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Incentives for the EU electricity market

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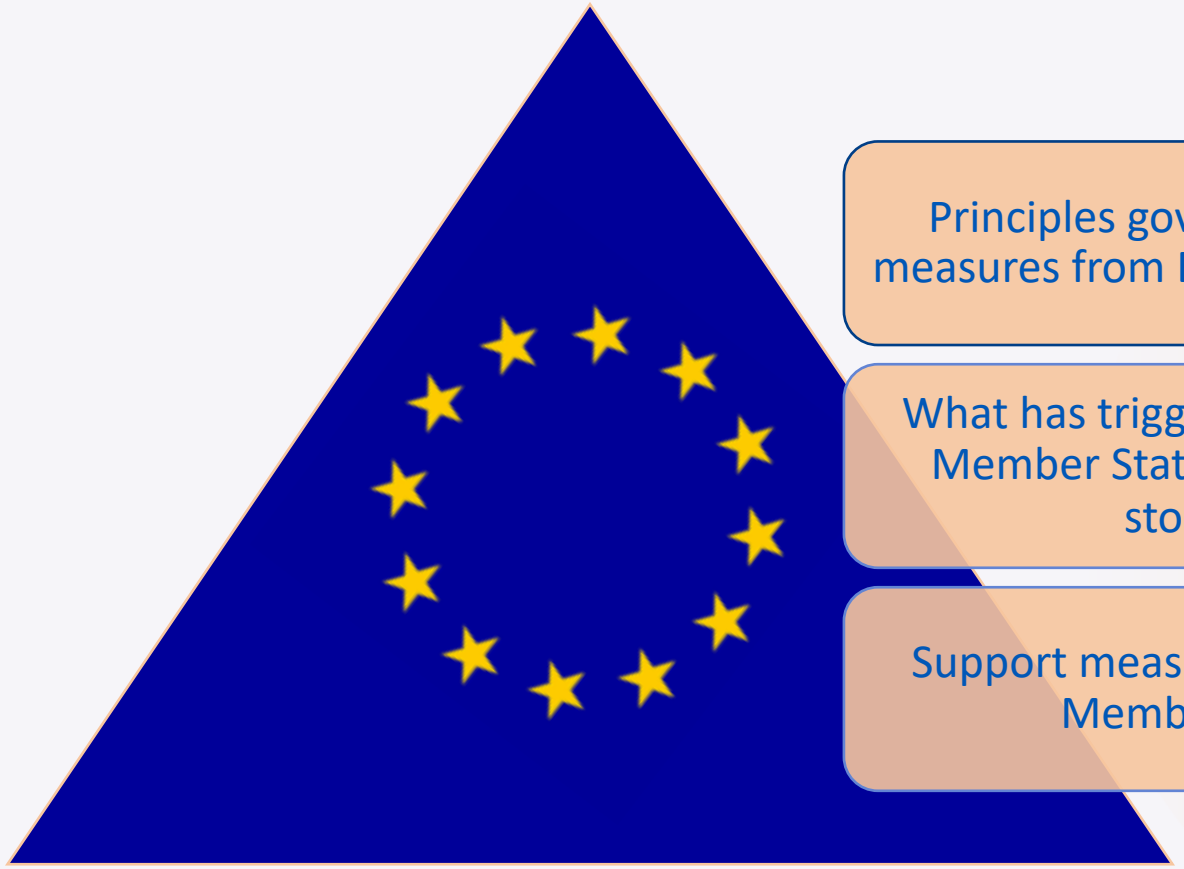
EU Single Market for Energy



Principles governing support measures from EU Member States

What has triggered action from Member States in respect to storage?

Support measures taken by EU Member States

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Basic building blocks of the EU single market

Directive (EU) 2019/944:

(8) With a view to creating an internal market for electricity, ***Member States should foster the integration of their national markets and cooperation among system operators at Union and regional level****, and incorporate isolated systems that form electricity islands that persist in the Union.*

(9) The Union would most effectively meet its renewable energy targets through the creation of a market framework that rewards flexibility and innovation. ***A well-functioning electricity market design is the key factor enabling the uptake of renewable energy.***

(12) ***Promoting fair competition and easy access for different suppliers*** *is of the* ***utmost importance for Member States*** *in order to allow consumers to take full advantage of the opportunities of* ***a liberalised internal market for electricity****. Nonetheless,* ***it is possible that market failure persists in peripheral small electricity systems and in systems not connected with other Member States****, where* ***electricity prices fail to provide the right signal to drive investment****, and therefore requires specific solutions to ensure an adequate level of security of supply.*

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Incentives of Member States

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What is the starting point for Member States?

Economic problem: While high electricity prices provide incentive for new generation capacity, they also disincentivize investment by other sectors that use energy as an input. The more undecisive the state is, the worse the problem becomes.

Political problem: High electricity prices increase household costs.

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Intervention by the EU member states between 2010-2020 into significant storage

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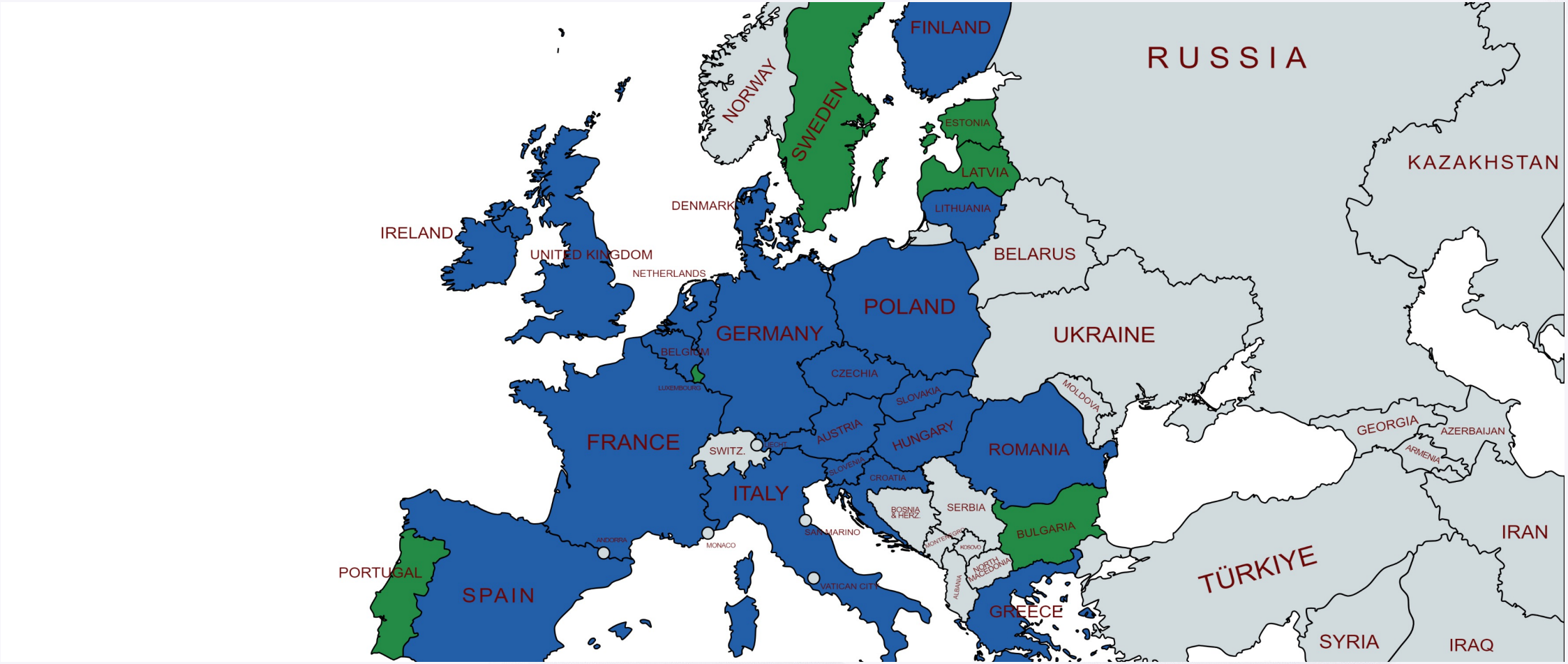
Intervention by the EU member states between 2010-2023 into significant storage



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State intervention – the new baseline?

- *Nonetheless, **it is possible that market failure persists in peripheral small electricity systems and in systems not connected with other Member States**, where **electricity prices fail to provide the right signal to drive investment**, and therefore requires specific solutions to ensure an adequate level of security of supply.*

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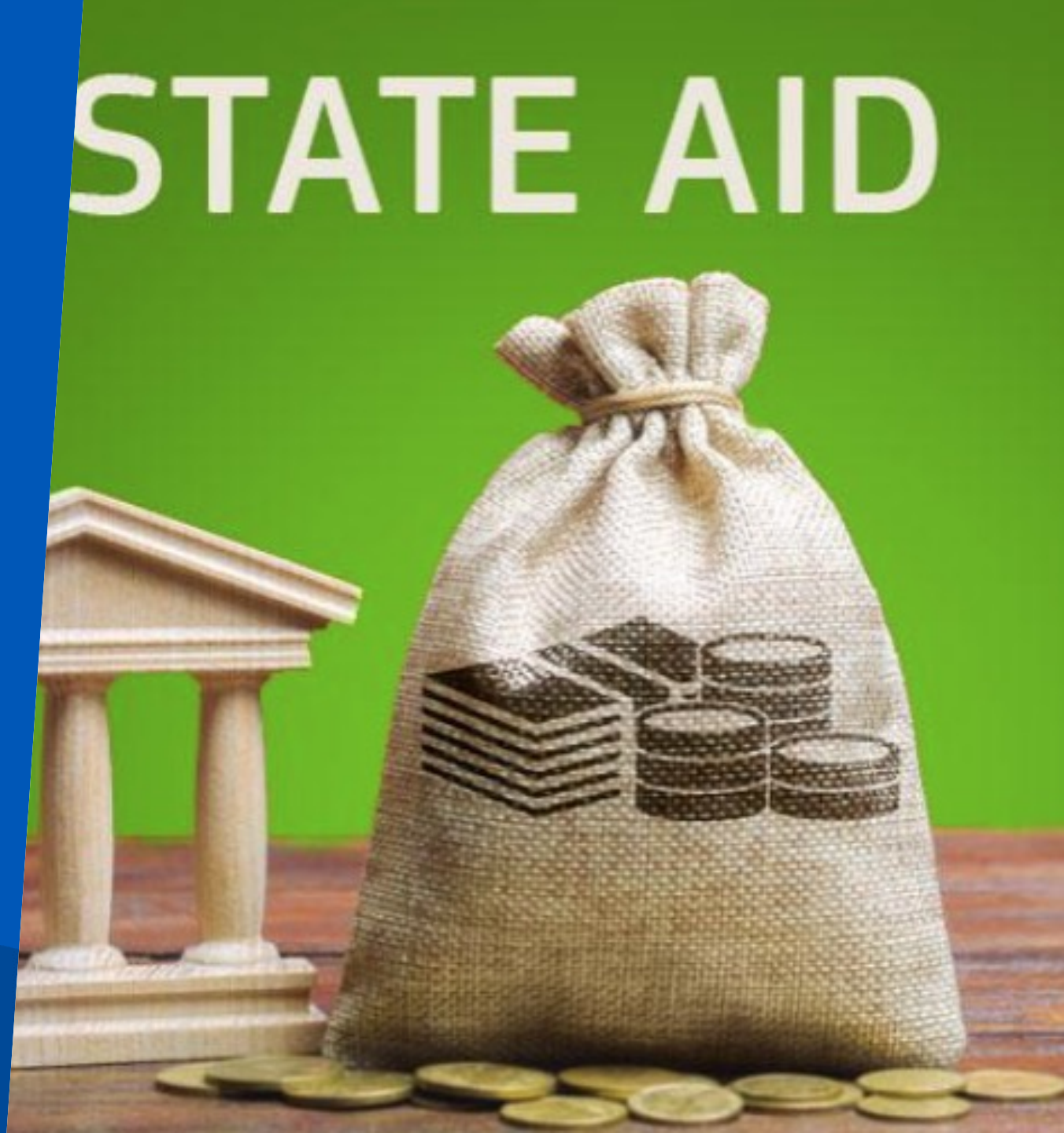
Measures by the Member States



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State aid measures proposed by Member States

- **Direct Grant** (investment grant or feed-in tariff)
- **Contract for Difference** (CFD)
- **Cap and Floor** (CnF)
- **Capacity remuneration mechanism** (CRM)

Regulatory market failures

- General regulatory uncertainty
- Missing money problem (inadequate price signals)

Market based failures

- Funding gap
- Uncertainty on relevant costs
- Uncertainty of revenues
- High risk area of investment
- High volatility
- Insufficiently responsive demand (security of supply issue)

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Examples of measures – GREECE

Greece pumped hydro plant (SA.57473)

- **Business plan** for 25 years was provided, which was modeled on the simulated hourly price formation of the Greek electricity market over 2025-2050.
- Total revenues expected will not be sufficient to cover its fixed and variable costs – **a funding gap** market failure was identified.
- Aid measure consisted of:
  - **Direct Grant** of EUR 250 million;
  - (**CFD - like**) Annual support paid over 25 years. Aid is intended to supplement commercial revenues.
- For initial years, annual support for projected to be higher due to low RES penetration.

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Examples of measures – LITHUANIA

Lithuanian Electricity storage (BES) (SA.63178)

- Business plan provided for 15 years, showing total costs at 120 MEUR
- A funding gap of EUR 100.8 million was identified.
- Forecasted revenues are however subject to significant uncertainty due to the transformation of the Lithuanian electricity market.
- Project will be financed by a grant which will not exceed EUR 100 MEUR.

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Examples of measures – POLAND

Polish capacity mechanism SA.46100

- Poland will phase out old inefficient power unites and was at risk of insufficient generation adequacy.
- The Polish System Operator would hold tenders to ensure sufficient capacity, potential participants included storage operators.
- Market was not able to regulate itself because:
  - Inability of prices to reflect scarcity: wholesale energy prices are not allowed to rise high enough to reflect the value of additional capacity;
  - Lack of certainty: Investors may be concerned that the Government or market regulator would act on a perceived abuse of market power, through the introduction of a price cap;
  - Market failures were quantified by means of a detailed probabilistic assessment and reviewed by external consultants.

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Examples of measures – Germany

- German Early Bird Measures (2022) SA.102303
  - Germany will organize innovation tenders, which span several technologies;
    - Only one or several RES technologies in combination with storage were allowed.
  - Aim was to test how to further incentivize the market and grid integration of RES installations
  - A **funding gap** was established, and a direct grant (market premium + feed-in tariff), however:
    - *"It is not possible to assess the extent to which a specific installation could be overcompensated as a result of a combination of increased electricity prices and the fixed market premium, since the profitability of individual installations in the call for innovation tenders cannot be estimated"*

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Future?

Britain’s largest pumped hydro scheme in 40 years gets £100m investment boost

21 Mar 2023

The European Commission has approved, under EU State aid rules a €17.7 billion Italian scheme to support the construction and operation of a centralised electricity storage system. The measure contributes to the achievement of the objectives of the European Green Deal and 'Fit for 55' package, by enabling the integration of renewable energy sources in the Italian electricity system.

The European Commission has approved, under EU State aid rules, a €1.3 billion French scheme to support the development of non-fossil flexibility technologies to ensure that the electricity supply matches demand during times of peak consumption. The measure contributes to the security of electricity supply and the decarbonisation of the economy, in line with the EU's strategic objectives relating to the European Green Deal.

Suomen Voima has announced details of a new energy storage venture named 'Noste' in the Kemijärvi region of Finland. The ambitious project involves the construction of 1-3 small-scale pumped-storage hydropower plants in Northern Finland, aimed at bolstering the country's green transition and enhancing energy balance. The estimated investment for this venture is set to reach up to €300 million.

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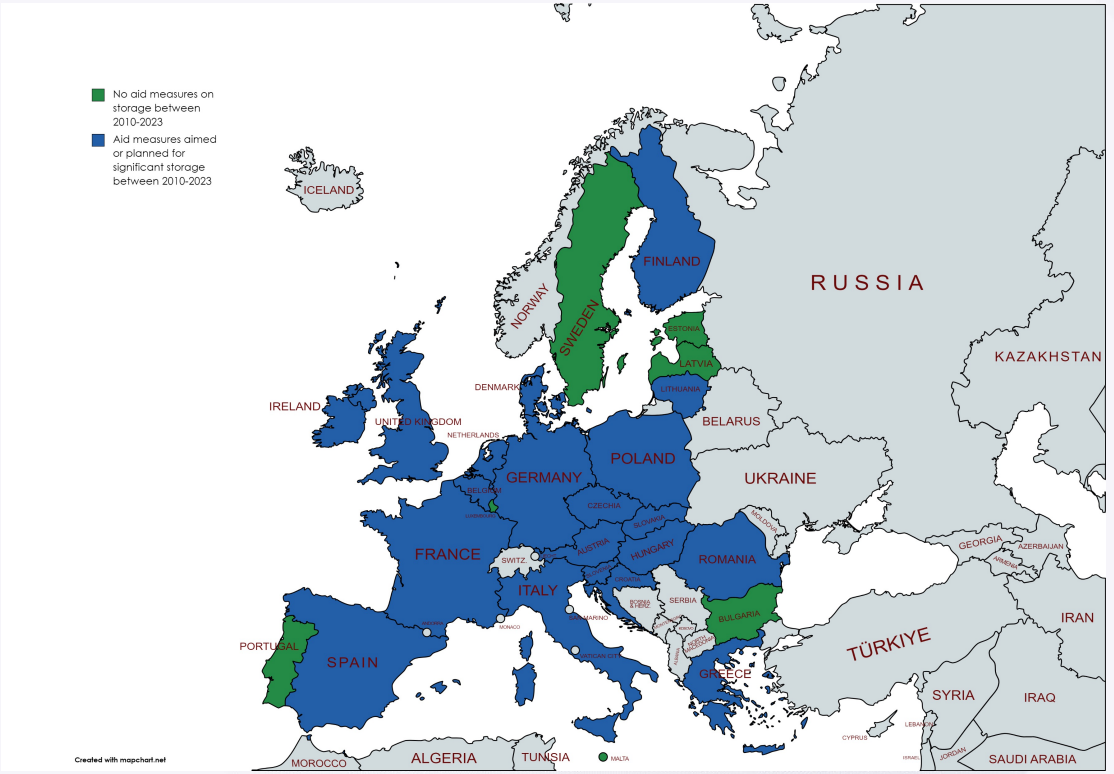
Takeways

- *What was supposed to be an exception has new become widespread and perhaps becoming the new norm?*
- *Majority of Member States have taken measures to support storage in one way or another, since electricity is a key input for other sectors;*
- *Each of the measures takes into account the particular situation in the particular Member States, with market failures for storage (pump-hydro for Finland, BES for Lithuania) already approved by the Commission.*



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Thank you!

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