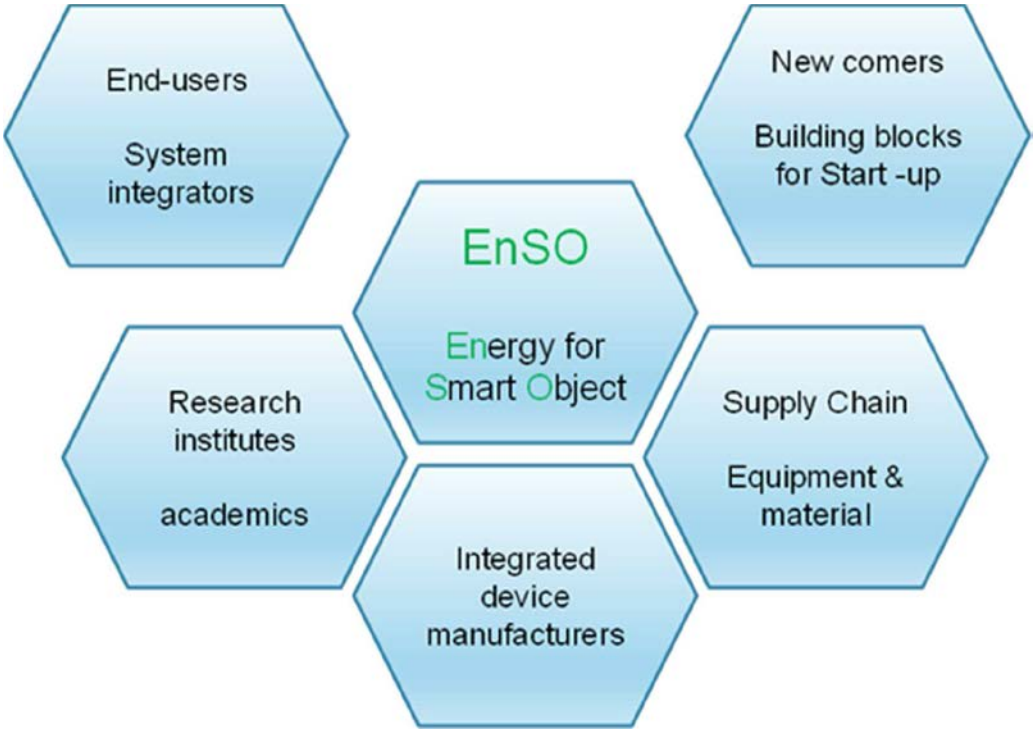
6 Publishable Summary

The goal of EnSO is to develop and consolidate a unique European ecosystem in the field of autonomous micro energy sources supporting Electronic European industry to develop innovative products, in particular in IoT markets, through a drastic innovative solution of energy storage. In summary, EnSO objectives are:

- **Objective 1**: demonstrate the competitiveness of EnSO energy solutions for powering the autonomous Smart Objects of the targeted Smart Society, Smart Health, Smart Mobility and Smart Production key applications
- **Objective 2**: disseminate EnSO energy solutions with easy to use demonstration kits, and support autonomous smart objects prototyping in a large number of use cases, to foster the take-up of emerging markets.
- **Objective 3**: develop high reliability assembly technologies of shapeable micro batteries, energy harvester and power conditioning building blocks for Autonomous Micro Energy Sources “AMES”.
- **Objective 4**: develop and demonstrate very high capacity and very high density, low profile, shapeable, long life time, rechargeable micro battery product family
- **Objective 5**: develop customizable smart recharge and energy harvesting enabling technologies with adequate power conditioner IP blocks for Autonomous Micro Energy Source “AMES”.
- **Objective 6**: demonstrate and evaluate the AMES design and manufacturing capability based on generic key enabling building blocks (storage, harvesting and power conditioning) for smart autonomous micro-systems.

EnSO will bring to market innovative Autonomous Micro Energy Sources (AMES) that will bring definitive differentiation to the autonomous smart systems of the targeted applications. EnSO AMES generic building block technologies will be customizable. As large volume market segments are targeted, EnSO manufacturing challenges will develop high throughput processes that will be versatile enough to produce at the targeted competitive cost customized AMES.

The EnSO ecosystem will involve **all the value chain** from key materials and tools needed to reach expected cost and sufficient volume capabilities, to several demonstrators in different field of application.



EnSO work scope addresses the market replication, demonstration and technological introduction activities of ECSEL Innovation Action work program.

- EnSO first market replication action will be the deployment on the market of a first generation of TRL8 microbattery innovative building blocks. Other market replication activities are foreseen with AMES based on high TRL microbatteries and smart recharge.
- Demonstration activities are planned on a yearly basis for more demanding applications that will require longer technological developments.
- Technological introduction activities, such as advanced materials or very large size substrate processing, will be evaluated on EnSO advanced technological platforms ; they will pave the way to the definition of the tools, processes and methods of production that will be ultimately required to address very large volume production.

EnSO relates to several of the Strategic Thrusts of ECSEL MASP. If the essential capability Smart Systems Integration is the main topic of EnSO, the project will also have a major impact on Smart Society, Smart Health, Smart Mobility and Smart Production Key applications. EnSO innovations in terms of advanced materials, advanced equipment and multi-physics co-design of heterogeneous smart systems will contribute to the Semiconductor Process, Equipment, and Materials thrust.