

# Tools and methodologies to boost new energy storage capacity

5 July 2024 Athens Energy Forum Patrick Clerens EASE Secretary General



### Who we are EASE Targets



#### **Our Mission**

To promote a fair, future oriented, sustainable energy market design that recognises storage as an indispensable element of the energy system to build a bridge between EU policymakers and the energy storage stakeholders.



#### **Our Vision**

To have a renewable-based carbon-neutral Europe by 2050, enabled through energy storage.





### Who we are

**Our Members** 





### Agenda

I. State of affairs

II. European Energy Storage Estimates 2030 and 2050

III. Main barriers to the development of energy storage

**IV.** Policy recommendations

### I. State of affairs





### I. State of affairs

#### Curtailment



#### Cost and volume of grid congestion in Germany

#### I. State of affairs

Figure 12: Redispatch volumes in the AGE scenario, normalized to total electricity demand. Year is 2040.





> 25%

- 10%

- 5%

#### In 2040, with BaU, 310 TWh will be curtailed in the EU

#### Equivalent to roughly the consumption of the lower half of the EU Member States

Source: JRC, Future-proofing the European power market redispatch and congestion management, 2024 Source: <u>https://www.statista.com/statistics/1002892/gross-electricity-production-in-europe/</u> accessed 06.2024



Source: JRC analysis



#### II. European Energy Storage Estimates 2030 and 2050

**Compared to Historic Market Deployment** 





#### A. Incorrect and incomplete law implementation at the national level

#### B. Curtailment and congestion

C. Disproportionate economic barriers (double charging/taxation)

#### D. Limited revenue streams

E. Lack of a clear storage strategy



A. Incorrect and incomplete implementation at the national level





A. Incorrect and incomplete implementation at the national level GREECE

Electricity storage is not yet eligible to provide ancillary services other than FCR, aFFR, mFFR.

No capacity remuneration mechanisms



B. Curtailment and congestion Wind energy curtailment and compensation





## III. Main barriers to the development of energy storage C. Disproportionate economic barriers

	No double charging of grid fees	No double charging of grid fees	No double charging of
	on projects connected to the	on projects connected to the	taxation on electricity from
	transmission networks?	distribution networks?	storage assets?
Belgium	$\checkmark$	x	$\checkmark$
Finland	X	$\checkmark$	X
France	X	$\checkmark$	X
Germany	$\checkmark$	$\checkmark$	$\checkmark$
GB	$\checkmark$	$\checkmark$	$\checkmark$
Greece	$\checkmark$	$\checkmark$	$\checkmark$

Greece is a unique example because it doesn't impose double charging or double taxation. However, the problem persists in the EU.



#### **D. Limited revenue streams**

#### Restrictive requirements to providing balancing services

- Limitations to prequalify and limited capacity of prequalified or distributed energy resources.
- Product design and structure: big minimum bid sizes, long validity periods, long procurement lead times.

#### **Restrictive requirements to providing congestion managements**

- Measures are usually based on non-market based procedures.
- Difficult to develop local markets due to e.g. lack of transparent decision-making procedures.
- In Greece, lack of capacity remuneration mechanism and provisions for ancillary services; lack of congestion management.





### III. Main barriers to the development of energy storage E. Lack of clear storage strategy

- Drivers and business case differing more and more from State to State, as Regulation changes from country to country – capacity mechanisms, support schemes, services being tendered out, etc.
- Member states do not have a full understanding of the different tools the EU has given them to foster flexibility – schemes/capacity markets/auctions
  - What is their complementarity?
  - Whose responsibility is to introduce these tools e.g. regulators or TSO?
  - Should Member States prioritise some tools over others?



Fostering flexibility in the European market

European Association for Storage of Energy

1. Thorough and coherent implementation of EU law at the national level.

2. Public funding and visibility for R&D and demo energy storage projects, especially LDES.

3. End of double taxation and discriminatory treatment of colocated storage facilities.

4. Broad deployment of local flexibility markets.

5. Access to long and stable revenue streams for energy storage (PPAs, CfDs, forward markets, CRMs). 6. Political commitment and strategy for energy storage alongside smart grid rollout.



1. Thorough implementation at the national level

The Clean Energy Package and Electricity Market Design should be thoroughly implemented at the national level.

The National Energy and Climate Plans should be aligned with the European Commission's recommendations. A reporting requirement should be added.



2. Public funding and visibility for R&D and demo energy storage projects, especially LDES. LDES technologies are often cost-competitive but fail to survive the ''death valley''. Such technologies are needed for weekly/seasonal flexibility.

Europe has the leadership in certain energy storage technologies. But e.g. in Li-ion batteries it is trailing behind.

R&D of energy storage should be encouraged.

State aid for manufacturing and deployment should be assessed and clarified.



3. Removing disproportionate economic barriers

The surcharges on energy storage should reflect the added value to the energy system, e.g. by moving to increasingly power-based network tariffs

The taxation regimes should be transparent and coordinated in order to avoid double taxation and address the current legal uncertainty.



4. Congestion management and grid stability

Deploy cost-efficient alternatives to grid expansions for smart alternative

Establish local flexibility markets to "put a price on congestion"



5. Access to revenue streams

Market-based tools to effectively incentivise energy storage facilities such as Contracts for Difference.

Diversified revenue streams for storage to engage in various market services.

The EU Innovation Fund should introduce a dedicated call for long duration energy storage.



6. A comprehensive storage strategy

Addressing the complementarity and coherence of different policy tools.



### Conclusions

- Flexibility needs are dramatically increasing and cannot be accommodated by the current system.
- Regulatory changes have empowered Member States which shall choose between different tools to promote flexibility, however significant barriers persist.
- Energy storage is the main tool to address those needs.
- More national and EU support for energy storage is necessary, also to balance ever more energy over ever longer timeframes.



## Talk to us.

We're ready to answer your questions.

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