



EASE Position Paper on Energy Roadmap 2050



**EASE Position on
COM (2011) 885/2 “Energy Roadmap 2050”
April 2012**

Promoting the use of energy storage in Europe and worldwide

EASE, the European Association for Storage of Energy, represents the voice of the energy storage community, actively engaged in promoting the use of energy storage in Europe and worldwide. EASE strongly supports the Energy Roadmap 2050, particularly for continuously shaping an EU inclusive energy policy and ensuring a smooth transition to a low-carbon energy system.

EASE commends the European Institutions for the work and progress achieved so far and takes the opportunity to provide industry feedback as well as to offer expertise in a constructive dialogue with the European institutions concerned.

The vital role of storage technologies to achieve the goals

EASE members welcome the European Commission’s Energy Roadmap 2050 of 15 December 2011, particularly as this communication recognises the **vital role of storage technologies** for a progressively decarbonised European energy system.

The evolution of the energy sector towards a sustainable system will trigger dramatic changes in the patterns of supply and demand. In all scenarios of the Energy Roadmap 2050, the share of **renewable energy sources** (RES) in gross final energy consumption will achieve at least 55% in 2050. Switching to RES will inevitably lead to a situation in which, from time to time, generation will largely exceed demand or vice versa, with specific concerns on transmission and distribution networks. The growing penetration of RES, in particular non-dispatchable generation such as wind and solar photovoltaic (PV), will increase therefore the need for **flexibility** in the energy system. Energy storage is especially well suited to respond to this challenge and ensure a continued **security of energy supply** at any time.

Storage is key in the whole energy value chain

EASE is convinced that energy storage will provide **essential services** along the whole energy value chain and will thereby support in numerous aspects the transition towards a secure, competitive and decarbonised energy system in Europe:

- ✓ **Balancing Demand & Supply**

The increasing intermittency at the generation side requires technologies and procedures for balancing energy demand and supply. By allowing a timely and geographically displacement between consumption and generation sites, energy storage promotes the integration of RES generation.

- ✓ **Managing Transmission & Distribution grids**

Studies confirm that even with perfect build out of transmission capacities storage will have to become an essential element of future electricity.¹ Moreover, some storage technologies could be realised much faster than grid upgrades.

In a landscape of increasingly decentralised and fluctuating electricity production and consumption, storage can optimise the use of generation, transportation and distribution assets. Storage enables grids to be sized closer to average energy flows, instead of to peak power requirements, thereby also reducing transmission losses. Storage can contribute to the stability and reliability of grids as it supports especially local grid management functions that increase the grid's hosting capacity of intermittent renewable generation.

- ✓ **Promoting demand side management**

Distributed storage technologies, according to their physical locations in the distribution grids, will play a key role in the transition process of distribution sections of the electricity system to the transition towards more efficient and sustainable energy usage. This will include the development within the transportation sector to a growing deployment of electric mobility with (Hybrid) Electric Vehicles (HEV, EV), the emergence of intelligent buildings and smart grids in general.

Energy storage optimises local electricity generation and consumption (self-consumption, smart building), including the integration with other forms of energy use like heating/cooling.

- ✓ **Shaping new market designs**

Energy storage will play an important role in new market designs, especially flexibility markets. Specific storage regulation and market mechanisms for flexibility will help to create energy storage markets and will contribute to the development of a competitive energy storage industry.

¹ UBA, 2010, [Energy target 2050: 100% renewable electricity supply](#);

Fraunhofer IWES, ZSW, Solarfuel, 2010, [Renewable \(power to\) methane: Storing renewables by linking power and gas grids](#);

Siemens, ISET, 2008, [Design of transport and storage capacities for a future European power supply system with a high share of renewable energies](#)

Recommendations

Due to the fact that multiple storage technologies will be needed to cover the various requirements of the system (short vs. long duration, small vs. large scale), **technological innovation** in storage technologies is highly needed in order to unlock the significant development potential inherent to most current storage technologies (e.g. electrochemical, chemical, mechanical, electrical, thermal).

Currently, a number of technologies exists at a sufficient level of technical and industrial maturity for deployment but are not competitive yet. These technologies have however a large potential of cost savings. The lack of competitiveness compared to the established technologies in the field of generation, transmission and distribution is for some of them due to the lack of volume and subsequent industry capacity, and unsuitable market design. Therefore, in addition to technology support, market-oriented support schemes are in some cases needed to overcome the temporary lack of volume and maturity of many of these technologies. Finally, **regulations** should take also into account the technical and economic potential of energy storage (e.g. market design further facilitating the use of energy storage for provision of reserve and balancing power).

The transition to a secure, competitive and decarbonised energy system in 2050 lies in the best combination of all technical measures with the best compromises between CapEx, OpEx, efficiency and reliability, on the short, medium and long term. We strongly believe that energy storage technologies are part of the solution to the decarbonisation challenge.

The European Association for Storage of Energy (EASE) is the voice of the energy storage community, actively promoting the use of energy storage in Europe and worldwide.

EASE actively supports the deployment of energy storage as an indispensable instrument to improve the flexibility of and deliver services to the energy system with respect to European energy and climate policy. EASE seeks to build a European platform for sharing and disseminating energy storage-related information. EASE ultimately aims to support the transition towards a sustainable, flexible and stable energy system in Europe.

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Disclaimer:

This position paper was elaborated by EASE and reflects a consolidated view of its Members. It does not necessarily represent the exact views of any specific member company.

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