



EASE Position Paper on Heat and Cold Storage

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Introduction

EASE appreciates the increasing interest in the electrification of heating and cooling and the storage of heat and cold by help of different storage technologies as a means to support the transition of the European energy economy into an energy economy based on sustainability and RES.

Heat and cold storage is capable not only of providing flexibility to heating appliances based on heat coming directly from RES such as solar thermal heating but also of supporting the integration of the heat and electricity sector (e.g. by means of Smart electric thermal storage (SETS)) and electric heat pumps).

Therefore EASE is convinced that the potential role must be explicitly described and the current regulatory barriers for heat and cold storage must be highlighted in order to allow the full potential of this technology to be made use of. By retrofitting of existing installations such systems could contribute to carbon saving of several million tonnes per year in the EU¹.

Today major renewable energy sources in the EU are PV, wind, hydropower and biomass; transformed into electricity and then utilised in different applications. The share of fluctuating RES like PV and wind is steadily increasing and expected to grow in the next decades. Electric-driven cooling and heating is therefore a major contributor to the decarbonisation of heating and cooling used especially in buildings, when it is based on renewable electricity In combination with storage capabilities. It is also a key technology for the success of decarbonisation efforts by allowing RES electricity to be consumed at times of low electricity demand and used later for heating / cooling purposes, thus allowing a higher penetration of renewable energy onto the grid.

Regulations

We highlight the importance of ensuring coherence between the different EU Directives and Regulations related to the energy system and its consumption. Furthermore, due to the increase in using electric energy from renewable sources, like wind and PV, the primary energy factor continues to decrease. This means that heating on the base of electric energy becomes increasingly more renewable Nevertheless in efficiency calculations like in the delegated acts of the Ecodesign Directive and of the Energy Labelling Directive, calculations are still based on a primary factor of 2.5 which makes electric heating and cooling appear

¹ Potential for Smart Electric Thermal Storage Contributing to a low carbon energy system, DNV KEMA Energy & Sustainability, 2013

inefficient in comparison to other technologies. This could exclude such technologies from the market, even if by using them the share of electric energy based on renewable could be increased. We therefore recommend adapting the primary energy factor regularly to the development of renewable energies.

Moreover, standards/regulations/rules/directives affecting energy storage must be scrutinised by independent bodies and/or regulators in order to ensure that this is not hindering energy storage market development.

It is essential to design regulations with regards to storage in such a way that they allow storage to be allocated where the socially optimal outcome is achieved. Technologies, like, smart electric thermal storage² (space and water heating) which are already available on the market should be kept in mind.

Specific targets for the carbon footprint reduction or integration of RES in heating / cooling applications could additionally stimulate the further development and subsequent roll-out of technologies that enable meeting the EU climate protection targets.

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 response was elaborated by EASE and reflects a consolidated view of its members from an Energy Storage point of view. Individual EASE members may adopt different positions on certain topics from their corporate standpoint.

² SETS is a local small scale storage technology applying ICT technology in which electrical energy is stored as heat in order to meet householders' domestic space and water heating needs