European Association for Storage of Energy

EASE

The flexibility challenge

What role can electricity storage play in delivering flexibility to the market?

What are the shortcomings?

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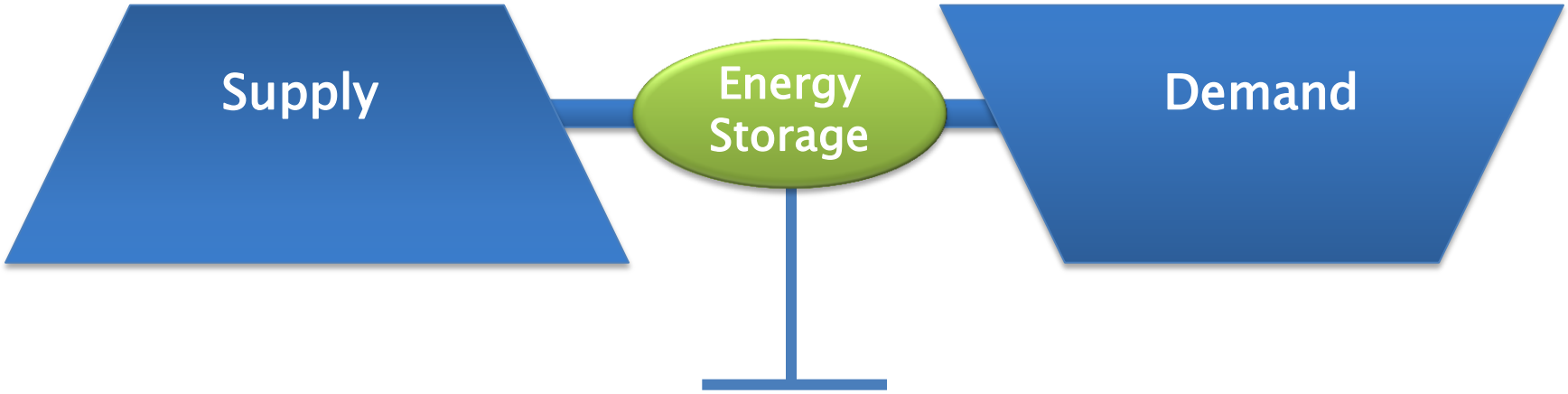
Energy Storage in the new energy system



- Energy Storage is a new, own system component
- No specific market design in Europe and the Member States to take into account all the added value Energy Storage can deliver

The most important barriers to Energy Storage

No specific market design in Europe and in the Member States

EASE has identified the most important barriers to energy storage. This will facilitate external and internal communication and will allow EASE to effectively tackle concrete barriers currently hindering the optimal integration of ES into the energy system.

EASE divides these barriers according to three general strategic objectives:

- *Role and benefits:*
  EASE believes that more awareness and knowledge regarding potential and possible roles of ES in the energy system is necessary.

- *Fair market design:*
  EASE believes that a fair market design for energy storage is necessary to foster the market uptake for ES based solutions.

- *Funding (mainly RD&D):*
  EASE believes that continuous RD&D support for ES is necessary, as ES is an indispensable feature of a flexible and sustainable energy system.

The most important barriers to Energy Storage

No specific market design in Europe and in the Member States

In more detail, what does it means? (1/2)

System position of energy storage

- » lack of definition of energy storage
- » impact of unbundling
- » potential for heat storage is underestimated

No level playing field

- » same market obligations applicable to all players and services

Insufficient market access

- » network codes should take into account benefits from more innovative energy storage technologies
- » openness, competition inter alia, access to bulk markets

Remuneration not matching value creation

- » for flexibility and capacity
- » for additional storage services
- » for regulated markets (TSO/DSO)

The most important barriers to Energy Storage

No specific market design in Europe and in the Member States

In more detail, what does it means? (2/2)

Unacceptable implementation
- » fees & taxes

Insufficient incentives besides R&D funds

Lack of technical standards
- » interfaces

Additional regulatory points
- » concessional rights
- » Water Framework Directive national implementation
- » missing acceptance for emission reduction potential: acceptance of green H2 (P2G) for biofuel quotas

How to overcome these barriers?

Example: Network Code on Load-Frequency Control and Reserves

The proposed NC submitted by ENTSO-E to the European Commission, following the positive opinion from ACER, mentions in its article 45.6 that:

"a Frequency Containment Reserve providing Unit […] shall be able to fully activate its FCR Capacity continuously for a time period of not less than 30 minutes".

This is the first time a duration limit on Primary Regulation has ever been set by ENTSO-E, and it is proof that TSOs are finally ready to accept and integrate innovative energy storage devices on the grid, but we believe more can be done.

In the majority of EU member states, the upholding of FCR (Frequency Containment Reserves) full activation is currently required for a period of time of at least 15 minutes.

In the present NC LFCR draft, the secondary reserve kicks-in within 15 minutes.

We could therefore have both primary and secondary reserves covering the timespan between 15 and 30 minutes.

How to overcome these barriers?

Example: Network Code on Load-Frequency Control and Reserves

EASE recalls

- the objective of ACER's Framework Guidelines on Electricity Balancing to have a non-discriminatory reserve procurement that "is set to foster liquid balancing markets and avoid undue entry of new entrants".

EASE position:

- technical rules and potential market designs regarding ancillary services (including FCR) to be shaped in such way that, without discrimination, every energy storage technology meeting the actual requirements is encouraged to participate.

- TSOs should take into account the benefits that more innovative energy storage technologies can provide to the system. The creation of specific reserves that reward ancillary services provided by more innovative energy storage technologies could be considered by TSOs.

Full response available on the EASE website:
http://www.ease-storage.eu/tl_files/ease-documents/Position%20Papers/EASE%20position%20on%20NC%20LFCR_2013.12.pdf

How to overcome these barriers?

Example: Network Code on Emergency & Restoration

How is energy storage addressed in the NC ER?

- First NC that includes a definition of Energy Storage (Art 2.6):

Energy Storage means a device being used for storage of energy and that can be used to balance the system

- Energy Storage is explicitly mentioned: great step forward but definition should include and reflect not only the traditional technologies such as PHS, but also all types of energy storage technologies.

- Since the decision on which devices may participate is up to each TSO, TSOs should be open to consider the additional advantages provided to the system by innovative, faster and more accurate energy storage technologies.

- TSOs should consider including newer energy storage technologies in their Restoration Plans.

How to overcome these barriers?

Example: Network Code on Emergency & Restoration

EASE calls for a level playing field for all the services energy storage can render to the system:

- through a definition that recognises non-PHS energy storage systems as an own asset class in all electricity related regulations and that does not restrict its application to system balancing only;
- through the recognition of new energy storage systems as a power source capable of contributing to the Frequency Deviation management procedure;
- through a non-discriminatory consideration of and a fair treatment for energy storage at national level alongside other measures.

Full response available on the EASE website:
http://www.ease-storage.eu/tl_files/ease-documents/3.%20Publications/Response%20to%20Public%20Consultations/EASE_response_ACER_NC%20ER_final.pdf

How to overcome them?

Example: Energy storage definition for the electricity vector

Energy Storage should be recognised as an own asset class in all energy related regulations due to its nature.

EASE proposes the following definition:

An “Energy Storage Facility” for the electricity vector is a facility used for the intake and stocking of electricity in different suitable energy forms. The release of this energy, at a controlled time, can be in forms that include electricity, gas, thermal energy and other energy carriers.

How to overcome them?

EASE recommendations on market design (1/3)

EASE believes that tackling the barriers for energy storage technologies in the existing system, which prevent energy storage from being competitive or from participating in the energy market, is necessary.

EASE promotes the development of a business case for energy storage. For that reason, EASE produced a series of recommendations to enable the creation of a fair revenue stream:

- EASE recommends a legal framework for energy storage at EU level to allow grasping all the added value energy storage can deliver, bearing in mind that the completion of the European single market for energy is crucial. A leeway for national approaches should be incorporated, as long as they do not create market distortion

- EASE believes that energy storage constitutes a special and important asset of the complete energy value chain. Therefore the current levy structures (grid fees, taxes or similar) should not hinder the integration of energy storage

How to overcome them?

EASE recommendations on market design (2/3)

- Storage devices can render services to the regulated and non-regulated part of the energy system. In providing such services, market based solutions should be preferred whenever possible

- EASE believes that energy storage gives an added value on different levels in the energy system. Therefore the operator of such devices may differ. The market design could also allow specialised storage operators to emerge, as long as this does not trigger market distortion

- EASE recommends that potential future capacity markets/payments must be shaped in such a way that without discrimination every energy storage technology should be eligible to participate, if able to fulfil the requirements

How to overcome them?

EASE recommendations on market design (3/3)

- EASE reminds that storage technologies must be considered comprising its capabilities in sector export (e.g. power to gas, hybrid electric vehicles, heat storage…). Given the important consequences for the markets involved, EASE reminds that an integrated approach is advisable

- EASE believes that adequate financial support for Research, Development and Demonstration must be made available on EU level to allow grasping the full benefit that energy storage technologies can bring to the energy system

EASE holds the firm opinion that it is too early to have a solid and clear view on which technology fits which application better.

We believe that efficiency and cost are important drivers which must always be kept in mind, as well as public acceptance and the environmental impact.

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Disclaimer:

This presentation and all its contents were elaborated by EASE and reflect 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.

Members

GL Garrad Hassan is now DNV GL Renewables Advisory