EASE response to Public Consultation
Paper of the Services of DG Competition containing
Draft Guidelines on environmental and energy aid for 2014-2020

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Key messages

EASE, the European Association for Storage of Energy, welcomes the draft Guidelines on environmental and energy aid for 2014-2020, in particular the recognition that:

- climate and energy policy have become increasingly **intertwined**;
- a **robust state aid control** is a must if we are to achieve a well-functioning internal energy market;
- goals of increased environmental protection and a competitive, sustainable and secure energy system should be primarily attained through instruments designed in a **market oriented**, **non-discriminating** and **technology-neutral** manner;
- electricity **storage** will contribute to provide **services and value** to the entire energy system.

EASE also takes this opportunity to provide feedback, offer expertise and ask for a level playing field for all energy storage technologies in a constructive dialogue with the European Commission (EC).

Definitions: Electricity Storage or Energy Storage?

According to the draft guidelines, the EC has identified investment aid for energy infrastructure as one of the measures that would possibly be regarded beyond the general state aid prohibition.
Electricity storage is considered in the document, and in accordance to the Regulation on guidelines for trans-European energy infrastructure[1], as *energy infrastructure facilities used for storing electricity on a permanent or temporary basis in above-ground or underground infrastructure or geological sites, provided they are directly connected to high-voltage transmission lines designed for a voltage of 110 kV or more*.

EASE welcomes the identification of electricity storage as an energy infrastructure. The fact that investment aid for electricity storage has been regarded represents the acknowledgement of its value to and role in the energy system of today and of the future.
We nevertheless encourage the EU institutions to be open to recognise the different existing forms of storage.
Energy storage devices are "**charged**" when they absorb energy, either directly from renewable generation devices or indirectly through the electricity grid. They "**discharge**" when they deliver the stored energy back into the grid. Charge and discharge normally require power conversion devices, to **transform electrical energy** (AC or DC) into a **different form of electrical, thermal, mechanical or chemical energy.**

[1] Regulation (EU) No 347/2013

In most of the cases, electricity is converted to one of the abovementioned forms of energy.
In other cases, it is more efficient not to reconvert the stored energy to electricity in order to let the consumer use the particular form of energy directly. Energy storage thus represents a gateway between electricity and gas with the Power-to-Gas concept on the one hand and a gateway between electricity and heat with the Power-to-Heat concept on the other hand.

In addition, the concept "energy from renewable energy sources" (§ 1.3. k) lets us understand that energy storage is not well defined either:

- During the charge period, it is a "load": renewable electricity used for filling storage systems is included in the Renewable Energy Sources (RES) field;
- During the discharge period, it is a "generator": electricity produced as a result of energy storage (filled by RES) is excluded.

The definition of storage should therefore not be restricted and should include a wider concept of **Energy Storage,** compared to the current reference to Electricity Storage**.** Different technologies and concepts are included in the concept of Energy Storage and the selection is expected to be mainly based on the device location and on the different services provided by the device. Moreover, the concept and the value of energy storage technologies must be considered comprising its **capabilities in transferring energy between sectors** (e.g. power to gas, hybrid electric vehicles, heat storage…).

Energy storage allows for the use of more RES by **avoiding curtailment** when there is too much intermittent generation (e.g. solar photovoltaic and/or wind). **This service** should therefore be **remunerated**.

EASE strongly believes that **the use of energy storage must be technologically neutral**: each case must adopt the most suitable technological and economic solution. Therefore the wording must be open and not technically discriminatory.

Energy Storage: a key component of the European decarbonised power system

The need for Energy Storage is currently mainly based on the strong request for grid flexibility and grid stability in order to make the complete "Electrical Systems" cope with:

- The balancing between the generation and demand at different timeframes[2];
- The increase of the level of the intermittent renewable energy.

Indeed, the main energy storage functionalities, such as energy time-shift, quick energy injection and quick energy extraction, are expected to heavily contribute to the achievement of the following targets:

- Security of the power supply of the Electrical Systems
- Security of the power quality
- Cost minimisation: direct & environmental costs

[2] Energy storage can both help ensuring system adequacy ('steady-state' balancing between generation & demand) but also provide ancillary services (for instance, reserves) to help addressing real-time imbalances (e.g. due to forecasting errors, sudden outages, etc.). In addition, increase of the 'peak demand' is not the only issue, but also the increase of 'peak generation' (not- dispatchable RES, inflexible nuclear, etc.) in cases there is not enough load to consume it, or not enough capacity to export it.

EASE acknowledges that Energy Storage represents one possibility among others to enhanced system flexibility, e.g.:

- "Dispatchable" power plants or flexible generation systems;
- Demand-side response via a smart grid;
- Interconnection with adjacent markets.

In particular, energy storage can be integrated at different levels of the energy value system: generation, transmission, distribution and end-user, thus providing simultaneously specific value to different stakeholders.

This aggregation of multiple services is strongly depending on the location of the energy storage device.

The main challenge is related to the value of energy storage, being it monetary or socio-economic, as it can deliver a number of strategic services both to the regulated and to the deregulated parts of the power industry.

EASE therefore calls for:

- **Equal consideration** of energy storage as a solution for enhanced grid flexibility, stability and quality along with other technologies.

A levelled playing field for Energy Storage

EASE shares the EC's point of view regarding the challenge posed to generation adequacy and to the system's flexibility by the increasing share of RES.

Energy Storage can contribute to resolving the different concerns related to electricity issues:

- RES integration: energy storage is able to facilitate the RES integration by firming their capacity and by providing, for example, arbitrage services;
- Energy infrastructure: energy storage is able to contribute to the required flexibility by providing frequency & voltage control, electricity quality, reactive power compensation and to optimise the grid investments by allowing some level of investment deferral;
- Generation adequacy: energy storage is able to provide the required firm capacity.

Furthermore, energy storage is able to provide customer services that are expected to contribute to grid stability such as end-user peak shaving, power quality and facilitate the demand-side management use with the time-of-use energy cost management.

EASE therefore supports:

- a **non-discriminatory consideration of** and a **fair treatment for energy storage** alongside other measures, such as demand side management and the increase of interconnection capacity, when considering aid to generation capacity;

- that any measures to ensure generation adequacy, such as potential future capacity markets/payments, or to balance the energy system must be shaped in such a way that **every energy storage technology is eligible to participate without discrimination**, provided it is able to fulfil the technical requirements.

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

For more information please visit www.ease-storage.eu

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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.