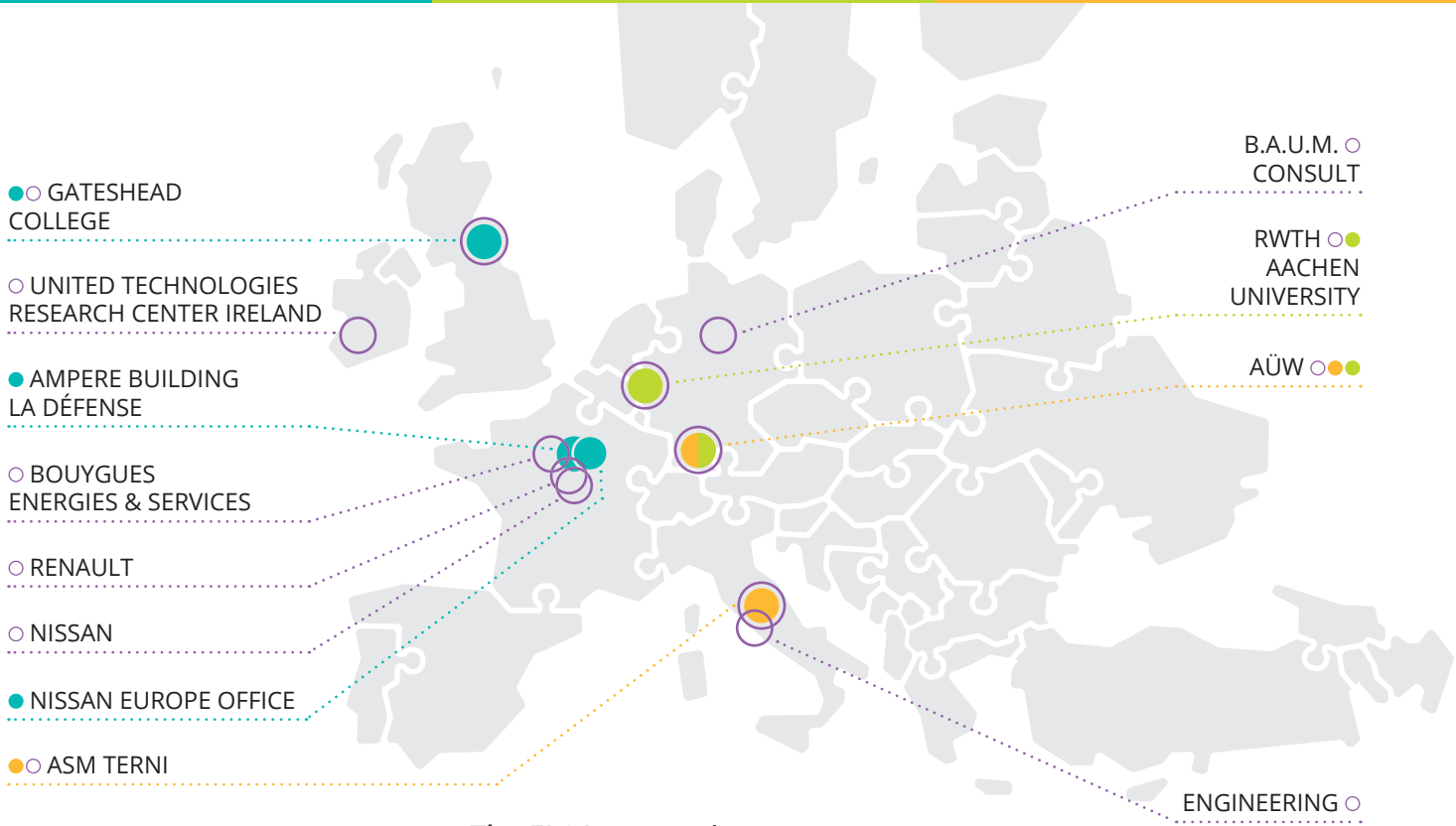
ASM Termi S.p.A.



GATESHEAD COLLEGE



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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.