Between New State Aid & More Rules

The Clean Industrial Deal & Energy Storage

MARCH 2025

LCPDelta

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Introduction

Helping clients to invest in and navigate the energy transition

LCP Delta provides data-driven research, technology products, consulting and advice to companies investing in and navigating the energy transition.

Our People

120+ Energy transition experts:

- Researchers
- Market Specialists
- Economists and policy experts
- Power system modellers
- Technical specialists

Our Expertise

Pan European client/research base covering:

- Grid-scale generation
- Storage
- Power trading
- Solar
- Networks
- Hydrogen
- Electrification of heat
- Flexibility services
- EV charging
- Home Energy Management

Our Clients

250+ clients across multiple sectors, including:

- Investors
- Utilities
- Governments and regulators
- Network operators
- Developers and asset owners
- OEMs
- C&I organisations
- Policy associations and NGOs
- Power traders
- Service providers

About EASE

The European Association for Storage of Energy (EASE), established in 2011, is the leading member-supported association representing organisations active across the entire energy storage value chain.

EASE **represents over 70 members** including utilities, technology suppliers, research institutes, distribution system operators, and transmission system operators.

EASE **supports the deployment of energy storage** to enable the cost-effective transition to a resilient, carbon-neutral, and secure energy system.

- **Awareness raising**
- **Information-sharing**
- **Market design**

European Market Monitor on Energy Storage 9.0

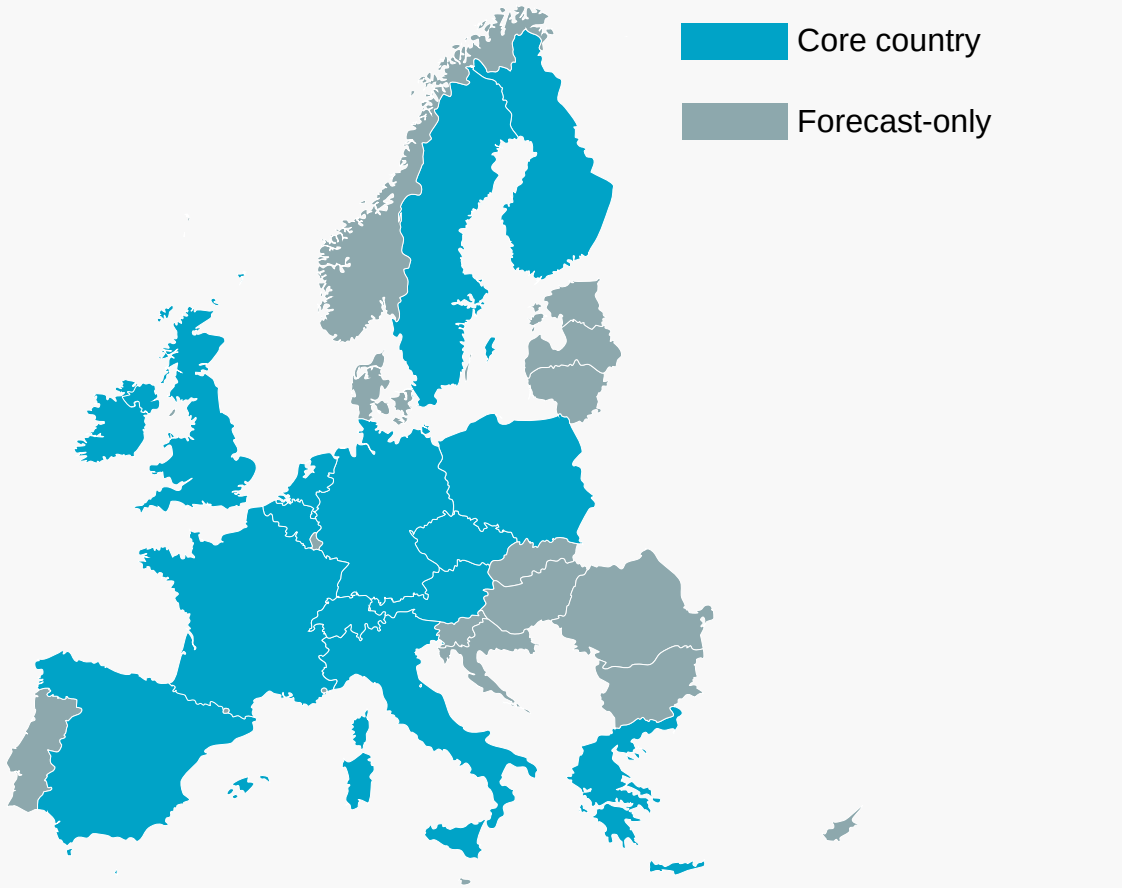
The 9th Edition of the Market Monitor on Energy Storage (EMMES) with updated views and forecasts on the European energy storage markets towards 2030.

15 core countries for which the report includes in-depth market and policy analysis

Data collection for different storage technologies: Pumped hydro, Electrochemical, Thermal and others

2030 forecasts for residential, commercial & Industrial and utility-scale electrochemical storage

EMMES 9.0 geographical coverage



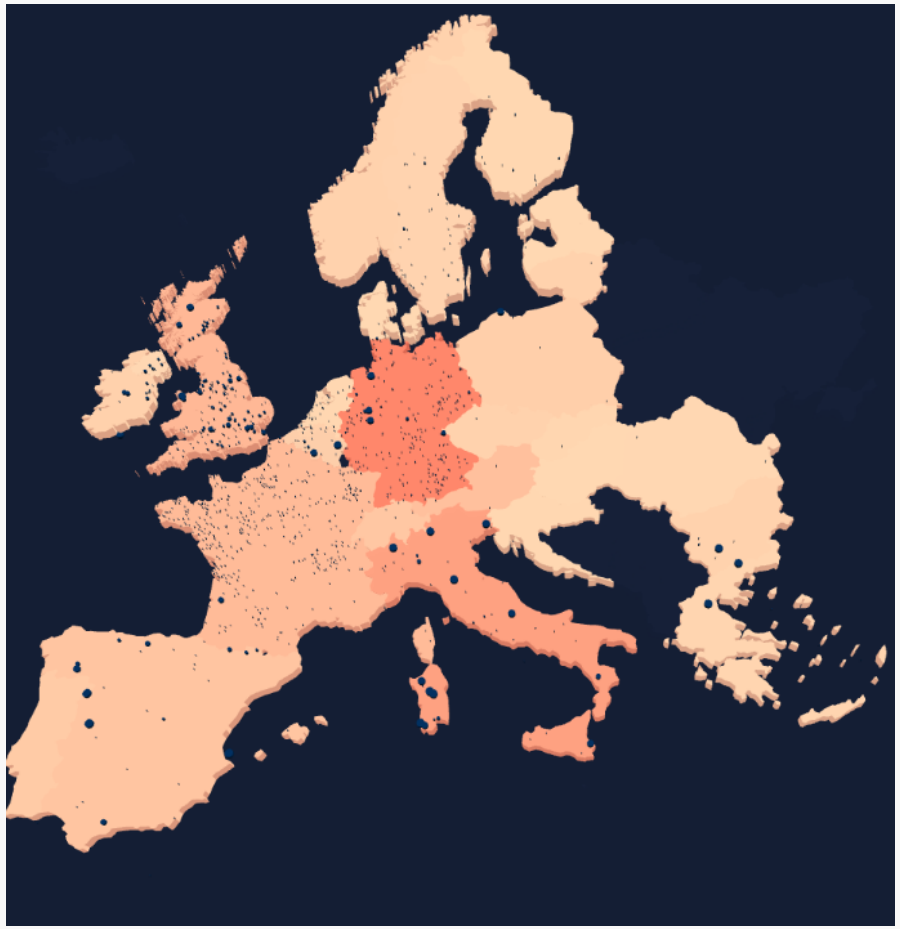
EMMES key figures

~89GW installed currently across different technologies

Cumulative installed capacity by technology

- **Pumped Hydro Storage** — 53 GW
- **Electrochemical Storage** — 35 GW
  - **FoM** — 13 GW
  - **BtM** — 22 GW
- **Large-scale Thermal** — 1 GWh
- **Other** — 0.3 GW

European map of power capacity



Source : LCP Delta's STOREtrack

Key numbers for 2024

	FoM storage capacity	BtM storage capacity	Total storage Power capacity
New installations in 2024	**4.9 GW** / **12.1 GWh**	**7.1 GW** / **9.8 GWh** / **>1 million homes**	**12 GW** / **21.9 GWh**
2023 - 2024 change	**60% (MW)** **280% (MWh)**	**-17% (MW)** **-17% (MWh)**	**3% (MW)** **35% (MWh)**

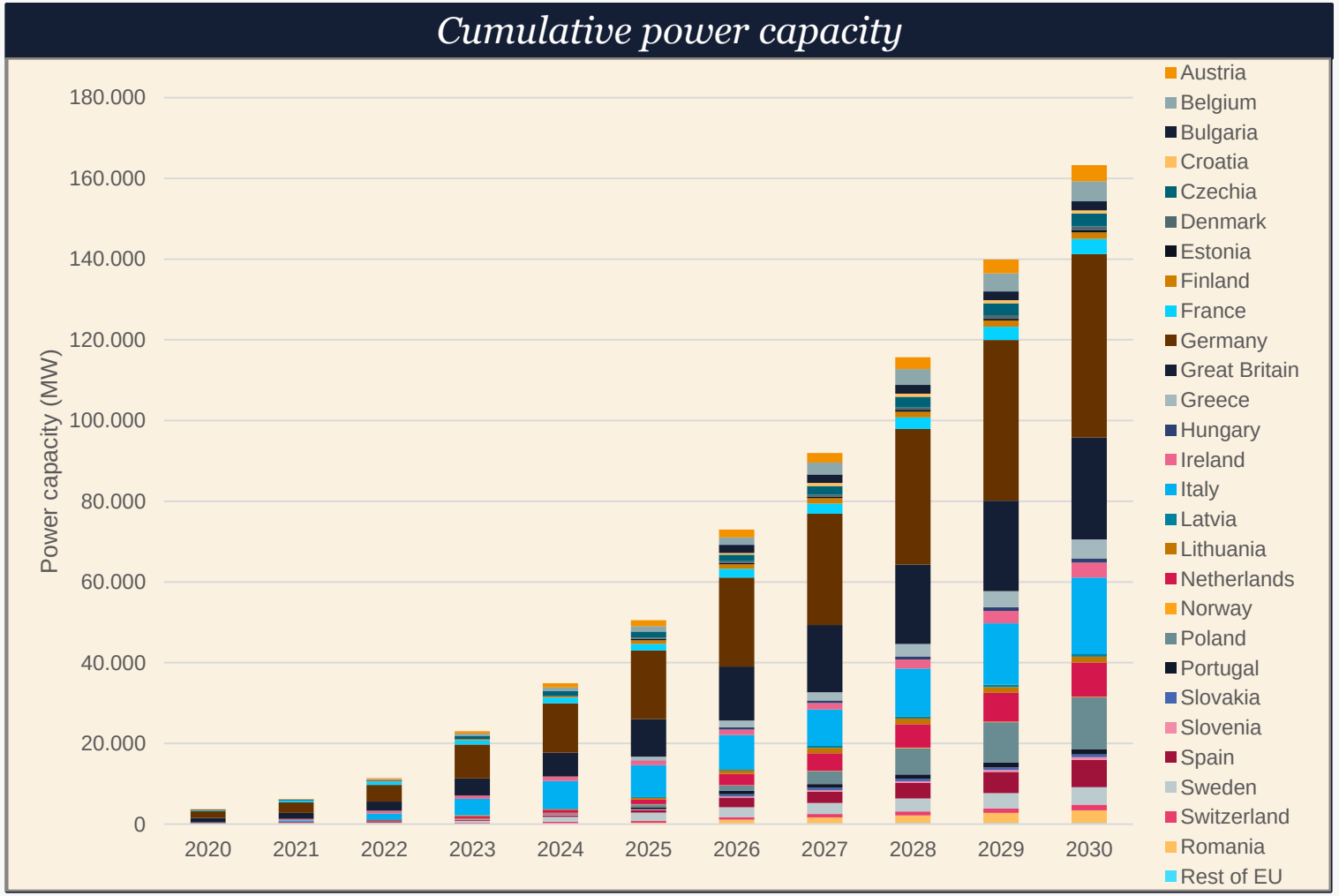
Additional 128GW/300GWh of electrochemical storage added to European grids by 2030

35 GW

2024 cumulative installed capacity

163 GW

2030 cumulative installed capacity

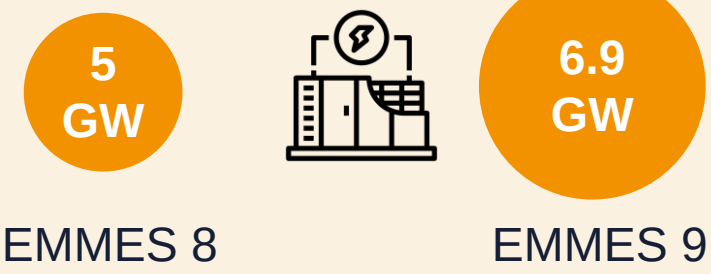


Behind-the-meter storage: market trends and analysis

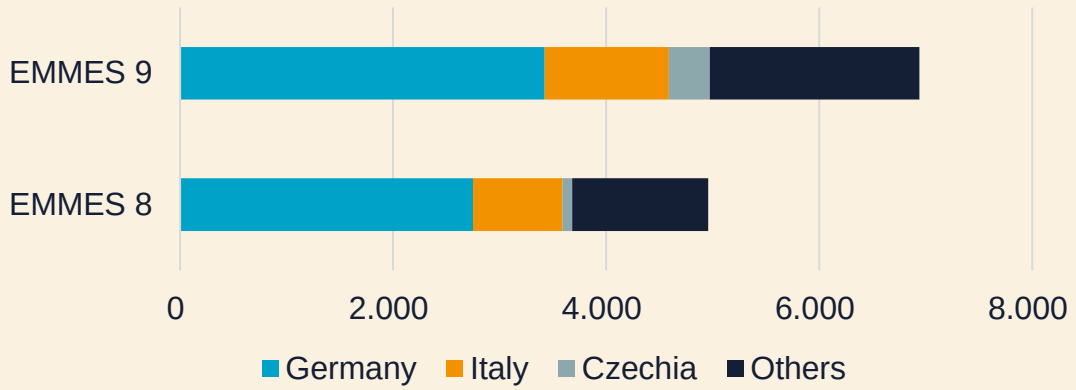
Analysis of 2024 deployment : BtM

What was the difference between reality and EMMES 8 forecast?

BtM Storage in 2024



Key markets comparison (MW)



We underestimated the size of BtM installations by ~1.9 GW due to differences in the major markets – Italy and Germany – as well as underestimating deployment in some key markets.

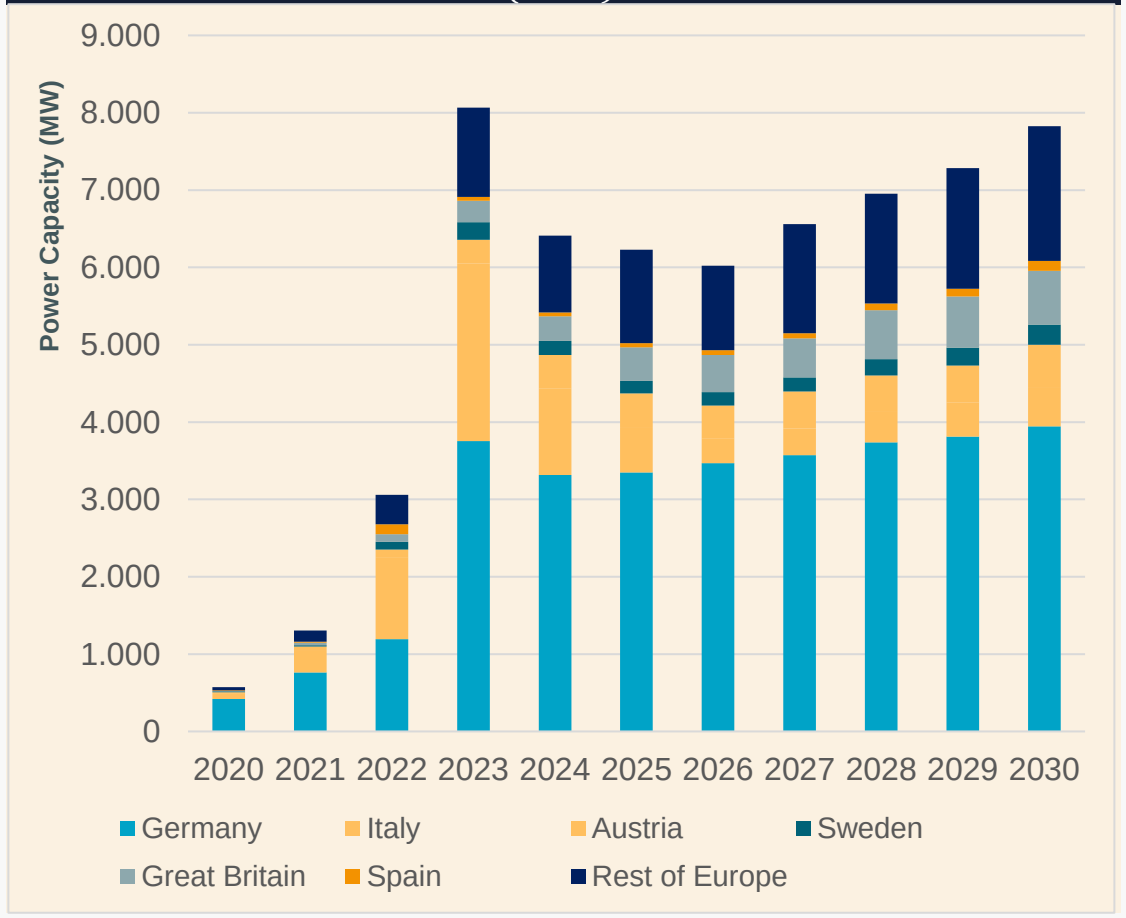
The decline in the residential storage markets in Italy and Germany was smaller than we expected

Variance in other markets

Improved market visibility meant we increased average power and storage capacities

Residential European market forecast

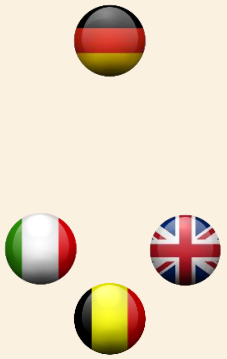
Residential storage market forecast : Annual capacity (MW)



Reduced deployment in Europe's top markets – Italy and Germany

Removal / reduction of important subsidies in key markets

Focus countries

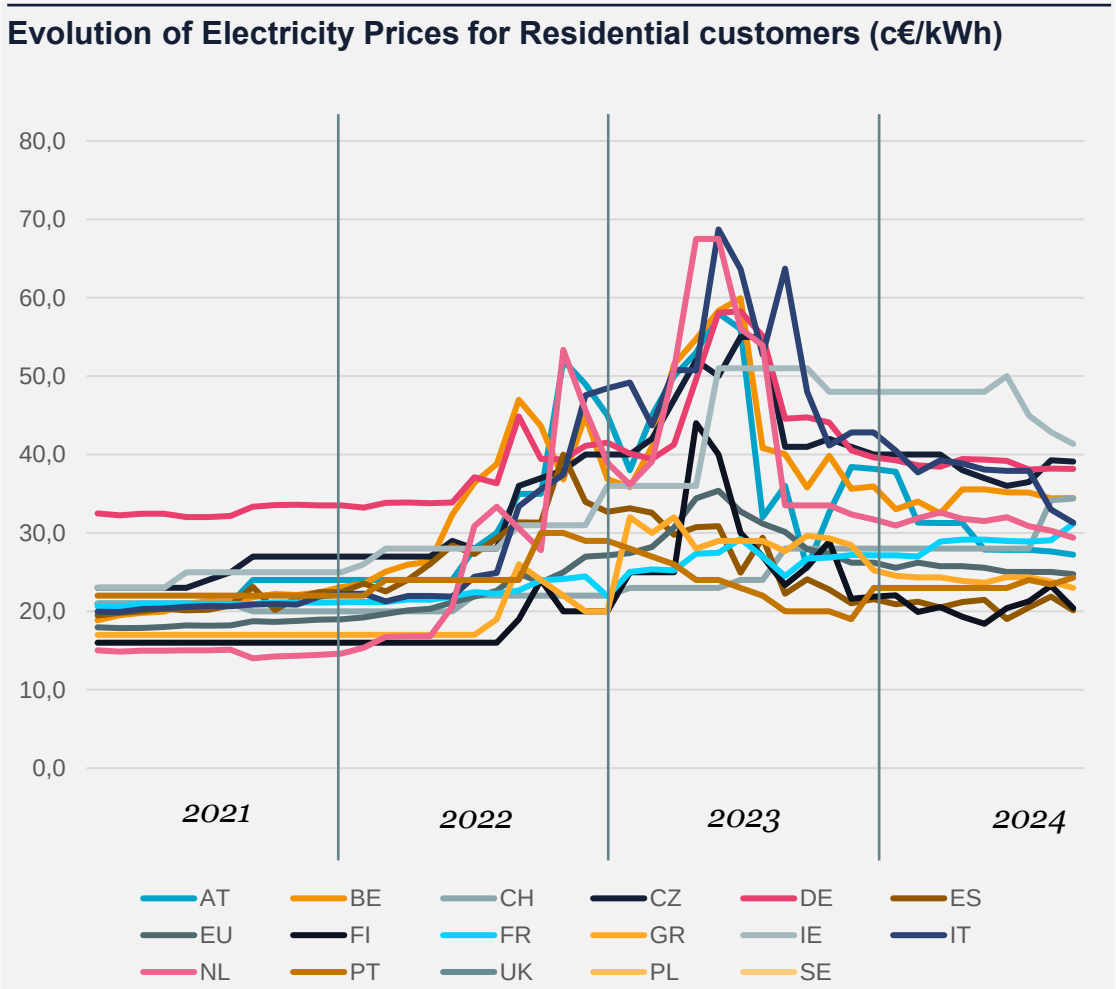


PV market developments affecting long-term deployment

Dynamic tariffs and changing remuneration for solar PV will provide more incentives in the future

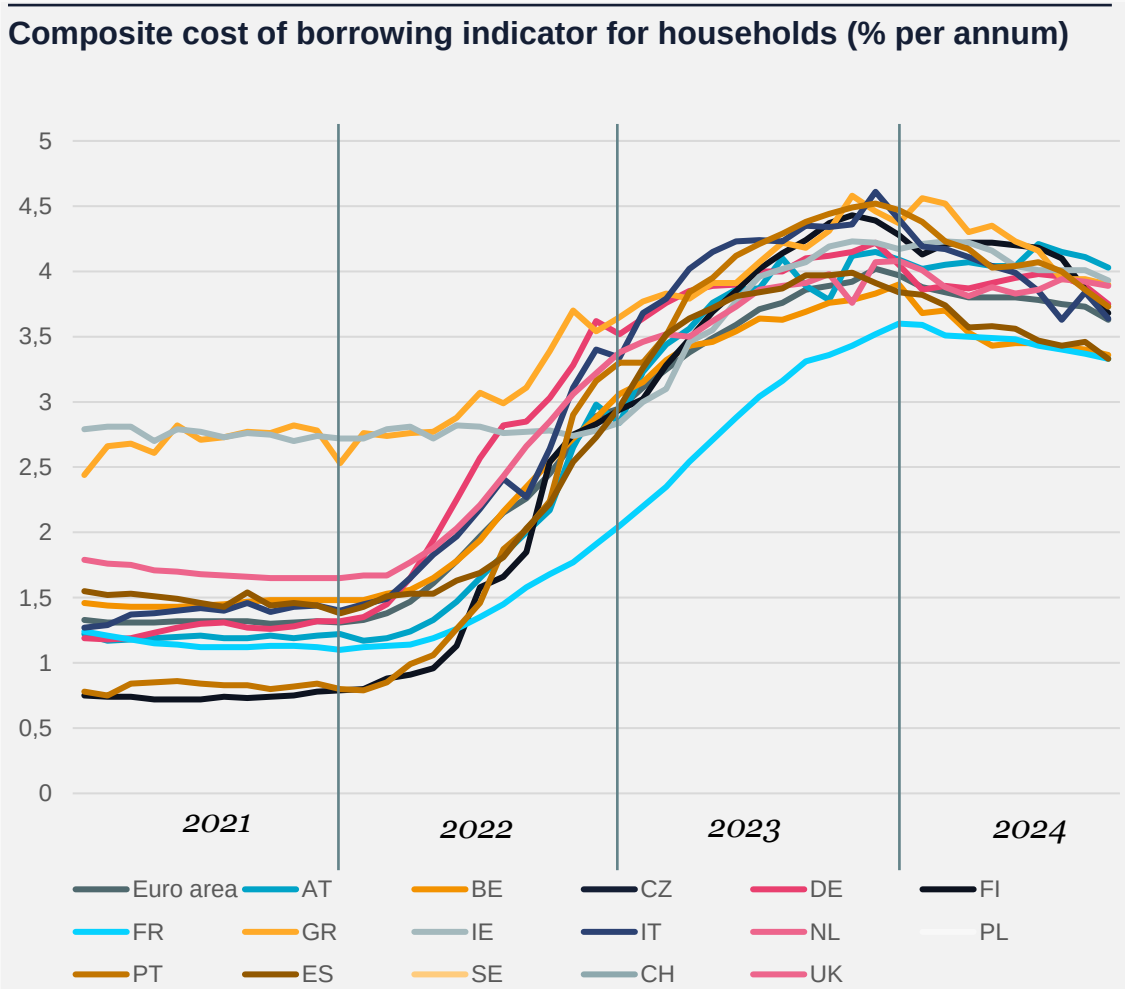
The energy crisis has been a weaker driver from H2 2023. Higher borrowing costs and cost-of-living pressures have also subdued demand in 2024.

Evolution of Electricity Prices for Residential customers (c€/kWh)



Source: Eurostat

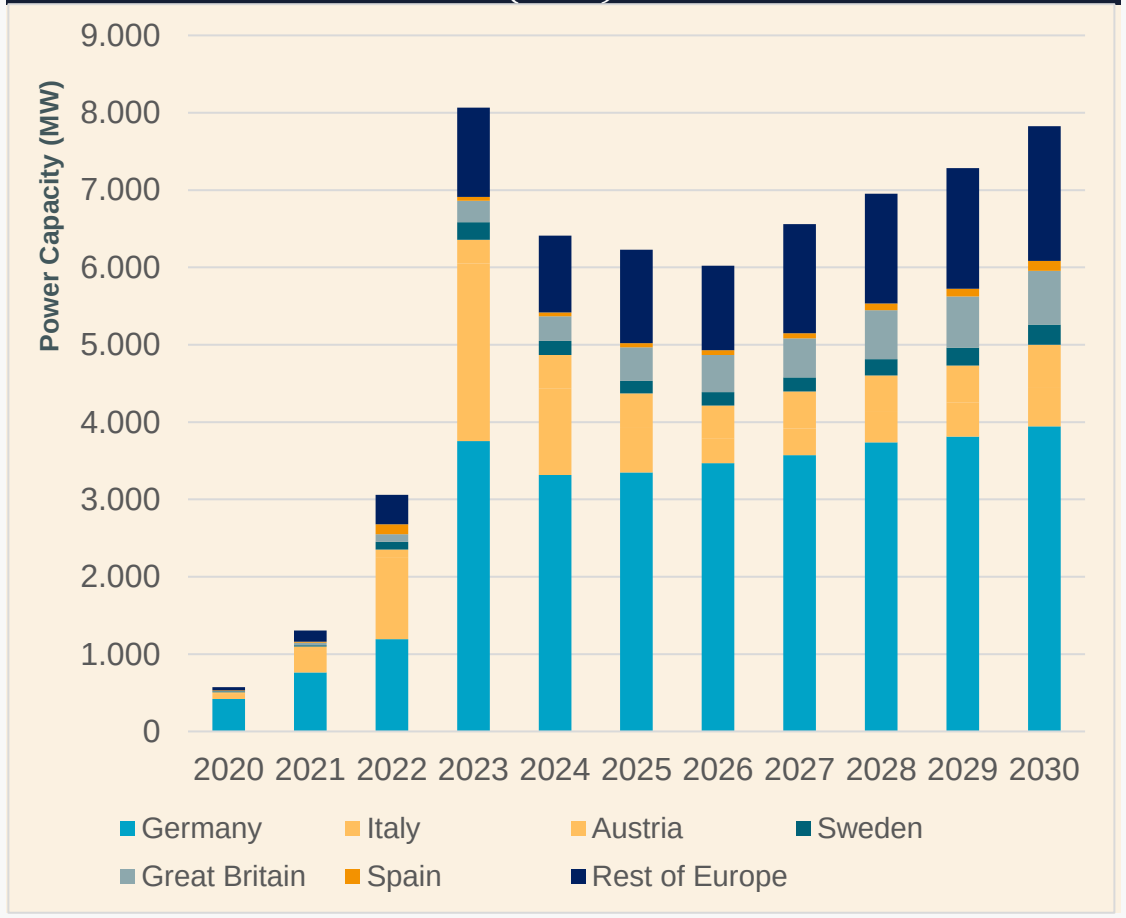
Composite cost of borrowing indicator for households (% per annum)



Source: European Central Bank

Residential European market forecast

Residential storage market forecast : Annual capacity (MW)



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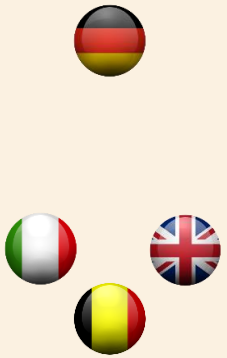


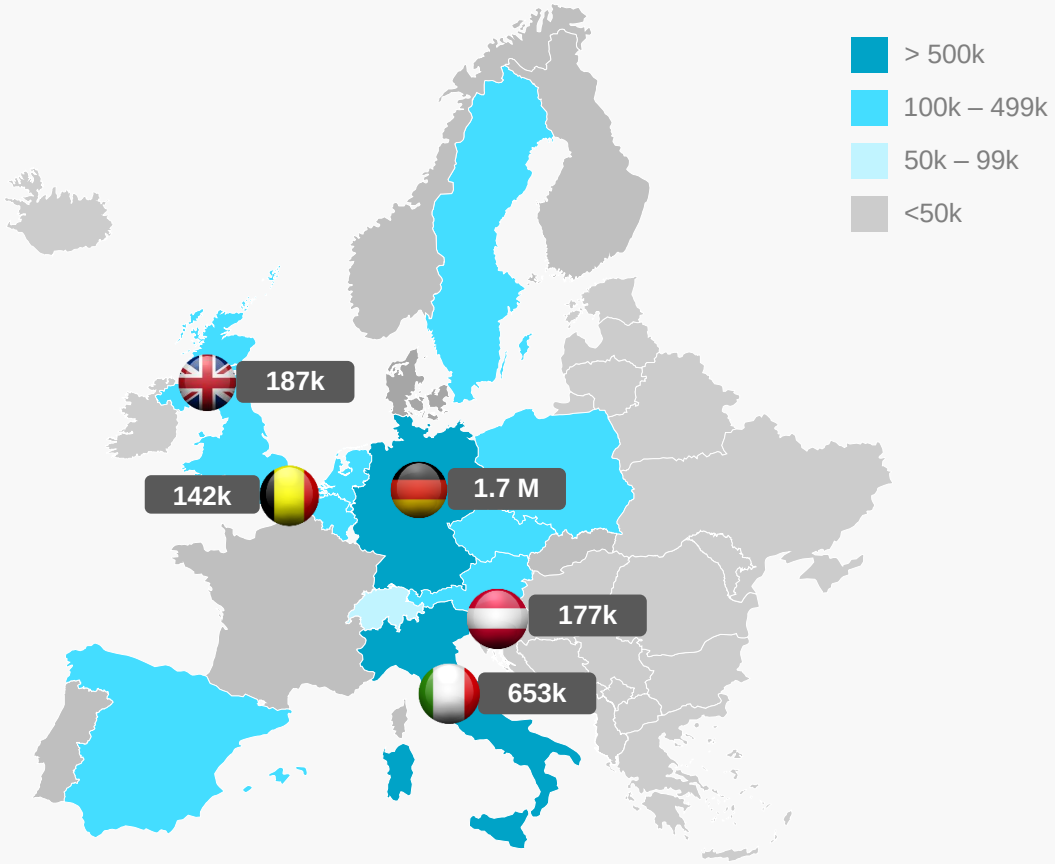
PV market developments affecting long-term deployment

Dynamic tariffs and changing remuneration for solar PV will provide more incentives in the future

Europe has 17 million solar homes and 3.4 million battery homes

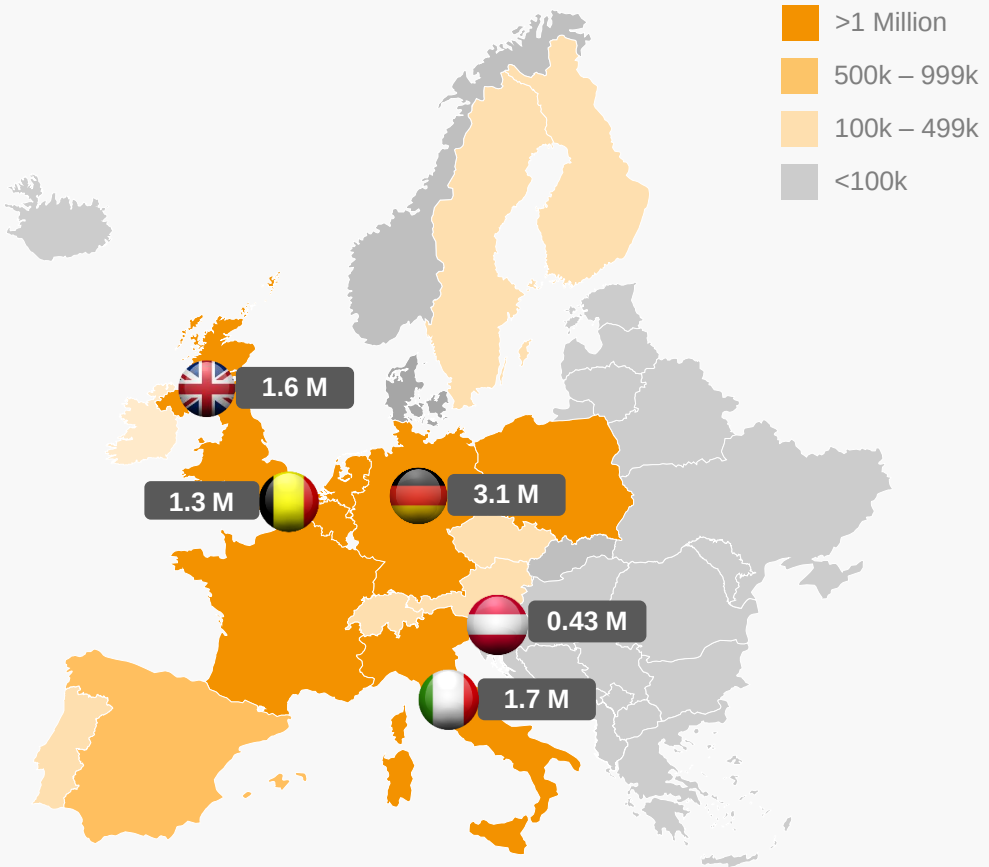
Residential battery installed base

- number of systems *(end 2024)*



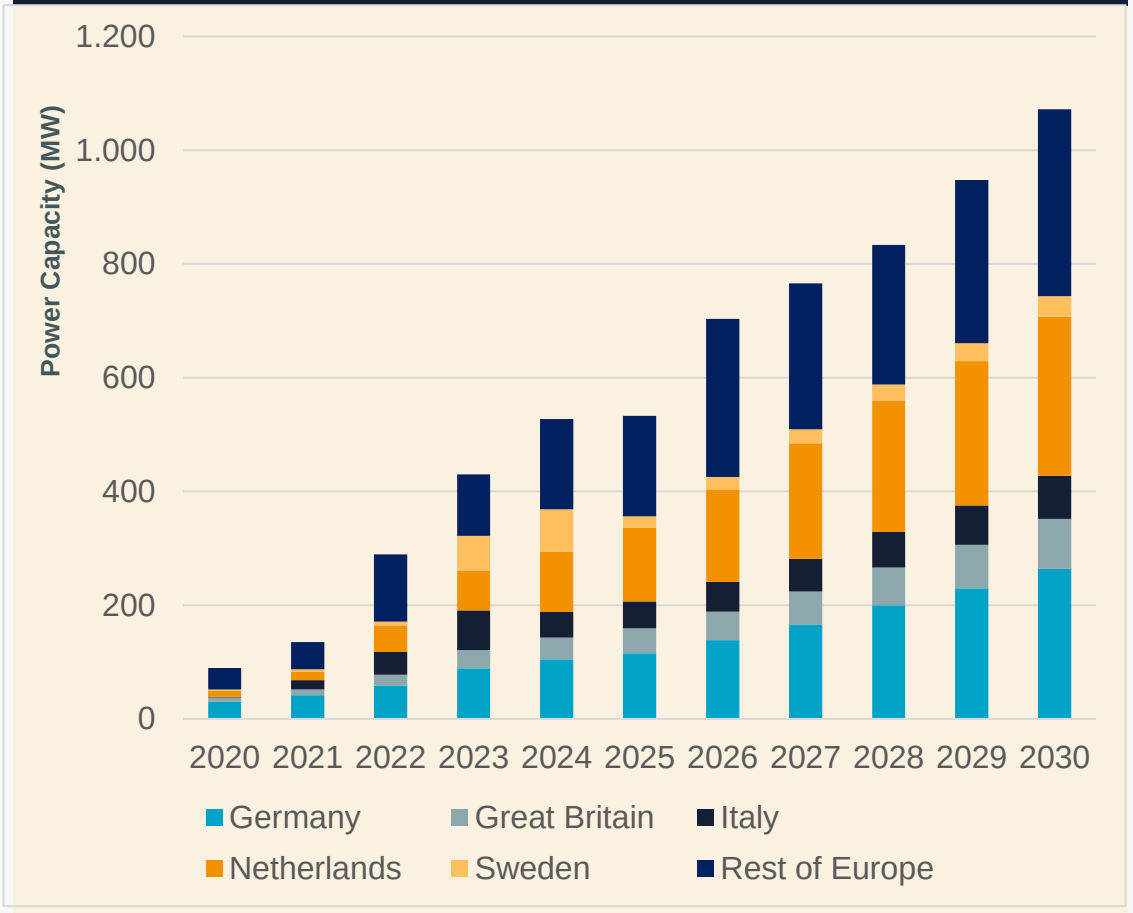
Residential solar PV installed base

- number of systems *(end 2024)*



C&I European market forecast

C&I storage market forecast : Annual capacity (MW)



Electrification driving unique use-cases and a need for storage

Accessibility to flexibility revenues

Focus countries

Slower PV deployment impacted growth rates, especially in smaller systems

Improved outlook for the majority of the market drivers by 2030

Front-of-the-meter storage: market trends

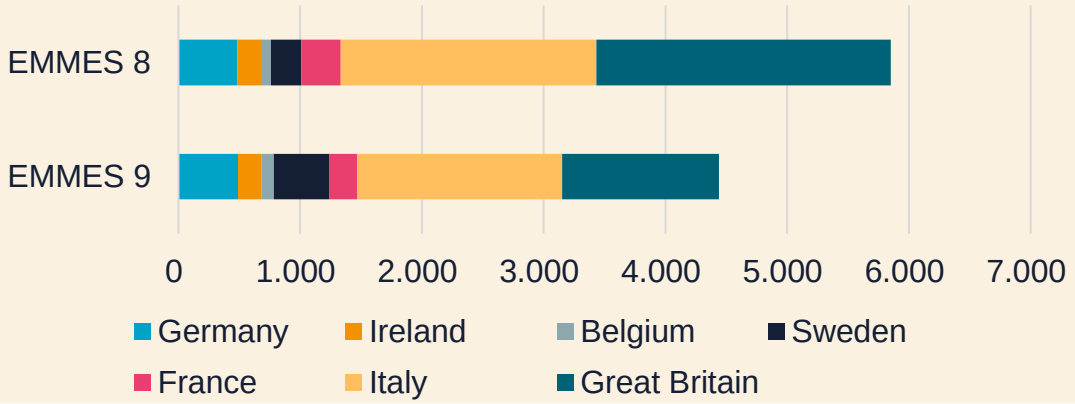
What is the difference between what was deployed in 2024 and our forecast last year?

FoM Storage in 2024

6.3 GW — EMMES 8

4.9 GW — EMMES 9

Key markets comparison (MW)



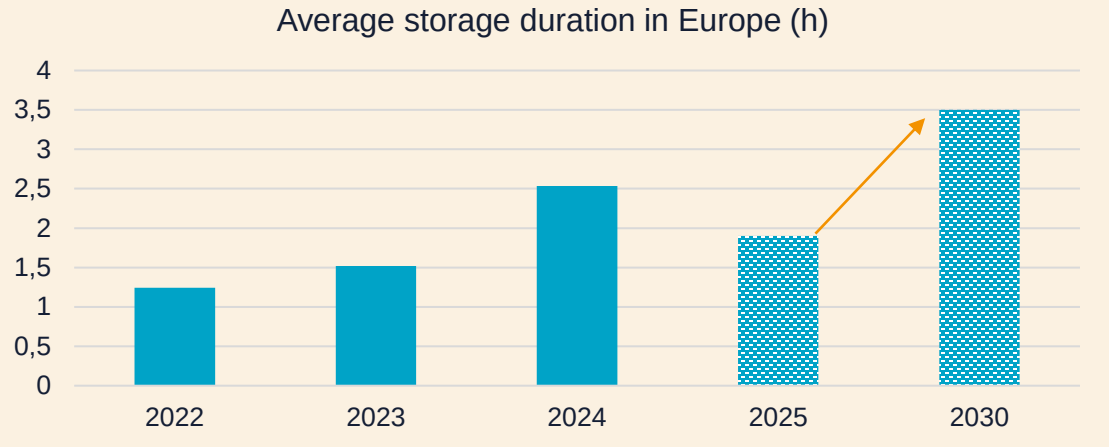
Projects in Great Britain delayed and not connected as expected, including 1.1GW projects with T-1 capacity Market contracts

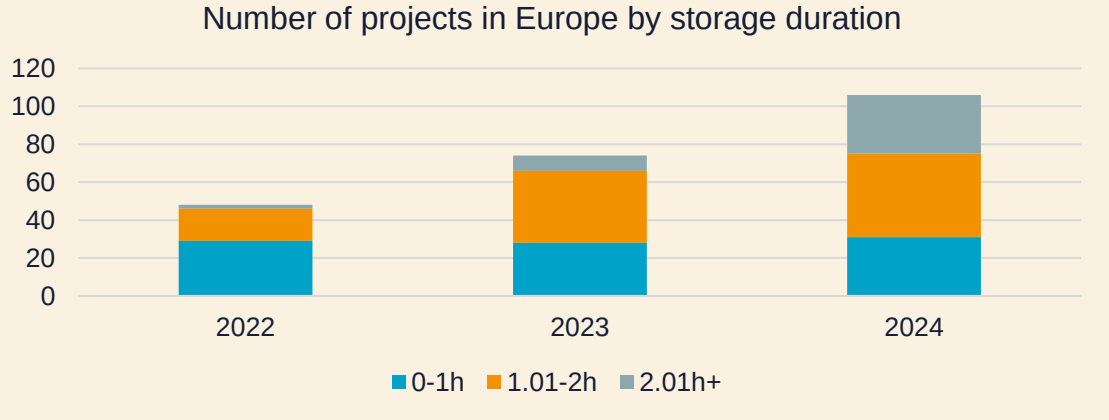
Some larger differences in Italy and Sweden

Accurate outlook in most other markets

FoM Storage Duration

Project duration trends (for projects >10MW)





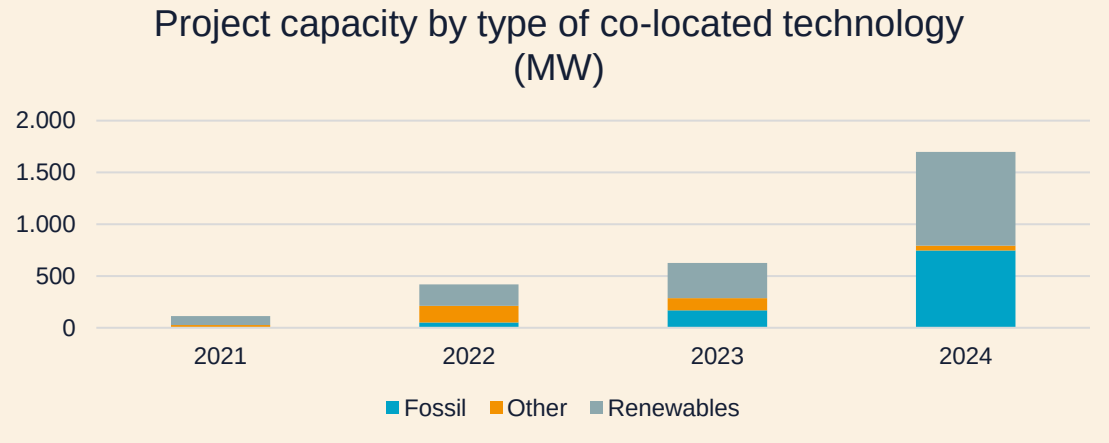
The average project duration grew from 1.5h to 2.5h in 2024

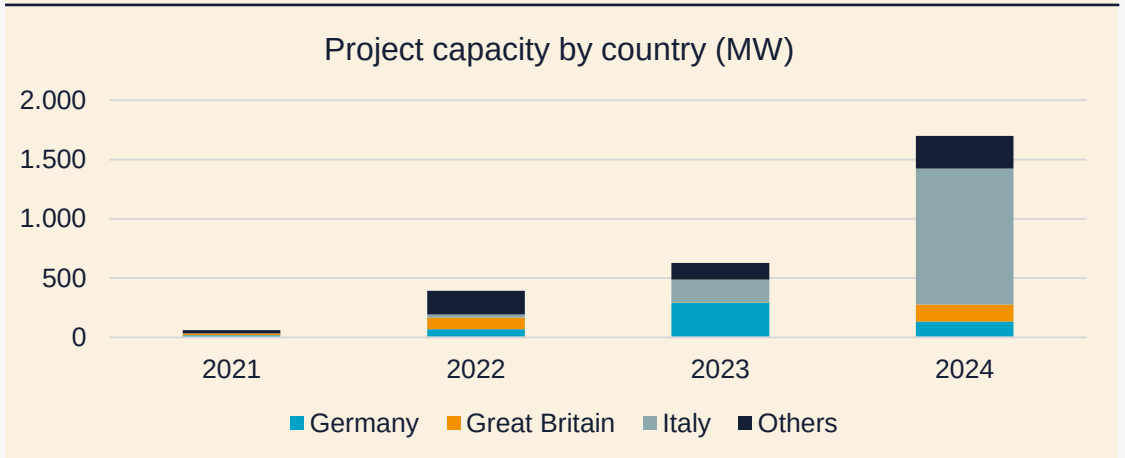
We forecast a drop to 1.9h in 2025

The scale of projects will increase aggressively by 2030

Co-location of storage with other technologies

Project duration trends (for projects >10MW)





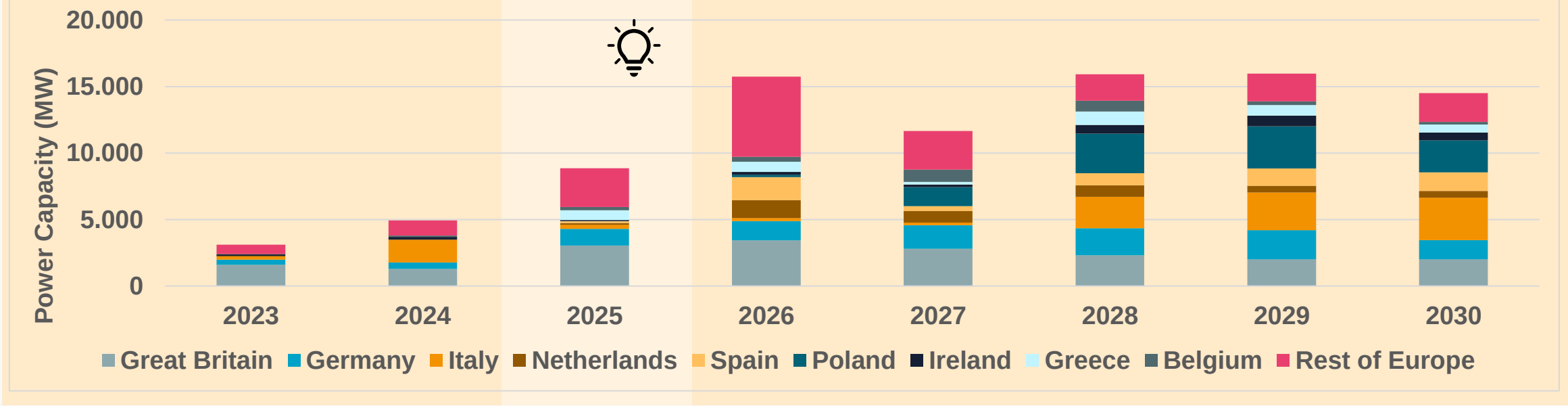
Co-locating batteries with conventional generation is common

Co-location with renewables is growing

We forecast strong capacity growth in co-location with renewables by 2030

Forecast: 2025

FoM storage market forecast: New capacity additions (MW)



Commissioning the long construction queue

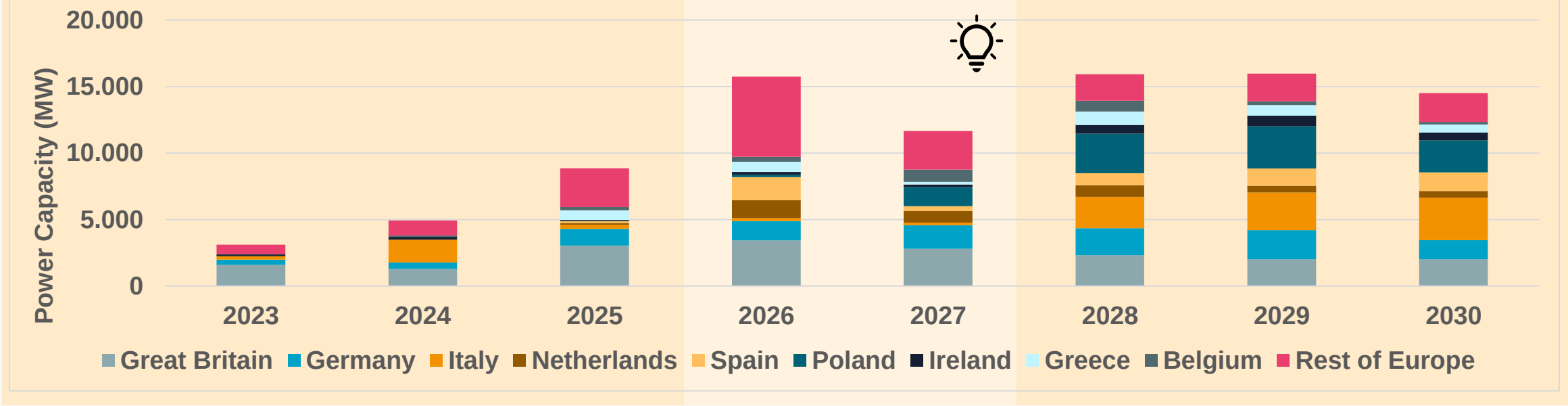
1-1.5GW in the Nordics, with a large peak in Finland

Grid boosters

Commissioning of the 2023-2024 auctions projects in Greece

Forecast: 2026-2027

FoM storage market forecast: New capacity additions (MW)



2026 peak driven support schemes and the Recovery and Resiliency Facility

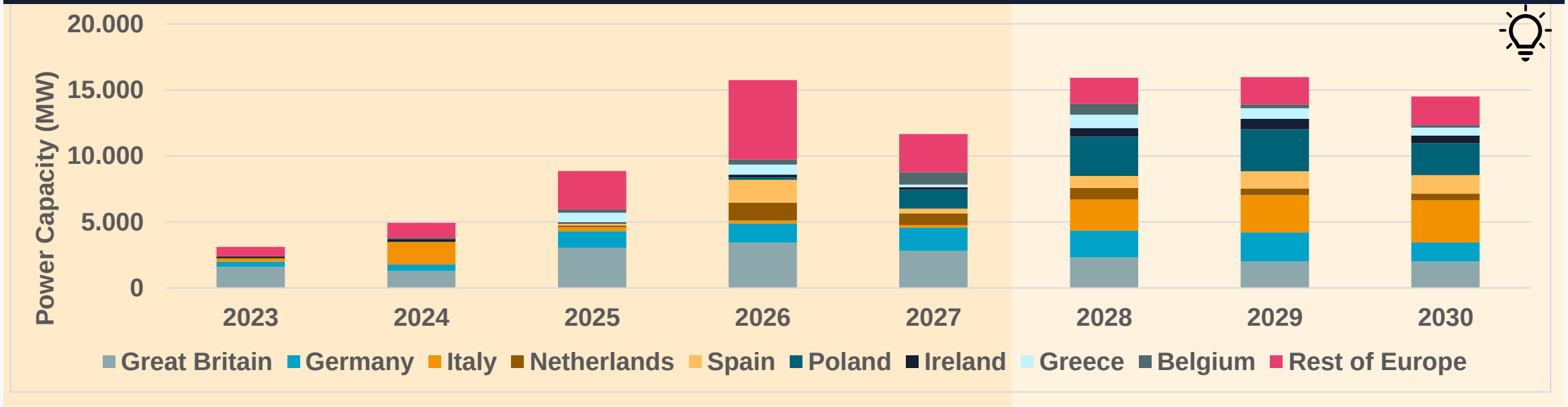
Deployment rate drops in 2027

Growing number of merchant projects

Growing challenges in delivering the pipeline

Forecast: 2028-2030

FoM storage market forecast: New capacity additions (MW)



50GWh of MACSE projects delivery years

Bulk of Polish Capacity Market contracts gets delivered

Dropping project CAPEX

EMD flexibility targets

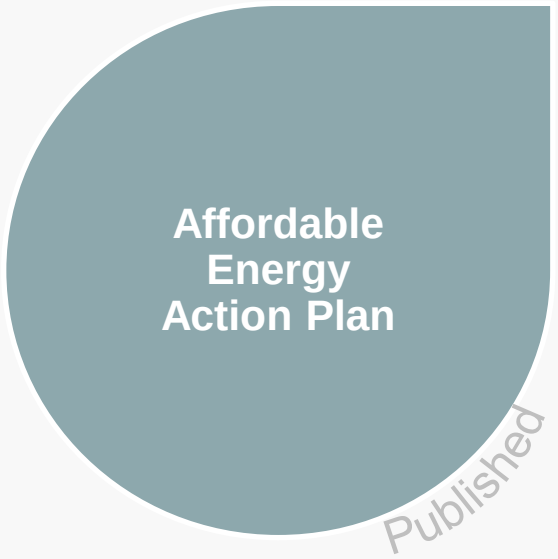
Growing project delivery challenges

Clean Industrial Deal and New State Aid Rules

Clean Industrial Deal and New State Aid Rules

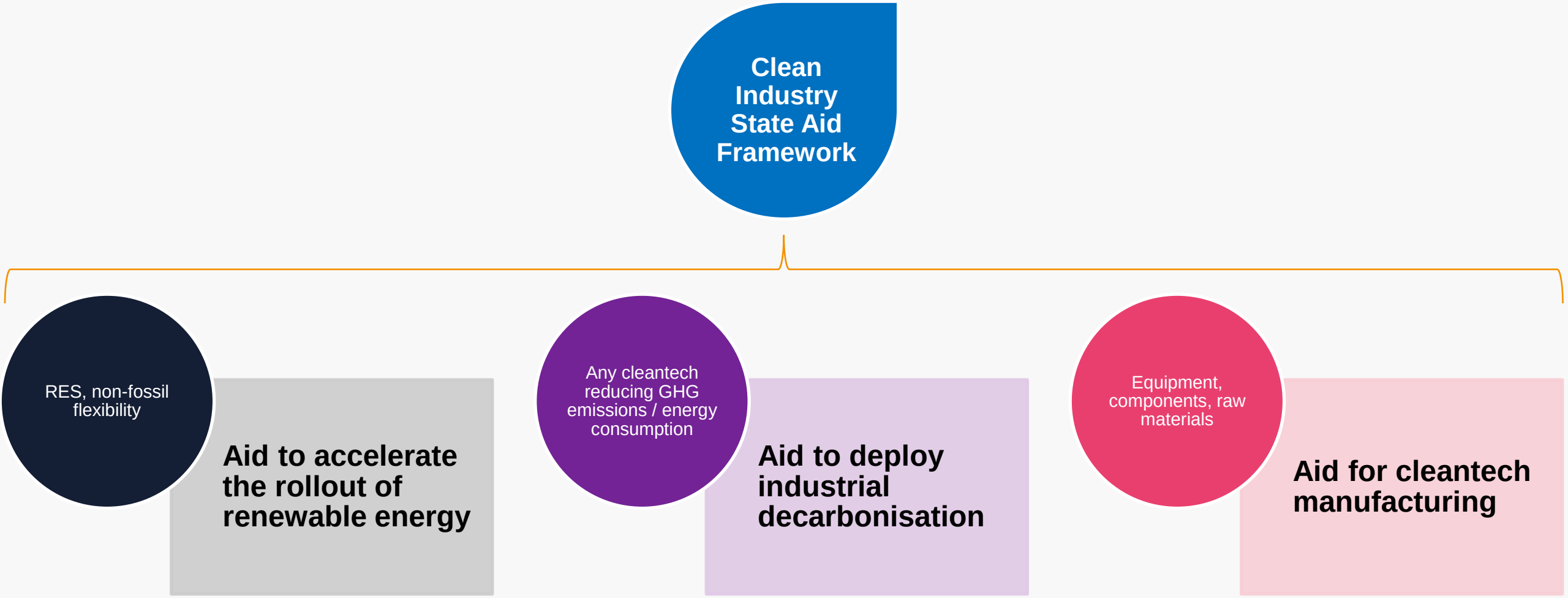
"Where is the money?"

The Clean Industrial Deal goes beyond state aid: it's a comprehensive initiative to reform various aspects of the EU economy, including key measures impacting energy storage, a.o.:



Clean Industry State Aid Framework

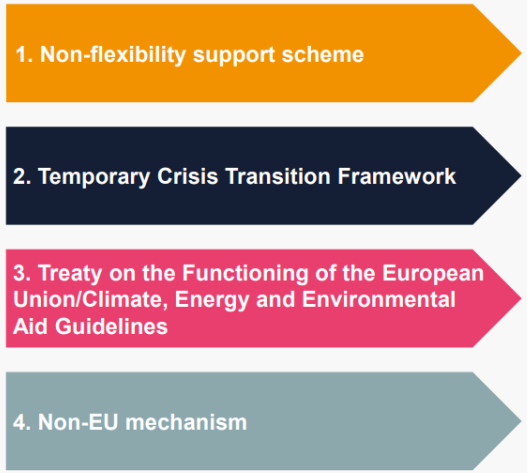
Overview



Clean Industry State Aid Framework

Tackling complexity

In EMMES 8.0, we identified several options to deploy energy storage state aid, creating what we could call "a support scheme spaghetti bowl"



With the new European Union State Aid Framework, efforts to streamline the options at Member States' disposal – with some success

1. Investment Aid to accelerate RES rollout
2. Aid for non-fossil flexibility support schemes
3. Aid for Capacity Mechanism
4. Aid to deploy Industrial Decarbonisation

Clean Industry State Aid Framework

1. Investment Aid to accelerate RES rollout	Significance for ES: medium	Expected deployment from: 2025
Open to	RES but also a.o. “electricity storage”, “thermal storage”, RFNBOs	
Type of facility	“Newly installed” or “repowered”	
Timeline	Supported projects must be in operation within 36 months (except PHS, RFNBOs)	
Type of aid	Investment aid / Direct price support scheme (does not apply to ES)	
Granted through	Competitive bidding process or administratively	
Duration of the aid measure	NA	
Aid volume	NA	
Contingent to	ES being able to participate in wholesale market, (non-) frequency ancillary services, market-based-redispatching / congestion management services	

Clean Industry State Aid Framework

2. Aid for non-fossil flexibility support schemes

Significance for ES: high | **Expected deployment from: 2027**

Open to	"Non-fossil flexibility", including "at least storage of electricity"
Type of facility	"New investment"
Timeline	NA
Type of aid	Direct grant
Granted through	Competitive bidding process
Duration of the aid measure	No longer than 5 years, contracts no longer than 10 years
Aid volume	Mandatorily–assessed flexibility needs at different timeframes *minus* expected market-based investment *minus* alternatives such as additional RES, grid development, curtailment
Contingent to	Mitigation measures identified in the flexibility needs assessment implemented within 2 year after said assessment; ES being able to participate in wholesale market, (non-)frequency ancillary services, market-based-redispatching / congestion management services

Clean Industry State Aid Framework

3. Aid for Capacity Mechanism

Significance for ES: high | **Expected deployment from: 2025**

Open to	All technologies meeting CO_2 emission limits; above 1MW. Stricter emission limits are optional
Type of facility	NA
Timeline	NA
Type of aid	Capacity Mechanism
Granted through	Competitive bidding process
Duration of the aid measure	No longer than 10 years, for agreements of up to 15 years
Aid volume	NA
Contingent to	Member States presenting market reform plan
!	If a State has both a CM and a flexibility measure, flexibility needs and capacity mechanism needs to be procured in the same, co-optimised auction. Except justified cases, capacity mechanisms and non-fossil flexibility measures cannot co-exist

Clean Industry State Aid Framework

4. Aid to deploy Industrial Decarbonisation

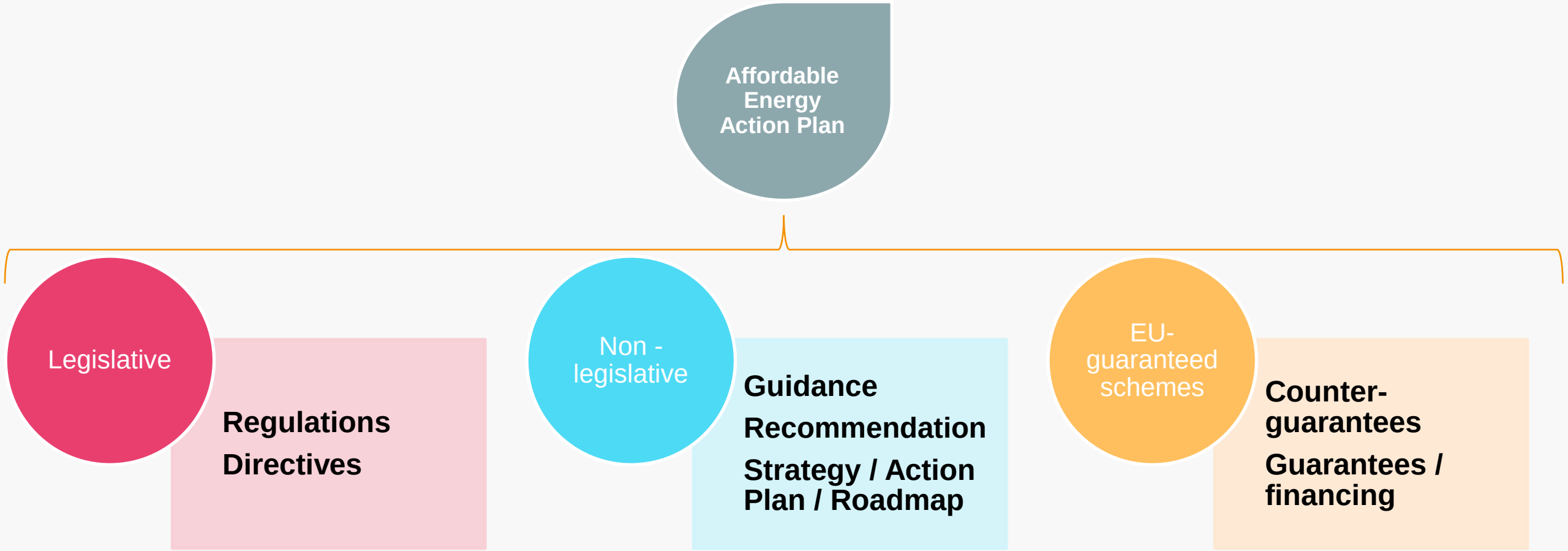
Significance for ES: medium | **Expected deployment from: 2027**

Open to	All technologies
Type of facility	NA
Timeline	Supported projects must be in operation within 36 months
Type of aid	Direct grants, repayable advances, loans, guarantees, tax advantages
Granted through	Individual aid, competitive bidding
Duration of the aid measure	NA
Aid volume	NA
Contingent to	NA

The Affordable Energy Action Plan

A key component of the Clean Industrial Deal

A combination of different policymaking tools



The Affordable Energy Action Plan

The other part of the Clean Industrial Deal

On 26 February 2025, the European Commission announced its Action Plan for Affordable Energy

Lowering energy costs

Action 1: Making electricity bills more affordable
Action 2: Bring down the cost of electricity supply
Action 3: Improve gas markets for fair energy prices
Action 4: Energy efficiency: delivering energy savings

Attracting investments

Action 6: A tripartite contract for affordable energy for Europe's industry

Completing the Energy Union

Action 5: Completing the Energy Union

Ensuring crisis preparedness

Action 7: Security of supply for price stability
Action 8: Price crisis preparedness

The Affordable Energy Action Plan

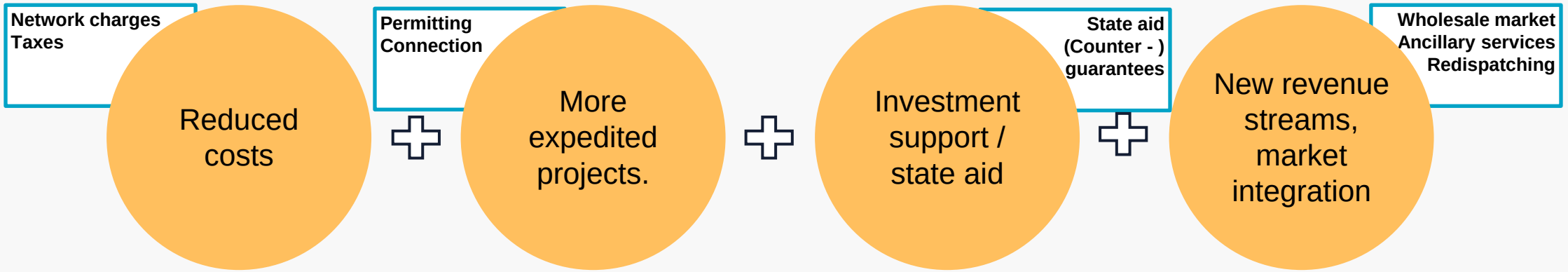
A selection of initiatives to keep an eye on

Initiative	Legally binding?	Expected impact	Launch by	Impact by
New network tariff design	TBD	Improvement of network tariffs for storage, e.g. removal of double charging	Q2 2025	Ca. 2026
Energy Taxation Directive revision	Yes	Prohibition of double taxation for ES, reduction of electricity taxes	Q4 2025	Ca. 2027
Guidance and legislative proposals to accelerate ES permitting	Yes (TBC)	Legal clarity on ES acceleration areas and State's responsibilities, shorter permitting times	Q2 2025 / Q1 2026	Ca. 2026 / 2027
European Grid Package	Yes (TBC)	A.o. shorter grid connection times	Q1 2026	Ca. 2027 / 2028
Programme for EIB / EU backed counter-guarantees for business signing PPAs	/	Further PPA deployment, more stable, long-term price environment	Q2 2025	Ca. 2026

Conclusions

Promising policy developments

All in all, the Clean Industrial Deal and its initiatives will drive energy storage deployment



The impact of the discussed initiatives may not be immediate, but is expected to be significant – mostly materialising from 2027 onwards


Any questions?