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EU Battery Storage Market Review 2025

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Foreword

Welcome,

We are pleased to present the inaugural edition of the EU Battery Storage Market Review, a new publication that complements our well-established annual European Battery Storage Market Outlook released every summer. With this report, SolarPower Europe strengthens its market intelligence offering for a sector that is rapidly becoming indispensable to Europe's energy transition.

This report comes at a defining moment. In 2025, Europe's battery storage market entered a new phase of scale and maturity. With 27.1 GWh of new capacity installed, the European Union achieved its 12th consecutive record-breaking year of growth, confirming battery storage as the fastest-scaling clean energy technology in the region. At the same time, the structure of the market has fundamentally changed. For the first time, utility-scale battery systems delivered most of the newly installed capacity. Behind-the-meter storage has become a standard feature of new residential solar systems in leading EU markets, while large-scale batteries are now increasingly planned together with solar power plants or developed as standalone assets.

The 45% year-on-year growth recorded in 2025, marking a return to faster expansion after the slowdown observed in 2024, could not have come at a more critical moment. Solar power has carried most of the responsibility for expanding the share of low-cost renewables to approach half of EU electricity generation in 2025, yet annual solar capacity additions declined for the first time in a decade. With grid expansion lagging renewable deployment, flexibility has emerged as the key enabler of further progress. Batteries are now stepping in to deliver flexibility rapidly and at scale, stabilising grids, reducing curtailment, supporting security of supply, and lowering system costs. The strong expansion of large-scale batteries in 2025 shows that the technology is mature, investors are ready, and the system value of storage is clear when market frameworks are aligned.

Yet this record year must be seen in its full context. Despite a tenfold expansion of the EU battery fleet since 2021, reaching more than 77 GWh today, Europe remains far from where it needs to be. To ensure the energy system can meet its 2030 targets, the EU must repeat this tenfold growth achievement once again, now scaling battery storage towards 750 GWh within the next five years. Current annual deployment levels, while encouraging, are still insufficient to reach that goal.

The 2025 market data therefore carries a dual message of progress and warning. On the positive side, utility-scale batteries have become the engine of EU deployment, delivering 55% of all new capacity as permitting improves, market access widens, and revenue opportunities become clearer. At the same time, behind-the-meter storage tells a different story. Residential battery installations declined for the second consecutive year, reflecting the slowdown in rooftop solar markets and the phase-out of emergency support schemes. Commercial and industrial batteries grew modestly but remained far below their potential. A resilient and cost-efficient energy system requires both centralised and decentralised flexibility, making the reactivation of residential and commercial storage a priority.

This edition of the EU Battery Storage Market Review also highlights the state of Europe's battery manufacturing industry. While the EU has built a substantial industrial base across materials, cells, and pack assembly, production remains largely focused on EVs and far from forming a fully integrated, home-grown supply chain for stationary battery energy systems. If the EU is serious about energy security and industrial leadership, battery deployment and manufacturing must advance hand in hand.

Recognising the critical role of BESS in decarbonising Europe's energy system, SolarPower Europe launched the Battery Storage Europe Platform (BSEP) to advance the business case and regulatory frameworks for storage, and published a Flexibility Strategy in November 2025.

The path forward is clear: Europe must accelerate BESS deployment across all segments by a factor of 10 in five years, build resilient and affordable supply chains, and ensure high standards for safety, quality, and sustainability. If policymakers act decisively, battery storage will unlock the next chapter of Europe's renewable ambitions, supporting the vision of an Autonomous Union as highlighted in the priorities of the Cyprus EU Presidency. This new annual EU Battery Storage Market Review is designed to serve as a reference point to observe, analyse, and guide the technology's progress.

Enjoy the report,

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EU Battery Storage Market Review 2025

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Methodology:
All figures are based on SolarPower Europe's best knowledge at the time of publication.

Segmentation for BESS: Residential (<20 kWh); Commercial and Industrial (20 kWh to 1,000 kWh); Utility-scale (>1,000 kWh). For residential and commercial BESS, segmentation is based on the type of PV system coupled with the storage device. Industrial and utility-scale BESS can be either stand-alone or hybridised with industrial and large-scale power plants. SolarPower Europe's methodology includes only grid-connected battery storage systems.

Segmentation for solar PV: Residential (<10 kW), except for Austria, Germany and Switzerland where the segmentation is extended to <20 kW; Commercial (<250 kW); Industrial (<1,000 kW); Utility-scale (>1,000 kW, ground-mounted). SolarPower Europe's methodology includes only grid-connected solar PV systems.

Installed PV capacity is always expressed in DC. All figures are based on SolarPower Europe's best knowledge at the time of publication.

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BATTERY STORAGE EUROPE PLATFORM

The Battery Storage Europe Platform brings together industry leaders representing the battery storage value chain to advance the business case and regulatory frameworks for battery storage across the EU. Together, we urge a tenfold increase in battery storage by 2030 to ensure Europe's energy transition, security, and competitiveness.

Learn more

27.1 GWh

27.1 GWh of batteries installed in the EU in 2025: 12th consecutive record-breaking year

45%

45% annual EU batteries market growth: next growth cycle initiates with utility-scale batteries delivering most newly added capacity

252 GWh/year

Europe hosts 252 GWh of nominal battery cell production: numerous project cancellations and postponements threaten expansion

EU battery storage market shines bright in 2025 with much faster growth; new era begins as grid batteries take over

In 2025, the EU installed 27.1 GWh of new battery energy storage systems (BESS), marking the 12th consecutive year of record growth since SolarPower Europe records from 2013 (see Fig. 1). The latest additions take the operational capacity to 77.3 GWh at the end of 2025. As expected, growth picked up its pace in 2025 with 45% increase in annual installations, after the temporary slowdown in 2024.

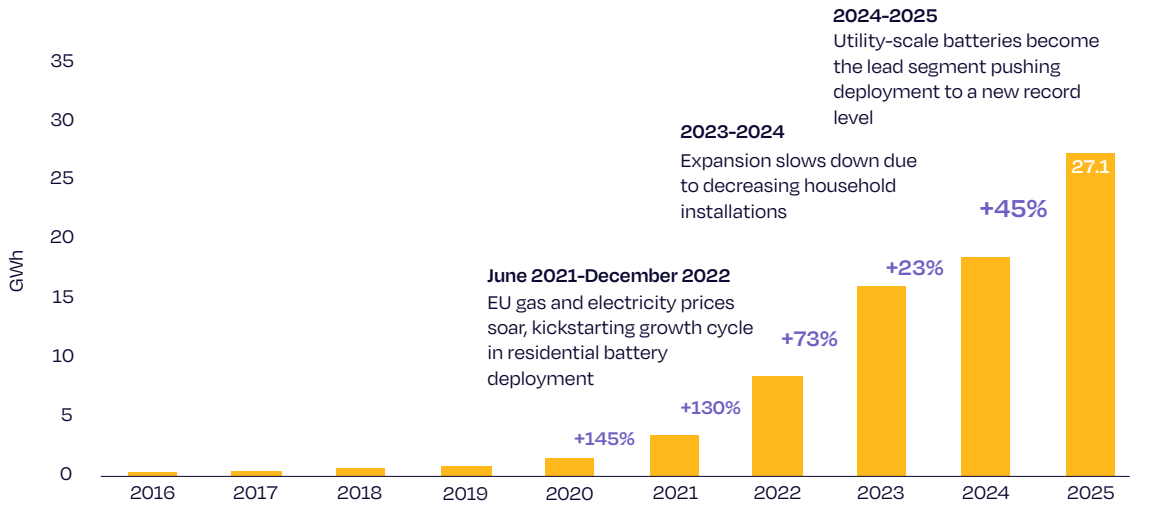
A fundamental shift occurred in 2025: utility-scale batteries became the main engine for growth, delivering 55% of all new capacity. Improved market conditions and policy support led to a record year for large-scale systems, while distributed segments continue to face persistent barriers. For the first time, behind-the-meter systems contributed less than half of annual additions, as growth in the commercial and industrial (C&I) segment was not sufficient to compensate for the decline in residential installations.

Outside the EU, the UK rebounded strongly, deploying 5 GWh of batteries in 2025, and nearing 16 GWh of total installed capacity. Supported by strong policy framework and favourable market conditions, Europe's largest grid-scale operator made significant progress towards its 2030 targets.

Figure 1

Battery storage deployment in the EU regains much stronger traction in 2025

EU annual BESS installed capacity 2016-2025



Market concentration dilutes: top 5 EU markets deliver more than 60% of all new capacity

In 2025, Germany and Italy again led the EU battery storage market (see Fig.2). Bulgaria became the fastest-growing market, advancing to third place, while the Netherlands and Spain completed the top 5 ranking. The bar for entering the top 5 rose sharply: connecting substantial volumes of grid-scale batteries became essential; and reaching the GWh-scale is no longer sufficient.

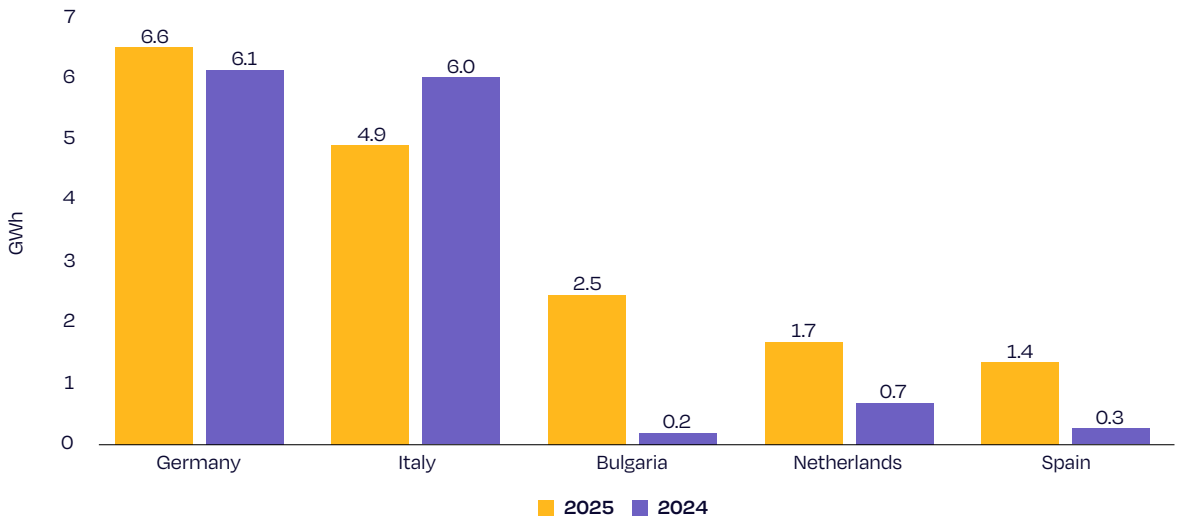
Germany preserved its leadership through record utility-scale installations, resilient C&I growth, and a more moderate decline in residential deployment. As expected, Italy registered a decline in annual additions despite stable grid-scale expansion due to a sharp drop in residential installations. Bulgaria experienced a breakthrough year, driven by strong market and support incentives and an exceptional year for large-scale deployment. The Netherlands claimed the fourth position thanks to a balanced growth across all three segments due to improving policy and market conditions. Closing the top 5, Spain deployed BESS at a greater scale, officially recognising storage as a strategic asset for the energy transition and improving the framework conditions for accelerated deployment.

Altogether, the top 5 markets added to the grid 63% of EU installed capacity in 2025. The year before, nearly 80% was delivered by the five largest markets (DE, IT, SE, AT, NL). Despite the strong decline in the market share of leading countries, the strong geographical concentration of deployment continues.

Figure 2

Germany and Italy remain the EU battery storage front-runners as Bulgaria joins the podium, with Spain and the Netherlands completing the top 5

Top 5 EU annual BESS markets 2025 vs 2024



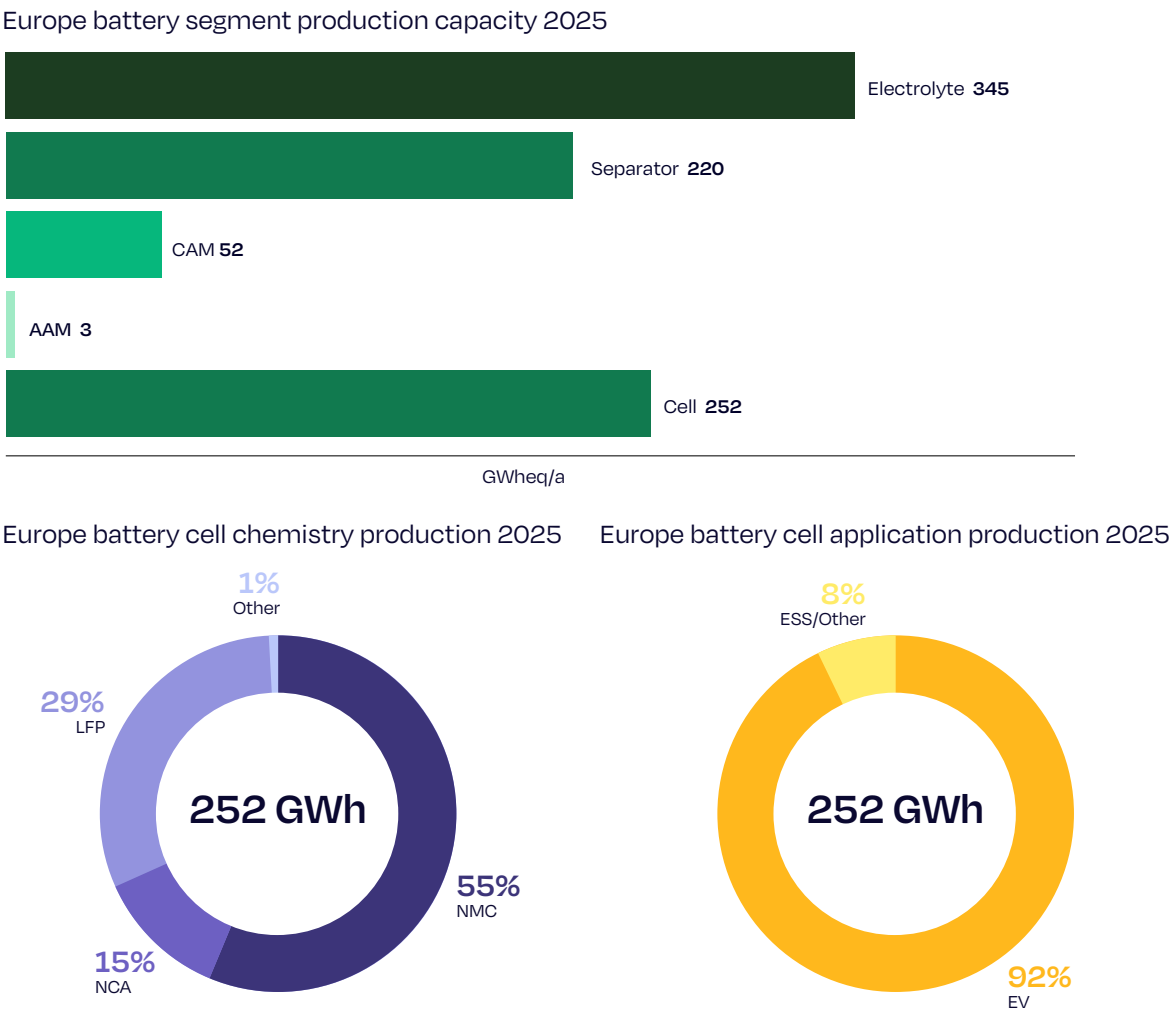
The European battery cell industry has significantly expanded, although uncertainty persists despite renewed financial support

Although upstream activities for battery mineral extraction and refining are lacking in Europe, the region has developed its midstream battery industry. However, despite strong electrolyte (345 GWheq/a) and separator (220 GWheq/a) production capabilities, cathode (52 GWheq/a) and anode (3 GWheq/a) active materials production remains very limited. At the cell level, 252 GWh of potential manufacturing capacity has been established with considerable efforts, but the future of the industry remains uncertain (see Fig. 3).

Currently, around 92% of the existing cell capacity is geared towards serving the electric-vehicle market, and 70% consists of nickel-based batteries. This is expected to change over the coming years as demand for stationary storage continues to rise and lithium iron phosphate chemistries dominate the market. Europe holds a substantial pack and module assembly capacity, with nearly half of all factories located in Germany, and less than 20% serving the stationary storage market.

Figure 3

Despite limited active material production, Europe battery cell industry progressed, mostly for EV nickel-based batteries



Policy Recommendations

The Policy Recommendations below have been extracted from our latest Flexibility Strategy, developed with members of the Battery Storage Europe Platform (BSEP). The Platform brings together industry leaders representing the battery storage value chain to advance the business case and regulatory frameworks for battery storage across the EU. Together, we urge a tenfold increase in battery storage by 2030 to ensure Europe's energy transition, security, and competitiveness.

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1 Accelerate deployment of BESS

1. Streamlining permitting and licensing

The permitting procedures for BESS currently tend to replicate those used for traditional generation assets, which leads to avoidable delays and higher costs. In practice, upgrading existing generation sites with storage should not trigger full permitting requirements. To address this, Member States need to put in place more efficient approval systems, ones that include exemptions for low impact retrofits and enforce clear deadlines for environmental impact assessments. Creating licensing frameworks designed specifically for storage, along with one-stop shops that consolidate all permitting needs, would significantly reduce administrative burdens.

At the same time, infrastructure planning for grids and storage should be coordinated with the expansion of renewables, combining high-level planning with enough flexibility for developers. Urban planning rules should explicitly take BESS into account, and hybrid projects should benefit from joint permitting as a standard approach. Examples such as Spain's simplified environmental impact assessments (EIA) process and the United Kingdom's integrated permitting model illustrate how well-designed systems can streamline deployment.

2. Prioritising grid-friendly assets in grid connection queues

Grid connection queues across Europe are long and inefficient, slowing the integration of urgently needed flexibility assets. A transparent, digital and milestone-based process focused on technical value is essential to accelerate BESS deployment and ensure scarce grid capacity is allocated where it brings the most benefit.

Connection procedures should prioritise technically mature, grid-friendly assets that alleviate congestion or make better use of existing infrastructure, from utility-scale BESS to rooftop solar with storage. Clear technical criteria should guide prioritisation, avoiding vague conditions that add unnecessary complexity.

Readiness-based approaches emerging in Europe, including the UK's NESO milestones, Germany's "first ready first served" model and the Netherlands' traffic light system, demonstrate how to ensure grid capacity goes to projects that are genuinely advancing. National regulatory authorities should ensure these approaches are applied consistently.

Hybridisation, particularly adding storage to existing renewable sites, should be recognised as a practical tool to optimise grid use. Since BESS acts as both load and generation, connection frameworks must reflect its operational profile through accurate impact assessments and predictable timelines.

3. Ensuring fair and cost-reflective tariffs

Financial obstacles remain a significant challenge, largely due to double charging and various discriminatory fees. To address this, Member States should remove tariff structures that classify BESS simultaneously as both an energy supplier and a consumer; while the EU Agency for the Cooperation of Energy Regulators (ACER) provides clear guidance to ensure tariffs truly reflect the value BESS brings to the system. Offering targeted exemptions in congested areas would further encourage new projects and help reduce infrastructure costs. At the same time, problematic practices, such as excessively high grid tariffs applied in the Netherlands or dual transmission charges still present in Poland, Greece, and France, need to be reformed so that storage projects can remain financially viable.

4. Unlocking market access and revenue stacking

BESS should be able to participate fully in energy and system service markets so they can build diversified revenue streams across wholesale trading, balancing services, and capacity mechanisms. To attract investment, these markets need transparent and competitive rules, along with long-term revenue visibility. Member States also have a responsibility to ensure that capacity mechanisms offer a level playing field, apply accurate derating factors, and remain open to nonfossil flexibility assets.

Grid stability services, such as inertia and black start, should be procured through market-based tenders supported by harmonised standards, encouraging fair competition and innovation. Likewise, Contracts for Difference (CfD) should reward hybrid projects that integrate BESS, while Guarantees of Origin must account for stored renewable electricity to preserve its green value.

5. De-risking investment

The European Investment Bank (EIB) can play a crucial role in reducing the financial risks associated with BESS projects by offering guarantees and mezzanine financing, particularly beneficial for smaller developers. Providing harmonised guidance for managing cross-border portfolios would also lower due diligence costs and improve scalability.

6. Enhancing cybersecurity

Strengthening cybersecurity is essential as BESS assets become increasingly digital and interconnected. Implementing robust standards-supported by Trusted Entity frameworks, full compliance with the Network and Information Security Directive 2 (NIS2) requirements, and secure operational protocols—will be key to ensuring that storage systems remain resilient against cyber threats.

2 Affordable and Resilient BESS Supply Chains

1. Trade liberalisation and strategic partnerships

The EU should enhance the competitiveness of the BESS sector by adopting duty-free import policies for key components, helping to reduce costs and provide the legal certainty and investment stability needed to attract global manufacturers. Building strong strategic partnerships, particularly with leading players in Asia, is crucial for diversifying supply chains while still ensuring that value creation and skills development take place within the EU. To support this, negative trade measures and protectionist approaches should be avoided, as they risk undermining competitiveness and limiting opportunities for backward integration.

2. Supporting EU-based production

To strengthen domestic manufacturing, Member States should incentivise the production of BESS and their components through targeted investment programmes and fiscal support that operate separately from electric vehicle-focused initiatives. Existing schemes such as Important Projects of Common European Interest (IPCEI), Clean Industrial Deal State Aid Framework (CISAF), the Battery Booster, and the Innovation Fund should be expanded, simplified, and accelerated so that funding reaches projects more quickly. Given the high energy and labour costs that challenge long-term industrial viability in Europe, operational aid remains essential. At the same time, labour shortages must be addressed through dedicated training and upskilling initiatives aligned with the European Battery Academy and the objectives of the Clean Industrial Deal.

3. Enhancing access to critical raw materials

Securing stable supplies of essential raw materials, including lithium, nickel, cobalt, and graphite, requires coordinated implementation of the Critical Raw Materials Act (CRMA). This should involve expanding domestic processing capabilities, strengthening international trade agreements, and scaling up recycling to reduce import dependence. Public acceptance of mining projects will be a key enabler, calling for innovative social contracts and participatory governance models. A commitment to open trade and circular economy principles will be fundamental to building a resilient and sustainable supply chain.

4. Driving R&D and innovation

Continued innovation across the BESS value chain is vital for closing technological gaps in battery chemistries, grid forming capabilities, and raw material efficiency. Increased research and development (R&D) incentives supported by public private partnerships and EU programmes such as Horizon Europe and IPCEI, are needed to accelerate progress. Priority should be given to quickly emerging technologies like lithium iron phosphate (LFP) and lithium iron manganese phosphate (LFMP) batteries, as well as to flexible production models that create synergies between EV and stationary storage manufacturing. Strengthening sustainable recycling processes will further accelerate innovation and reinforce Europe's competitive position in the global BESS landscape.

3 Quality, Safety and Sustainability of BESS

1. Harmonising safety and quality standards

Safety incidents involving BESS have fallen by 97% since 2018 thanks to improvements in system design and operational practices. Despite this progress, regulatory inconsistencies continue to pose challenges. To address them, the EU should introduce harmonised, system-level fire safety standards that apply to entire installations, covering battery management, thermal control systems, and fire-suppression mechanisms. Establishing a centralised incident-reporting platform would also improve transparency and enable continuous learning across the sector. This should be complemented by mandatory Emergency Response Plans (ERPs) for all projects, ensuring that first responders and local communities are actively engaged through dedicated training and consultation. Furthermore, consistent noise-management standards and certification schemes will be necessary to improve public acceptance, particularly in densely populated areas.

2. Improving recycling and critical raw materials recovery

To reduce administrative burdens and ensure effective compliance, the EU needs to harmonise registration and reporting requirements under Extended Producer Responsibility (EPR) rules. The reuse of batteries faces significant implementation hurdles due to industry scepticism and will require clear and consistent frameworks for reuse, reliability, and safety of second-life batteries to build trust and eventually support market development. Higher priority should be given to mandatory guidelines for the safe handling and transport of waste batteries, along with streamlined intra-EU waste shipment procedures that enable cross-regional recycling hubs. The latter are considered a pre-requisite to reach the necessary economies of scale for high-value BESS recycling. Additional fiscal incentives will be important to support recyclers investing in the recovery of critical raw materials from black mass. Over time, policies should also limit exports of battery waste to ensure valuable materials remain within the EU. Creating an integrated single market for waste, supported by the digital battery passport, will enhance traceability and further unlock economies of scale.

3. Reducing life-cycle carbon footprint

The European Commission should move quickly to implement the carbon footprint disclosure obligations set out in Article 7 of the Batteries Regulation. These rules must allow companies to use supplier-specific electricity data, such as through Guarantees of Origin and Power Purchase Agreements, to incentivise renewable energy sourcing and reduce emissions. Ensuring consistent implementation of a single, harmonised methodology across Member States will be essential to avoid duplicative certification requirements and unnecessary administrative costs. Strong verification processes, backed by rigorous criteria for notified bodies, will help maintain credibility and ensure comparable data across the EU. Collectively, these measures will strengthen sustainability, improve transparency, and give companies the clarity they need to plan and innovate confidently.

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Chapter 1

EU-27 battery storage markets in 2025

The EU battery storage market accelerated sharply in 2025, reaching a record 27.1 GWh of new installations. Residential storage continued to contract, despite falling battery prices and improved tariff-framework in a fewmarkets. Utility-scale systems became the dominant segment after overcoming previous regulatory and grid barriers. C&I installations grew but remained limited by fragmented support schemes and narrow business cases. EU cumulative battery capacity neared 80 GWh.

Germany and Italy remained the two largest markets, while Bulgaria rose to third place, reflecting the growing importance of grid-scale deployment. The top 5 markets accounted for nearly two-thirds of EU installations, highlighting continued geographical concentration. The UK, though outside the EU, rebounded strongly in 2025 thanks to supportive policy, diverse revenue streams and regulatory reforms.

1.1 EU annual BESS installed capacity 2025

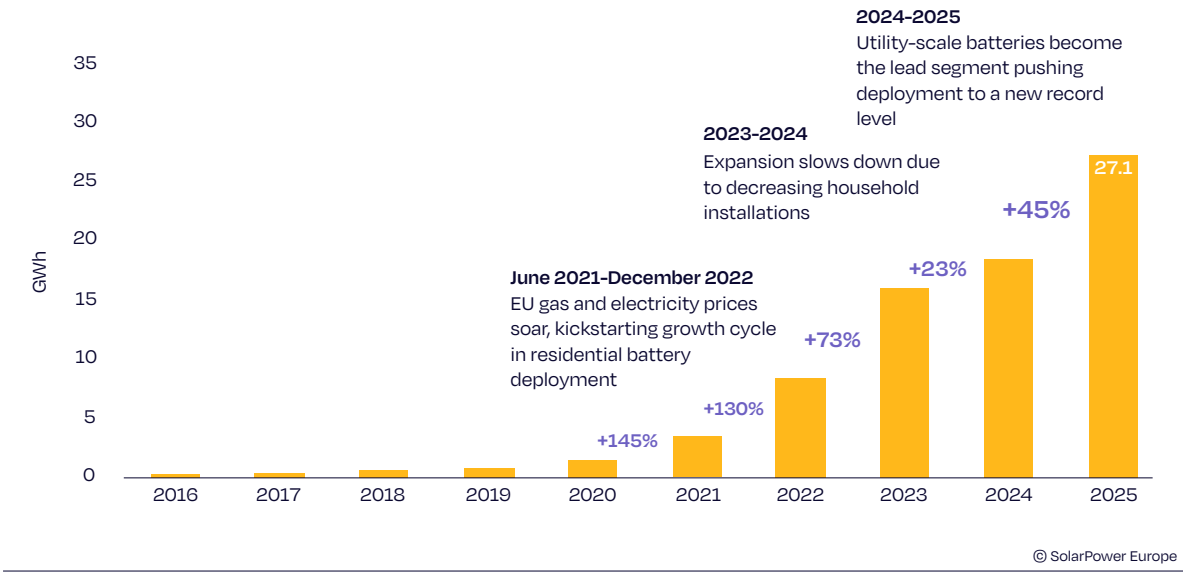
EU battery storage market accelerated in 2025, growing 45% to 27.1 GWh, driven by utility-scale expansion

In 2025, battery storage deployment reached a new record high of 27.1 GWh, a 45% increase compared to 2024 (see Fig. 4). This marks a significant acceleration after growth slowed to 23% in 2024 as a result of fundamental shifts in market and policy dynamics. As anticipated in our previous edition, several challenges persisted in 2025, enabling higher annual growth rates but still below 2023 levels of 73%, alongside a completely different market composition. These rapid shifts show how quickly policy and market conditions can influence battery installation levels.

Figure 4

Battery storage deployment in the EU regains much stronger traction in 2025

EU annual BESS installed capacity 2016-2025



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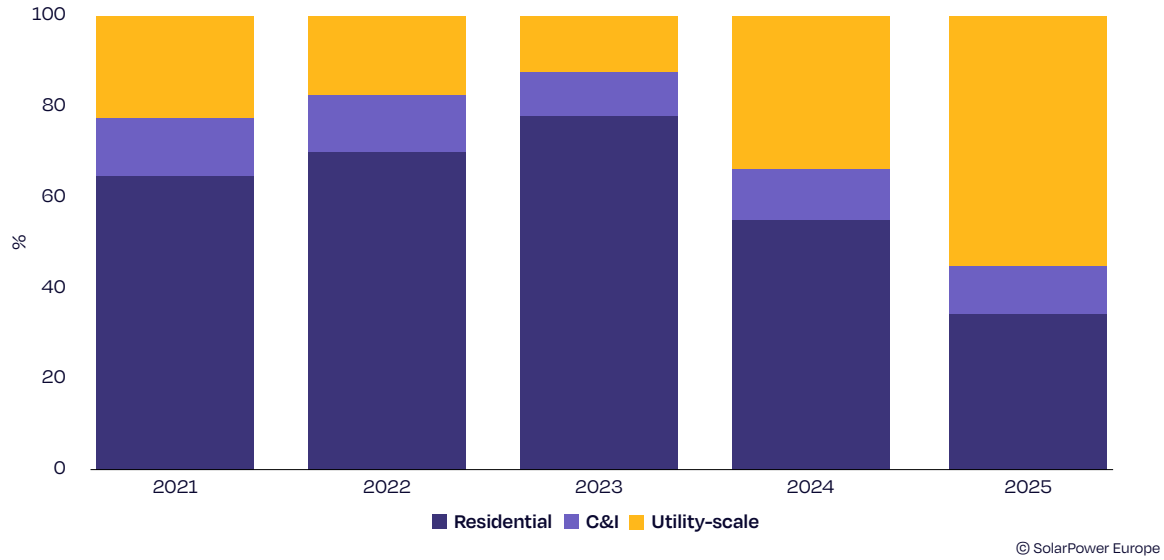
In 2025, **utility-scale** batteries firmly became the growth catalyst, installing 15 GWh and delivering 55% of total annual installed capacity (see Fig.5). Following a breakthrough year in 2024, when 6.5 GWh were installed, deployment rose sharply, more than doubling year-on-year. 2025 was also the year when hybrid solar and storage projects started to come online at a significant scale. Around 15% of new grid BESS installations were paired to solar PV, whereas in 2024, less than 10% of the market was hybrid.

Up until 2024, the utility battery segment had a marginal share, as large-scale projects still faced numerous regulatory barriers, grid connection delays, uncertain revenue streams, shortage of skills, and high upfront investment requirements. Italy was the only country to secure a substantial and reliable project pipeline,thanks to the capacity market and the fast reserve instrument auctions. Overall, despite significant investment appetite, framework conditions in EU member states were not yet ready to accommodate a quick increase of grid-scale battery deployment.

Figure 5

Utility-scale batteries secure EU market dominance in 2025, while distributed BESS declines again

EU annual BESS segmentation 2020-2025



Last year, Italy was again the #1 EU utility-scale market as projects coming from previous auctions continued to be commissioned. However, deployment volumes remained on a similar level to 2024 as the contracted pipeline cleared and investors waited for the launch of the first round of the MACSE scheme. Several other European markets gained prominence in the large-scale battery landscape. Germany's merchant market soared as sizeable projects came online, whilst the grid connection queue further extended.

Spain and Bulgaria reached the GWh-scale via CAPEX support programmes using EU funds, and countries like Romania also made significant advancements thanks to public support. The Netherlands and France remained below 1 GWh of new installations, but show very promising signs for rapid growth. Finland and Sweden jointly deployed more than 1 GWh. Greece installed several projects emerging from past auctions amounting to just under 900 MWh, but these assets are still awaiting grid connection permits.

Commercial and industrial (C&I) installations rose by 31% in 2025 to 2.3 GWh but again remained well below their full potential. The segment has consistently grown over the previous years, but it only exceeded the GWh-scale in 2022. Germany remained the biggest market in 2025 with nearly 500 MWh, followed by the Netherlands and Italy with under 300 MWh, while the rest of European countries stayed below 200 MWh.

Despite presenting great prospects, the C&I BESS use-case remains rather limited, primarily focused on increasing PV self-consumption and avoiding peak demand charges, alongside specific applications, such as electrifying industrial processes or electric fleets, addressing grid connection capacity constraints, or farming applications. Because installations vary widely depending on the type of economic activity, progress remains slow and final investment decisions often require lengthy negotiations. Some countries like Hungary or Greece introduced funding programmes for businesses, but in general, support frameworks are often insufficient and scattered across

geographies. Provision of flexibility services is not yet feasible in most EU Member States, making Sweden one of the only European exceptions, enabling C&I batteries to provide frequency regulation services at scale.

The C&I segment nearly kept its market share in 2025, contributing 8% of the total deployment – still trailing far behind the utility-scale and residential segments. Market developments are not progressing at the speed required given the urgent need to decarbonise, reduce persistent high power prices, and shield European businesses from future electricity price spikes.

Lastly, **residential** installations both for PV and BESS were impacted again by the dynamics from 2024: falling electricity prices relative to the height of the energy crisis; and support schemes being either scaled down or completely phased out in several markets. In 2024, the residential market shrank by 11%, but at that time home batteries still represented the largest segment with 56%.

In 2025, these factors persisted-with a few exceptions like Romania or Hungary, where new support schemes were introduced, and the European residential BESS market declined again by 6% to 9.8 GWh. However, and despite the fact that financial government support decreased, other incentives to invest in residential batteries improved, somewhat slowing the decline in new installed capacities. In particular, home battery product prices declined significantly, due to fierce competition from Asian suppliers, and PV export tariffs further decreased, triggering an increase on retrofitting rates for solar homes increased in countries like Austria or Germany. Policy frameworks also proved to be supportive after countries like the Netherlands or market leader Germany accelerated the adoption of dynamic frameworks that reward flexibility.

2025 marks the second consecutive year of decreasing installations, signaling the end of a continuous expansion cycle, with nearly 70% of compounded annual growth rate (CAGR) between the end of 2021 and 2025. Since the start of the energy crisis in 2021, nearly 4.5 million EU households have adopted home batteries. This makes the EU's residential storage fleet the largest worldwide and provides enormous potential for increasing distributed grid flexibility.

1.2 EU cumulative BESS installed capacity 2025

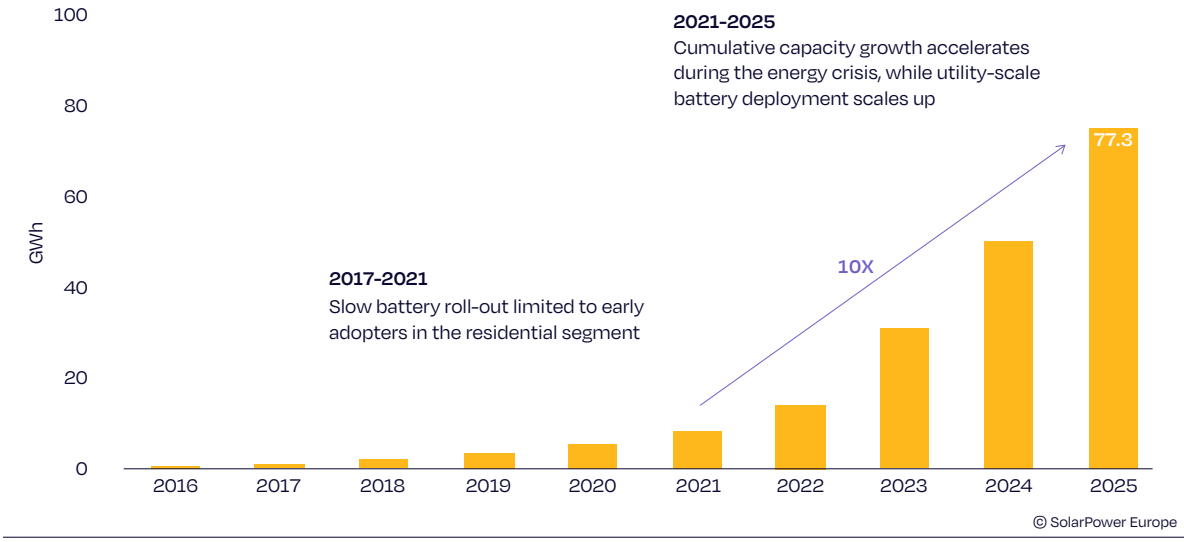
The EU battery storage fleet is 10 times larger now than four years ago; residential segment maintains almost 60% of capacity

The battery storage fleet in the European Union nearly reached 80 GWh at the end of 2025 (see Fig. 6). The operating capacity continues to grow at an exceptionally rapid pace, and has further accelerated in recent years. In just four years, the operating battery capacity in Europe has grown tenfold, from 7.8 GWh by end of 2021, and about 150-fold over the past decade, from about 0.5 GWh in 2016. This reflects the first wave of mass adoption of home batteries, and the rise of grid-scale batteries as a major contributor.

Figure 6

EU installed battery storage capacity edges towards the 80 GWh milestone

EU cumulative BESS installed capacity 2016-2025

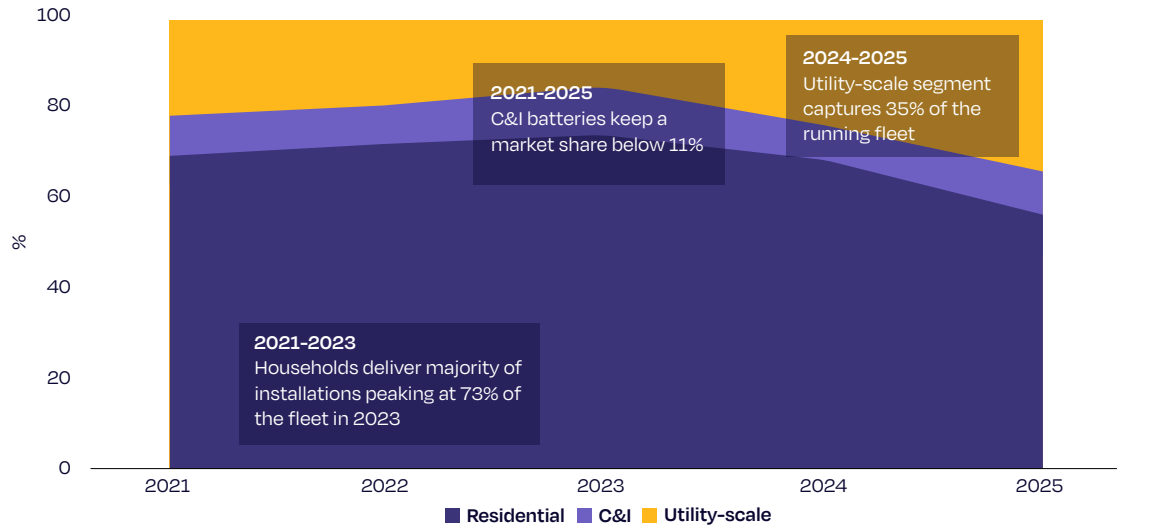


Despite the large number of large-scale projects commissioned over the last two years, residential battery capacity still represented 56% of the total fleet by the end of 2025 (see Fig. 7). This is expected to change in 2026. Over the past two years, the utility-scale segment jumped from 23% to 35% at the end of 2025, and is expected to become the main capacity provider in 2026. The C&I segment remains in the 9% to 11% range of total installed capacity, a share it has maintained since 2021.

Figure 7

Despite two consecutive years of falling installations, the residential segment retains its fleet dominance in 2025

EU cumulative BESS segmentation shares 2021-2025



1.3 Top 5 EU BESS markets in 2025

Annual deployment concentration declines, but Italy and Germany still run 60% of battery capacity

In 2025, Germany and Italy kept their top positions as leading BESS markets, and Bulgaria emerged strongly, turning into the third largest market in the EU (see Fig. 8). Spain and the Netherlands completed the top 5 ranking, as Austria and Sweden dropped out.

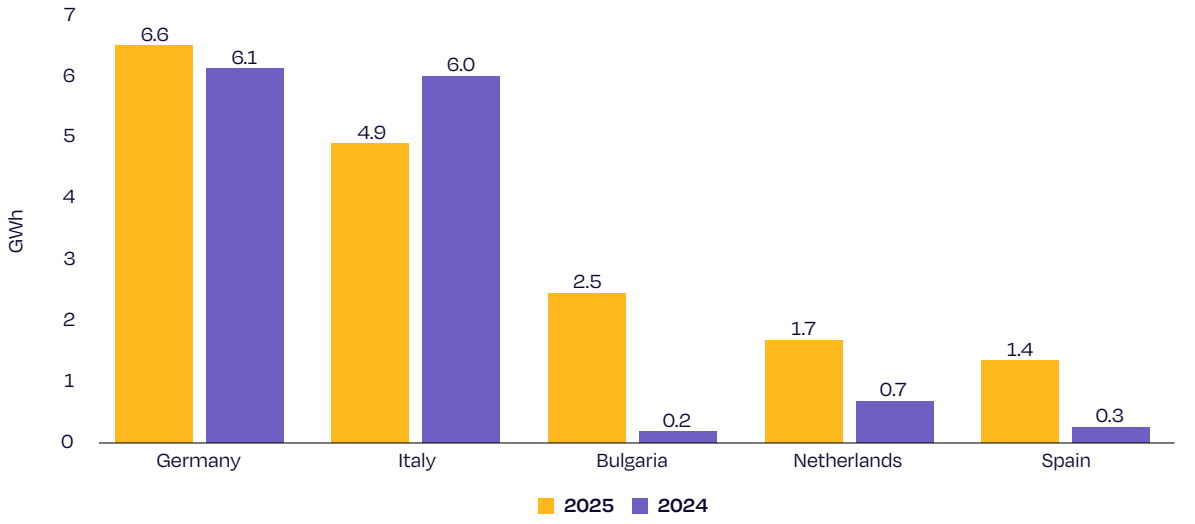
This new geographical distribution of the biggest markets signals an important change: countries without a sufficiently large grid-scale market can no longer make it to the top-5 ranking. In earlier years, when residential installations drove most of the newly installed capacity and grid-scale batteries remained limited, the top 5 was formed by the leading residential solar markets. Nowadays, with the decline in household installations, and small growth in the C&I segment, countries have to deploy substantial volumes of grid-scale batteries to reach the top tier.

Additionally, 2025 marks the beginning of a new era of capacity deployment, showing stronger diversification as new markets emerge. In 2024, only four EU markets reached the GWh scale, but in 2025, 10 Member States surpassed the GWh mark.

Figure 8

Germany and Italy remain the EU battery storage front-runners as Bulgaria joins the podium, with Spain and the Netherlands completing the top 5

Top 5 EU annual BESS markets 2025 vs 2024



Germany registered last year a new deployment record of 6.6 GWh, and has now deployed 6 GWh or more per year for 3 consecutive years. The expansion speed has slowed down over the recent years, with 8% and 3% respectively in 2025 and 2024 due to dropping household installations and minor growth activity in C&I. The good news is that the promising merchant grid-scale battery market in Germany finally delivered substantial battery capacities.

After nearly topping Germany in 2024, **Italy** experienced its first market contraction in 2025, grid-connecting 18% less capacity and falling below 5 GWh of annual installations. Despite the strong performance in the grid-scale segment, which has delivered around 3.5 GWh per year both in 2024 and 2025, total installations declined because of the downturn in the residential battery market, which fell 40% year-on-year. The C&I market remained below 200 MWh of annual installations after peaking at 450 MWh in 2023.

Bulgaria became the third largest market in 2025, with 2.5 GWh of grid-connected capacity, and the biggest growth rate in the EU (+1,200% year-on-year). EU funding rounds have catalysed an enormous capital mobilisation for the deployment of grid-scale batteries, leading to their first breakthrough year in 2025.. The distributed segment remains largely untapped due to highly regulated electricity markets.

The **Netherlands** more than doubled its annual market in 2025, bringing 1.7 GWh of battery storage capacity online. The Dutch market has experienced significant changes over the last two years and now shows a very diversified deployment segmentation. Although the rooftop solar market contracted in 2025, the behind-the-meter storage segment added almost 1 GWh in 2025. The upcoming phase-out of the net-metering scheme by 2027 has accelerated the move toward flexible tariffs and storage. Large batteries connected 700 MWh in response to growing congestion and power price volatility, while corporate users (e.g., supermarkets, logistic firms) showed strong interest in storage.

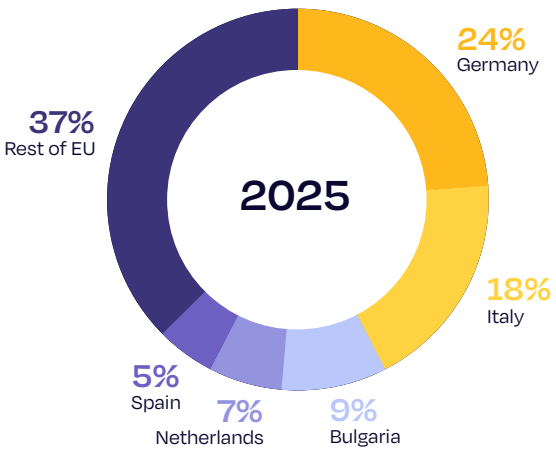
Spain became the fifth largest market in 2025, with nearly 70% annual growth rate and 1.4 GWh installed. Although the residential market shrank by 60% following the expiration of the Next Generation EU funds, the C&I and grid-scale markets expanded rapidly. Large industrial and grid-scale projects connected in 2025, mostly due to improved permitting procedures and the use of EU programmes to support capital investments in BESS.

Altogether, the top 5 markets delivered almost two-thirds of the total deployment in 2025 (see Fig. 9), illustrating yet again the high geographical concentration of EU battery installations. However, the top 5 saw it's share decrease relative to 2024, when almost 80% of BESS capacity was built by the 5 largest markets.

Figure 9

Geographical deployment concentration remains as the five leading EU markets deliver almost two-thirds of newly installed capacity in 2025

Top 5 EU BESS market shares vs Rest of EU 2025



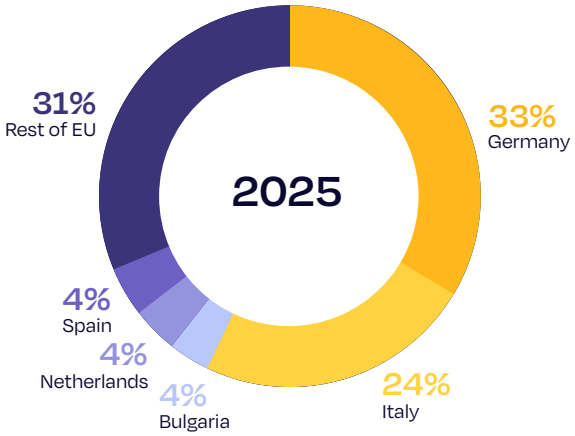
The leading large-scale battery markets – Germany, Italy and Bulgaria – delivered half of the segment's total buildout, whilst Germany and Italy alone installed 60% of all residential systems in the EU. This level of deployment concentration is also very visible in the C&I segment, as the leading markets – Germany, Italy, the Netherlands and Spain – installed 40% of all C&I capacity in Europe.

A look at the cumulative installed battery capacity in the EU shows that the 5 largest battery markets have an even larger share compared to annual installations, capturing nearly 70% of EU total capacity (see Fig. 10). The ranking remains unchanged, with Germany leading at 33% of total capacity, followed by Italy at 24% and Bulgaria, the Netherlands and Spain each at 4%. Together, the top two countries account for close to 60% of the current operating EU battery fleet.

Figure 10

Germany and Italy alone operate almost 60% of the installed battery storage capacity in the EU

Top 5 EU cumulative BESS market shares vs Rest of EU 2025



Box 1

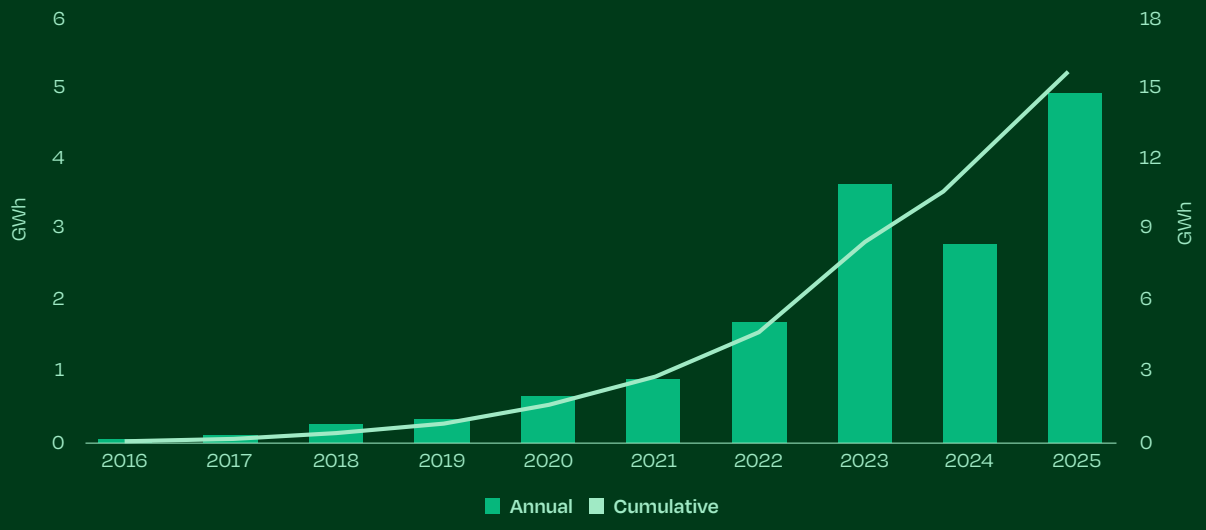
UK BESS developments

The United Kingdom remains one of Europe's most dynamic BESS markets, supported by strong policy and market momentum. After the temporary slowdown of 2024, when annual installations decreased by 23% to 2.9 GWh, batteries buildout reached a new record of 5 GWh of added capacity in 2025 (see Fig. 11). The country was the third largest European market in 2025, and operates the continent's largest utility-scale battery fleet.

Figure 11

Battery deployment in the UK rebounds in 2025 after a temporary dip in 2024

UK annual and cumulative BESS installed capacity 2016-2025



A central driver of the UK's continued relevance in the European storage ecosystem is its ambitious governmental backing, with clear national objectives for renewables and battery deployment. By 2030, the country aims for 45-47 GW of solar PV, and 23-27 GW of battery storage capacity. The UK also benefits from Europe's most diverse revenue stack, with BESS able to access wholesale markets, multiple ancillary services, and increasingly favourable conditions in the capacity market. This breath of revenue opportunities has historically attracted investors and positioned the UK as a global benchmark for flexible storage monetisation.

Regulatory reform further reinforces market fundamentals. Recent grid connection reforms aim to prioritise projects aligned with national climate and energy objectives while rewarding project readiness, a major barrier for large-scale developers. This move effectively removed 150 GW of battery projects from the grid connection queue. At the distributed level, VAT exemptions for small scale BESS, simplified permitting, and financial support schemes for low-income households are expanding residential and C&I storage.

However, several headwinds are shaping the outlook. The most significant is the decline in battery revenues observed in 2023 and much of 2024, which reduced investor confidence. This downturn was mostly caused by the saturation in frequency response markets following the exceptionally high levels of 2021-2022. However, a strong recovery began in late 2024, supported

Box 1 - continued

by the introduction of the Quick Reserve Service stream, which drove revenues in January 2025 to almost four times higher levels (107,000 EUR/MW) than in January 2024 (31,000 EUR/MW). Despite recovery, lenders have now become more cautious, due to market volatility and higher merchant exposure.

Additionally, planning and permitting processes remain inconsistent across England, Wales, Scotland and Northern Ireland, creating delays that disproportionately affect hybrid projects combining storage with solar or wind. A lack of uniform fire-safety regulations also undermines expansion and public trust. Policy signals have also become more ambiguous: the recent approved five-year spending plan from the energy regulator prioritises investment in gas network upgrades over grid expansion. This stands in stark misalignment with the UK's electrification and flexibility goals, potentially slowing the pace of BESS deployment.

Despite these challenges, the UK retains strong structural advantages: robust policy foundations, a mature revenue stack, and continued investment attractiveness. This suggests that, even though 2024-2025 may represent a period of recalibration, the long-term fundamentals for storage growth remain intact.

Country highlights

Germany's BESS market shows moderate growth driven by strong renewables, profitable price dynamics, and supportive regulation, but progress is constrained by severe grid-connection delays and inconsistent permitting. Italy faces a sharp market contraction due to regulatory uncertainty and weak merchant economics, though strong renewable ambitions and interest in MACSE auctions continue to attract competition. Emerging markets such as Bulgaria are experiencing explosive growth driven by renewables expansion, supportive policies, and declining coal, though investment is slowed by unclear market rules.

The Netherlands shows strong momentum under rapid renewable growth and high price volatility, but gridfee structures and permitting delays remain critical bottlenecks. Spain's market is accelerating thanks to national targets, financing schemes, and improving regulatory frameworks, yet progress is hindered by weak household support, financing challenges, and administrative delays.

1

Germany

2024 market size

6.1 GWh

2025e market size

6.6 GWh

+8% from 2024

Main drivers

+ Strong renewable generation with ambitious targets driving substantial flexibility and grid-balancing needs.
+ Frequent negative power prices and intraday spreads making batteries highly profitable for energy arbitrage and ancillary services.
+ Positive regulatory developments in the Energy Industry Law, recognising storage a core energy infrastructure and confirming that hybrid storage can benefit from existing grid-fee exemptions, even when charging from the grid.
+ Despite declining installations, small-scale batteries increasingly benefit from a supportive adoption framework with VAT exemptions and the rollout of dynamic tariffs.

Main barriers

– Increasing uncertainty around policy support due to wavering renewable energy commitment, plans to increase natural gas capacity, and recent reversal of the decision to fasten permitting for batteries.
– Severe grid connection backlog (more than 700 GW across all grid areas) creating multi-year delays, and revealing how speculative and duplicated the queue has become.
– Highly fragmented and inconsistent permitting rules across Federal regions, with overburdened local administrations.
– Grid batteries no longer exempted from the one-off network construction levy when grid connection requires new power lines or reinforcement of existing ones.

2

Italy

2024 market size

6.0 GWh

2025e market size

4.9 GWh

-18% from 2024

Main drivers

+ Rapid growth of renewables, with ambitious target for energy storage of 50 GWh of storage capacity by 2030, and significant improvements on permitting, grid codes and dispatching rules.
+ High interest in MACSE's first auction, which was oversubscribed four-fold, driving fierce competition amongst bidders, and resulting in longer storage durations at very low costs for the system.
+ Annual capacity market auction rounds, attracting investors favouring merchant business cases over long-term fixed revenues.
+ Strong use cases for self-consumption and peak-shaving in the residential and C&I segments.

Main barriers

– Uncertainty in MACSE pricing structure and revenue potential, limited access to revenue streams, and persistence of double charging and grid fees.
– Despite recent reforms in power market regulation, wholesale price spreads do not sufficiently support a merchant business case as Italy's balancing and ancillary services mechanism are becoming saturated.
– Existing programmes such as Transition 5.0, the National Recovery and Resilience Plan (NRRP) support schemes and Ecobonus remain complex and/or underfunded, while high borrowing costs limit investments in small-scale systems.

3

Bulgaria

2024 market size

0.2 GWh

2025e market size

2.5 GWh

+1152% from 2024

Main drivers

+ Rapid renewable expansion, especially for solar PV, creating a strong demand for flexibility and energy storage.
+ Declining coal generation over the last years, increasing the need for frequency regulation, voltage control and synthetic inertia.
+ Strong policy support for storage deployment with substantial grants from the Resilience and Recovery Fund for BESS projects.
+ Supportive policy framework for storage (no double charging or excessive grid charges) and relatively fast permitting.

Main barriers

– Despite recent reforms, lack of clear secondary legislation and market rules for revenue stacking slows investments.
– Heavy reliance on short-duration EU programmes risks creating a boom-and-bust cycle with no long-term mechanisms ensuring continued investments.
– Regulated retail electricity prices continue to hamper distributed solar-plus-storage adoption, with various postponements in market liberalisation.

4

Netherlands

2024 market size

0.7 GWh

2025e market size

1.7 GWh

+149% from 2024

Main drivers

+ Very rapid renewable growth boosting short-term flexibility needs, which are currently met with expensive gas-powered plants.
+ At least 5 GW of standalone batteries and 1 GW of co-located capacity required, as forecasted by the Dutch TSO.
+ High price volatility creating attractive arbitrage opportunities, which can be coupled with multiple revenue streams from various markets and services.
+ Introduction of alternative transport rights and time-dependent tariffs, offering discounts for battery assets.
+ Approaching end of net-metering and roll-out of dynamic tariffs making batteries much more attractive, both for new and existing PV installations; VAT exemptions reduce upfront costs.

Main barriers

– Complex political landscape undermining policy certainty and investment confidence.
– Absence of a capacity market, reducing financial security for BESS owners, and increasing blackout risks.
– Alternative tariff options fail to address the structural issue of high grid fees, leaving batteries exposed to high variable transport fees.
– Lengthy and fragmented permitting procedures and growing grid connection queues, slowing down BESS deployment.

5

Spain

2024 market size

0.3 GWh

2025e market size

1.4 GWh

+399% from 2024

Main drivers

+ Consensus on the urgent flexibility and stability needs driven by renewable growth, limited interconnection capacity, and the recent blackout.
+ Ambitious national targets for renewables and storage, with BESS expected to deliver most of the new capacity.
+ Multiple financing schemes supporting large-scale battery projects, reducing upfront costs and driving investment.
+ Growing investor confidence and reduced merchant risk, thanks to significant improvements on permitting for hybrid projects, discussions over a capacity market, and upcoming voltage control markets.

Main barriers

– Household segment severely affected by the lack of support schemes and high financing costs; industrial-sector growth remains limited.
– Heavy reliance on wholesale arbitrage and ancillary services, making storage financing difficult without public support.
– Many projects at risk missing programme deadlines due to administrative bottle-necks, lengthy hardware lead-times and local opposition in certain regions.
– Flexibility requirements are still largely met through bilateral agreements with legacy generators.

Emerging EU system integration challenges and the role of BESS

Europe's solar PV boom stalled in 2024–2025 as rooftop installations fell, utility-scale projects masked deeper structural issues, and flexibility challenges became a critical bottleneck. Europe's renewable expansion has cut fossil imports and emissions significantly, yet underinvestment in grids and flexibility threatens progress. Negative electricity prices hit record levels in 2025, undermining solar project revenues in key markets like Germany and Spain. Rising curtailment and grid constraints, most visible in Spain after the 2025 blackout, forced greater reliance on gas for stability services despite record renewable penetration. Daily and seasonal flexibility needs are set to surge five-fold by 2030, with batteries positioned as the most effective tool to absorb excess solar and stabilise the system. Without rapid deployment of clean flexibility solutions the EU risks missing its 2030 solar targets, weakening competitiveness and energy security.

3.1 Solar PV market expansion in Europe

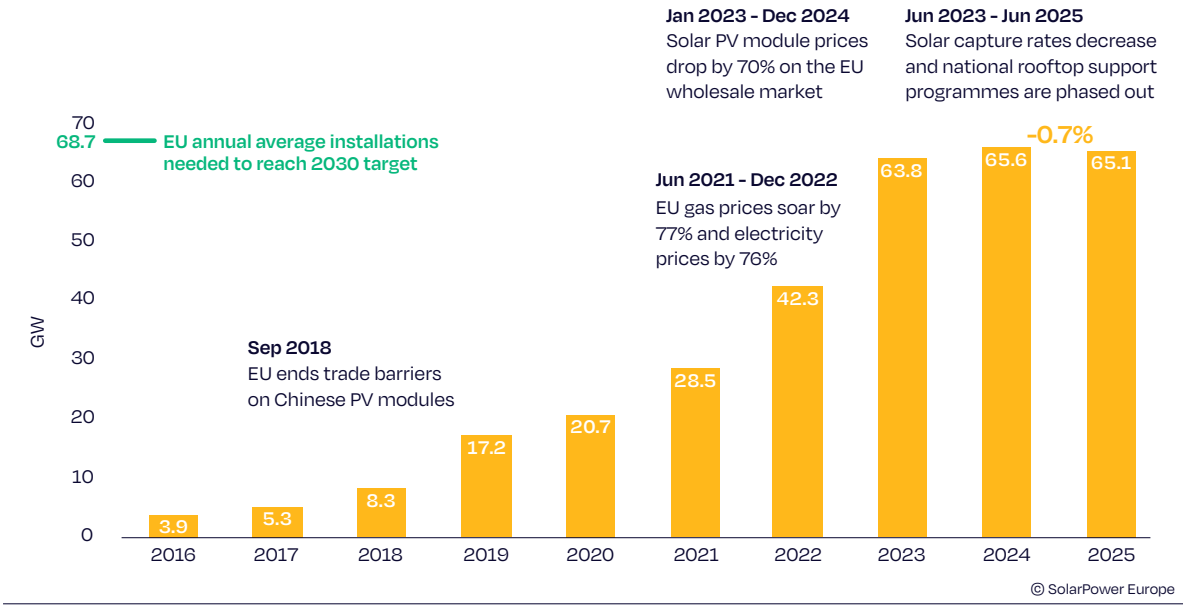
Annual installations decline for the first time since the mid-2010s, driven by further rooftop installation decline, partly cushioned by utility-scale development

The EU's solar PV sector continues to expand its role as the backbone of the continent's clean energy transition. Annual installations surged by 38% in 2021, 48% in 2022 and 51% in 2023, driven by the energy price crisis and strong policy support. This rapid acceleration came to an abrupt halt in 2024, when growth slowed to just 2.8%, with installations reaching 65.6 GW. In 2025, the market contracted slightly to 65.1 GW (-0.7%), marking the first annual decline in a decade, confirming that the EU solar boom has entered a new phase (see Fig. 13)[1].

Figure 13

For the first time in a decade, the EU solar market declines

EU annual solar PV installed capacity 2016-2025



This slowdown is linked to several factors: the urgency to install solar faded as energy prices fell, and national support schemes in key markets that were often funded from resilience and recovery funds also scaled back. Along with weaker solar economics, lack of grid access, missing flexibility, and renewed policy uncertainty played a part.

The changing environment was most felt in the rooftop solar segment. Residential PV became the main drag on the market in 2025, with household installations falling in 19 markets compared to just six in 2023. As a result, the residential segment's share of annual installations dropped to only 14%, half its level two years earlier. The C&I segment shows greater resilience but also cooled, with its share slipping toward 32% as declining demand spreads to a growing number of countries and growth becomes increasingly concentrated in a limited number of stronger markets.

In contrast, utility-scale solar acted as a stabilising force in 2025, partially offsetting the rooftop decline. For the first time, large-scale projects accounted for more than half of all newly installed

1 SolarPowerEurope (2025): EU Solar Market Outlook 2025-2030

solar capacity in the EU, making utility-scale the dominant driver of annual additions. This resilience is largely the result of delayed project realisation: capacity awarded through auctions and contracted via PPAs during the strong 2022-2024 period continued to come online despite a more challenging investment environment. Today, mainly grid constraints, low electricity prices and policy uncertainty weigh heavily on new project economics.

The forecasted outlook in the latest EU Solar Market Outlook 2025-2030 shows the downturn is expected to continue in 2026 and 2027 before annual installed capacities return to growth. This should serve as a stark warning for policymakers: unless the underlying causes are addressed promptly-such as implementing flexibility measures to significantly increase energy storage additions-the EU's 2030 solar target is most likely to be missed, jeopardising decarbonisation efforts, competitiveness, and energy security across the Union.

3.2 EU renewable power generation: Implications for competitiveness, security and climate

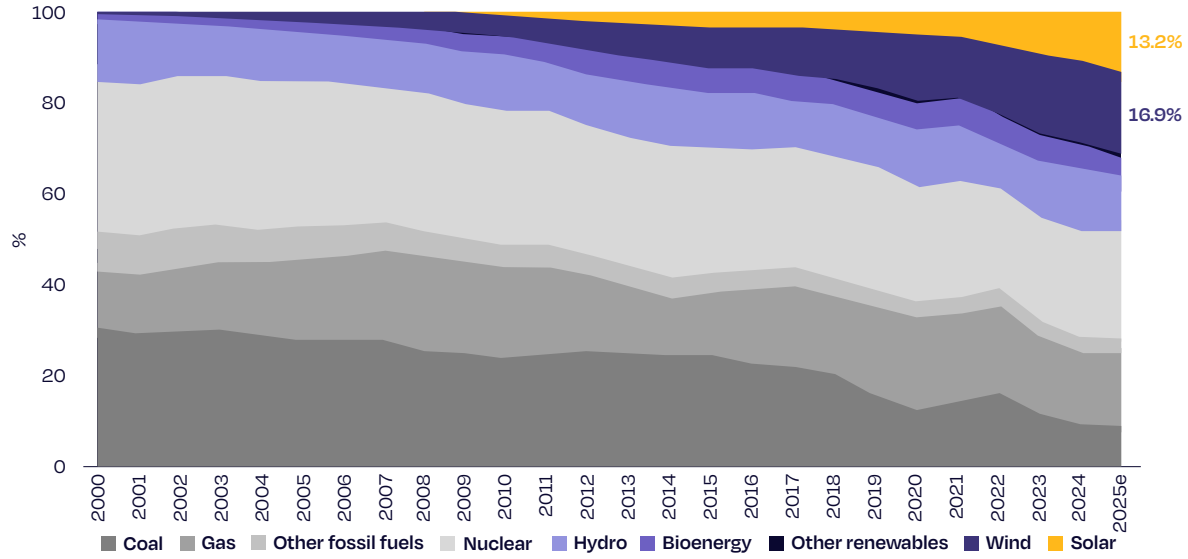
EU renewables supply more electricity than fossil fuels in 2025, saving billions in expensive fossil imports, lowering emissions, and enhancing energy security

For the first time, solar and wind together supplied more power than fossil fuels in the EU (see Fig. 14). Fossil fuels have now been pushed down to a generation share of 29%, whereas renewables rose to over 30%.

Figure 14

Renewables overtake fossil fuels as the EU's main electricity source

EU-27 electricity generation shares per source 2020-2025



The tremendous rise of renewable energy in our power mix has enabled the EU to drastically cut its emissions intensity (amount of CO_2 emitted per kWh produced) by more than 40% since 2015, and nearly 50% in absolute terms compared to 2005[2].

Beyond reducing emissions, growth in wind and solar also delivers major economic and security benefits. Between 2019 and 2024, the EU's surge in wind and solar generation avoided 59 billion EUR in fossil fuel imports[3]. Without these additions, the EU would have imported an extra 92 billion cubic metres of gas and 55 million tonnes of coal, significantly increasing costs and emissions.

Just from 2021 to 2023, during the energy crisis, newly installed solar PV and wind capacity saved EU electricity consumers an estimated 100 billion EUR by reducing reliance on expensive fossil generation and reducing wholesale electricity prices[4]. Without these renewables, prices would have been 8% higher in 2022 and 15% higher in 2023. These savings are not just economic; they

2 European Environment Agency (2025): Greenhouse gas emission intensity of electricity generation in Europe

3 Ember (2025): European Electricity Review

4 International Energy Agency (2023): How much money are European consumers saving thanks to renewables?

also strengthen EU energy security, improve resilience and reduce exposure to growing geopolitical risks. According to the International Energy Agency (IEA), one single journey by one single shipment of solar PV modules can provide electricity generation equivalent to the gas carried by over 50 LNG tankers or the coal on more than 100 large vessels[5]. In addition, dispatchable solar has become economically viable thanks to the steep decline in battery prices. Storing around 50% of daytime solar energy is enough to maintain the supply overnight at the cost of 65 EUR per kWh.

As the share of variable electricity supply increases, the need for a more robust and flexible system becomes critical. Despite the clear benefits, investments in renewable power and grids remain comparatively low: The EU invested around 200 billion EUR in 2025, whilst China mobilised 435 billion EUR[6].

5 International Energy Agency (2024): Energy Technology Perspectives 2024

6 International Energy Agency (2025): World Energy Investment

3.3 Emerging system integration challenges

As more solar is deployed without sufficient flexibility solutions, system-integration indicators worsen, putting solar economics at risk

Several Member States have already achieved significant levels of solar PV generation, but are also facing growing challenges in integrating clean energy into their grids. These challenges can be broadly divided into: technical issues, such as grid integration and increased curtailment; and financial challenges, such as market structure, investment attractiveness, and remuneration for renewable producers.

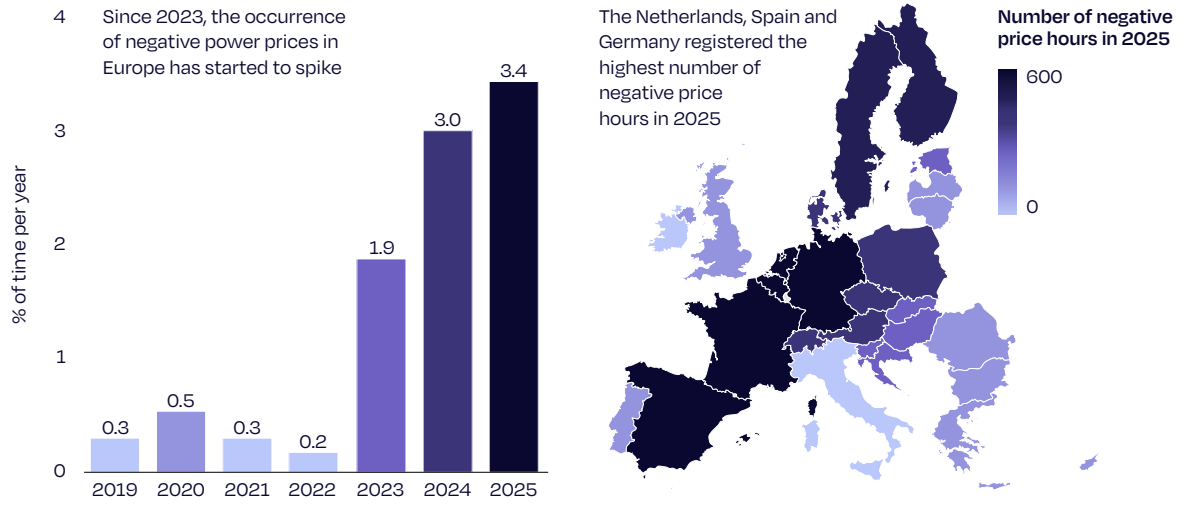
One key sign of the financial challenges of solar is the increase in hours with ultra-low and negative power prices. Abundant solar generation during the central hours of the day, combined with low electricity demand, pushes hourly power prices to zero or even below. This trend, even though it offers a tremendous opportunity for electrification with cheap and clean power, undermines the bankability of solar PV projects.

While until 2022, the average time per year with **negative electricity prices** in Europe remained below 0.5% – roughly two full days per year - the share jumped to almost 2% in 2023 and 3% in 2024. Last year, negative prices climbed to a new high of 3.4% of the time occurence in Europe. (Figure 15). This is equivalent to about 310 hours with below-zero power prices - almost two consecutive weeks.

Figure 15

Negative power prices in Europe hit an all-time high in 2025, with the highest occurrence in leading solar markets

Occurrence of negative power price hours in Europe 2019-2025



The Netherlands, Spain and Germany witnessed the largest incidence of below-zero price hours in 2025, exceeding 540 hours (more than 22 days). These three countries are all leading solar markets, where solar supplies over 15% of consumed electricity. In Spain, one of the top three solar power generators in Europe, 22% of electricity came from solar PV in 2025.

Frequent negative power prices have fuelled the decline in the market value of solar electricity, measured through monthly **solar capture rates** (which indicate how the price of solar electricity compares to the average wholesale price during that month). In periods of high solar output, typically spring and summer, power prices drop significantly, reducing the value of solar generation. While this benefits consumers through lower costs, it weakens the financial case for standalone solar projects.

In the EU's two leading solar markets, Germany and Spain, data from 2020 to 2025 reveals a clear link between rising solar penetration and falling capture rates, commonly referred to as the cannibalisation effect (Figure 16). According to Rystad Energy, between January and September 2025, average PV capture rates fell to 58% in Germany and 52% in Spain, down from 67% and 63% respectively the previous year. The steepest drops occurred in April and May, illustrating this dynamic most clearly. In Germany, capture rates slid from above 50% in March to less than 33% in May, while in Spain the decline was even more pronounced – from 49% in March to just 18% in May.

Figure 16

Solar electricity value hits new lows in Germany and Spain despite increased demand during the summer months

Monthly solar capture rates in Germany and Spain 2021-2025

© SolarPower Europe. Source: Rystad Energy Europe Renewables & Power solution, ENTSO-e

Notably, a peak can be found in July, where a heatwave increased air-conditioning demand during sunny hours across Europe. Combined with lower wind and nuclear energy production, the economic value of solar rose significantly during this period. Despite this event, the general trend is one of growing flexibility that needs to counter the cannibalisation effect.

Avoiding solar production "eating its own tail" extends beyond the economic value of solar. During sunny hours, solar electricity production can be halted (curtailed) for both financial reasons (when

prices are too low) and technical reasons (when the grid cannot absorb the additional inflows). Curtailment severely undermines the bankability of solar projects.

The **Spanish electrical network** has traditionally been touted as one of the most reliable grids worldwide, combining modern infrastructure and sophisticated system operation, with almost 70% of renewable generation. With lower curtailment rates than most countries, the Spanish grid has effectively integrated renewables, making electricity much cheaper than in most European countries. Since 2019, Spain's renewables have reduced the influence of fossil fuels on the electricity price by 75%, as the decline in gas-linked price hours was faster than in other gas-reliant countries like Germany or Italy.[7] In 2025, wholesale electricity prices in Spain were 40% below the European average.

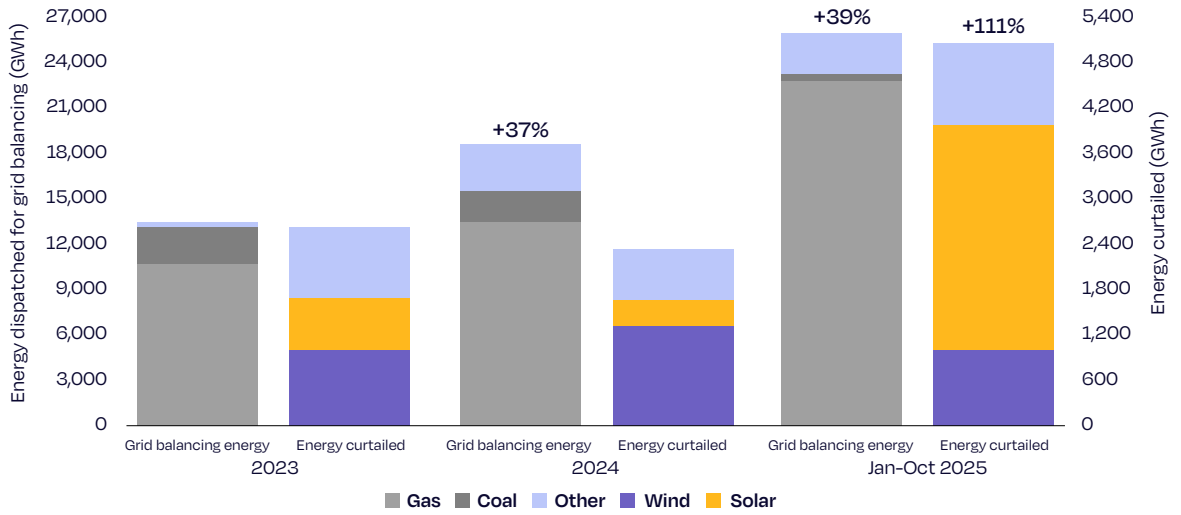
Despite these very positive developments, on April 28, 2025, a massive blackout disrupted the entire synchronous grid system of Spain and Portugal, affecting tens of millions across the Iberian Peninsula. This unprecedented event demonstrated once again the importance of robust system-resilience measures.

Since the blackout, the Spanish grid operator has relied on gas-fired generation to meet demand, especially for grid stabilisation services, such as voltage control (see Fig. 17). Given that investment in grid development and clean flexibility solutions has not kept pace with renewables growth, the Spanish grid operator continues to call more combined cycle gas turbines (CCGT) to provide grid stabilisation services. These services are contracted bilaterally rather than through open, transparent market mechanisms.

Figure 17

Gas continues to provide most grid balancing services in Spain, especially after the blackout, while curtailment nearly doubles

Spain yearly volume of grid balancing and curtailment operations 2023-2025



7 Ember (2025): How Spain cut the link between gas and power prices using renewables

Additionally, curtailment of renewables nearly doubled in 2025 to more than 5 TWh, further increasing system-management costs. As solar and wind are curtailed to resolve voltage control issues or physical grid constraints, gas power plants step in. This leads not only to wasting cheap, clean electricity, but also to higher CO_2 emissions and system costs.

The use of fossil units (gas and coal) for grid services climbed from 14 TWh in 2021 to more than 26 TWh in 2025. However, Spain's gas fleet is far more utilised for grid balancing than for overall power generation. In 2025, gas and coal accounted for less than 20% of Spain's electricity production but delivered over 80% of its balancing requirements.

Cleaner, cheaper and faster to deploy technologies such as battery storage can reinforce Europe's electricity system and ease renewable integration. Expanding these solutions reduces the impact of expensive gas on grid-service costs, just as wind and solar growth have reduced gas-driven pressure on wholesale electricity prices. Yet, progress on such investments in Spain and Europe remains notably slow.

Batteries are the ultimate shortcut for the energy transition to a flexible and electrified energy system

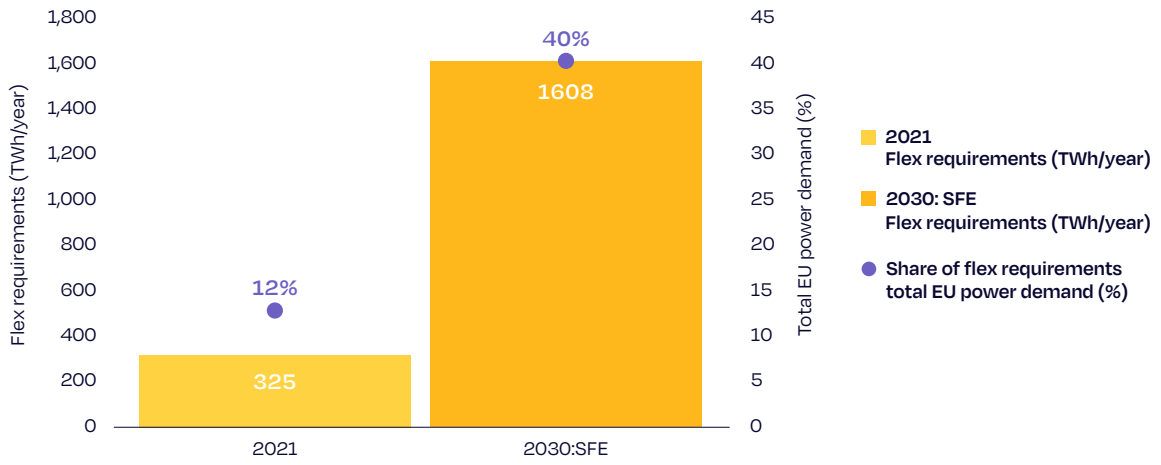
The **flexibility** requirements of an energy system are estimated using the residual load curve, which is defined as the load that needs to be served by dispatchable technologies. It is derived by subtracting must-run assets (units required to ensure reliable operation of the grid) and variable renewable generation from the demand curve. When an energy system transitioning away from fossil fuels faces growing grid congestion, more low or negative price hours, lower capture rates for solar PV, and increasing curtailment, it means that flexibility needs are escalating.

According to the most ambitious scenario in SolarPower Europe's flexibility study[8], EU power flexibility needs will grow five-fold by 2030, from 325 TWh/year in 2021 to more than 1,600 TWh/year (see Fig. 18). By 2030, 40% of the power demand in the EU will have to be flexible.

Figure 18

EU power flexibility needs to grow fivefold by 2030

EU flexibility requirements by 2030 relative to 2021



Note: "SFE" - Solar, Flexibility and Electrification scenario

Notably, half of these flexibility requirements will arise on a daily basis (810 TWh/year), providing an opportunity for battery storage to play a critical role by shifting excess daytime generation to meet evening demand peaks.

According to Mission Solar 2040, in a fully flexible and electrified energy system, batteries and demand response emerge as key enablers, capable of meeting two-thirds of the EU's daily flexibility needs by 2030. Additional clean flexibility solutions can supply over 30%, displacing nuclear and natural gas to only provide 10%.

8 SolarPower Europe (2024): Mission Solar 2040

Batteries are the most effective tool for firming up renewables. Coupling renewables with batteries transforms variable generation into a firm, dispatchable supply. This also enables renewable producers to smooth short-term fluctuations and avoid penalties. Batteries are also a "time and space machine", shifting renewable power to when and where it is needed most. They store power during periods of excess renewable generation and discharge during peak demand, and simultaneously reduce curtailment and relieve grid congestion. The recent move to 15-minute spot-market intervals instead of hourly now gives battery operators more frequent arbitrage opportunities. By managing the renewable load, batteries help ease stress on grid networks and defer unnecessary network expansions.

If adequately procured via market mechanisms, batteries can also provide a wide range of essential grid services to maintain stability and deliver emergency support. These include frequency regulation, voltage control, and even supplying power to restart sections of grids after a blackout. All these fundamental capabilities must be remunerated fairly through auctions via ancillary and capacity markets. However, despite some progress, most grid services in Europe remain unrewarded[9].

9 SolarPower Europe (2025): European Market Outlook for Battery Storage 2025-2029

The state of EU battery manufacturing

While Europe as a block has grown into the world's second largest battery cell producer after China, with 250 GWh of capacity in 2025, high production costs, supply chain dependencies, and delayed investments continue to constrain its competitiveness. Shifting market dynamics, such as rising demand for stationary storage and the growing adoption of LFP chemistries, are reshaping the industry's direction. This chapter provides an overview of the state of European battery industry, from cell components and cell manufacturing to pack and module assembly, across the electric vehicle and BESS segments.

4.1 Overview of the European battery industry

In 2024, global lithium-ion (li-ion) battery cell production capacity reached around 1.6 TWh/year[10]. While China dominates battery cell manufacturing with 77% of global production, Europe ranks second, hosting 9% of global production capacity in 2024 with 145 GWh/year. This represents a 22% increase compared to 2023, when the battery industry contributed an estimated 90,000 direct jobs to the EU economy[11]. Although domestic production has grown significantly over the years, the EU still imports about 50% of its demand[11], with a net import balance of 17 billion EUR in 2024[12]. Despite some setbacks in 2025, lithium-ion battery production capacities in Europe continue to expand to meet rising demand:

SolarPower Europe's latest analysis estimates around 250 GWh/year of li-ion battery cell nominal production capacity in Europe by the end of 2025[13].

The EU has announced and initiated policies to support its still-nascent battery industry. In December 2024, the EU Commission allocated EUR 1 billion in grants via the Innovation Fund to support EV battery cell manufacturing projects, while working with the EIB to ensure full use of the EUR 200 million top-up of InvestEU loan guarantees. Most recently, in December 2025, as part of the Battery Booster Strategy[14], the Commission announced the mobilisation of 1.5 billion EUR from the Innovation Fund in interest-free loans to support European battery cell producers during the ramp-up phase. The sector will then receive additional support through the European Competitiveness Fund under the EU's next multiannual budget. While these measures may contribute to strengthening European industry and improving competitiveness, it remains to be seen whether they are sufficient on their own to secure the future of this emerging sector. Rather, they are a foundational step, highlighting the need for additional actions on both the supply and demand sides.

The battery industry value chain goes beyond cell production: it encompasses upstream (raw material extraction and processing), midstream (materials transformation and cells/packs manufacturing), and downstream (deployment, use, re-use, recycling and end-of-life) stages of the value chain.

While upstream stages for battery materials mining and extraction are lacking in the EU (see Content box 3), Europe has been developing its midstream battery industry for cell components, cells and battery modules/packs, primarily for the EV sector. Currently, 90% of existing cell production capacity in Europe, and globally, serves the EV market. Still, demand for stationary batteries is gaining traction, and an increasing number of European battery assemblers are expanding towards stationary storage. 11 companies with BESS in their product portfolio have opened new battery assembly lines in the EU over the last two years alone.

10 CRU Group 2025 data from European Market Outlook for Battery Storage 2024-2029

11 EU Commission Clean Energy Technology Observatory (CETA) (2024) : Battery Technology in the European Union

12 Bruegel Clean Tech Tracker

13 Europe includes the EU-27, UK, Norway and Switzerland

14 EU Commission (2025): Battery Booster Strategy

Box 2

Upstream: battery materials mining and processing in Europe

Raw materials needed for battery manufacturing include cobalt, graphite, lithium, manganese and nickel, as well as copper and aluminium for anode components. The mining of battery metals is highly concentrated outside the EU. Australia, Chile and China account for over 75% of global lithium extraction, while about 65% of the world's cobalt is mined in the Democratic Republic of the Congo (DRC). Meanwhile, nickel production is similarly concentrated, with Indonesia supplying man than 60% of the global total. However, the latest mainstream battery technology, LFP, which has been quickly gain market shares, is cobalt/nickel free – thus reducing dependencies significantly (even more so with sodium/ion batteries). Over 50% of phosphate and graphite supplies come from China, while just four countries account for more than 75% of manganese extraction.

After all these minerals are extracted, they are mostly sent overseas refining into high-purity, battery-grade materials. At the refining stage, China dominates, processing more than half of global lithium, cobalt, manganese, and phosphate. For natural graphite, the primary anode material, China controls the entire end-to-end supply chain. Nickel's processing is also concentrated, with 75% handled in Indonesia and China.

As a result, the EU is heavily dependent on international markets for the supply of battery metals used in cells production. According to the EU Commission, in 2023 the EU imported almost 80% of its primary raw minerals for batteries, and over 60% of the processed materials. For refined lithium, the chemical foundation of all batteries, dependence is total.

To strengthen European raw materials value chains and diversify supply sources, in line with the Critical Raw Materials Act (CRMA), the EU Commission adopted in March 2025 a list of 47 Strategic Projects to boost domestic capacities. The goal is to ensure European extraction, processing and recycling of strategic raw materials meet 10%, 40% and 25% of EU demand by 2030, respectively. 70% of these projects focus on battery raw materials.

4.2 European battery manufacturing segments

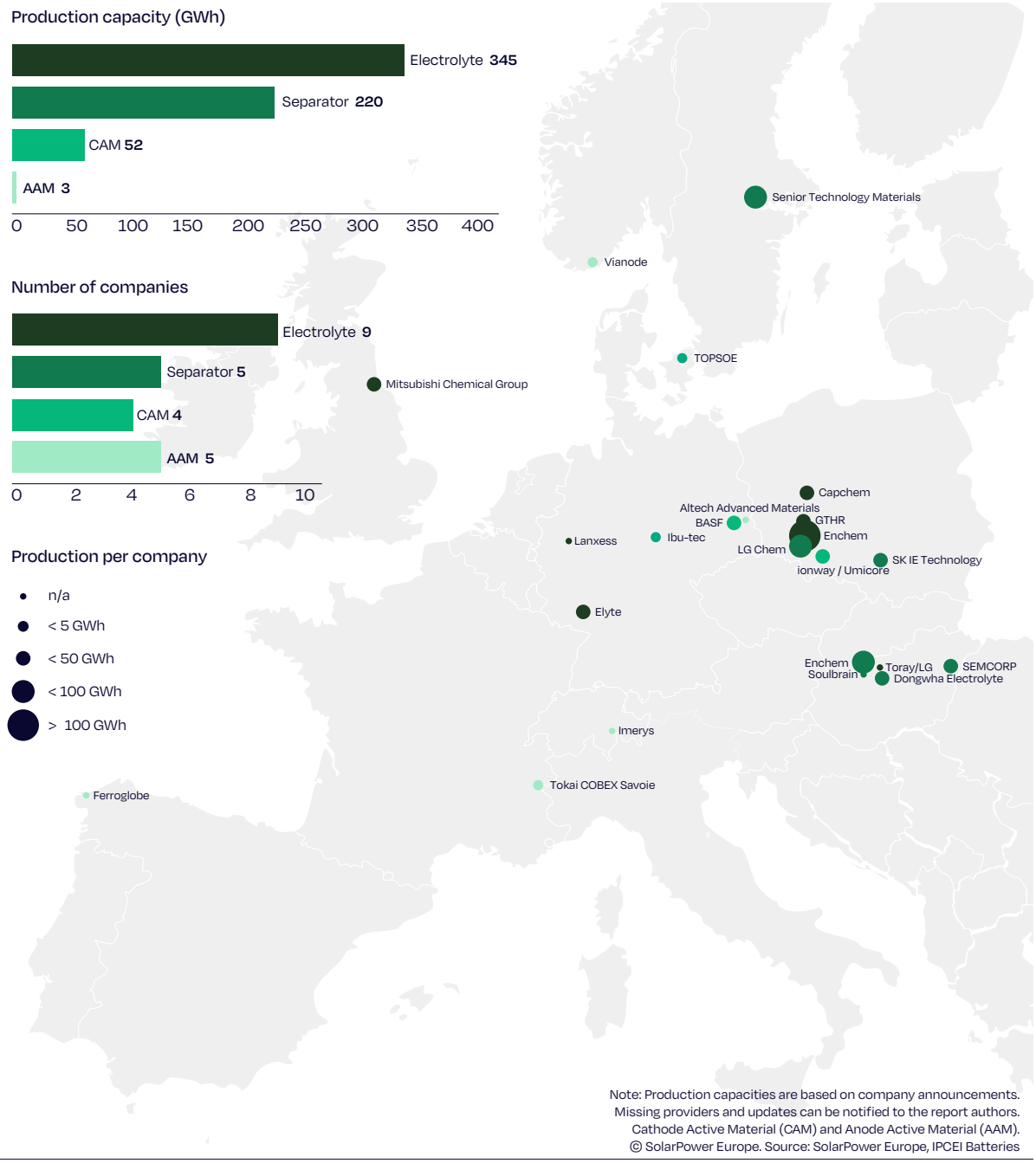
The midstream stage of battery supply-chains can be separated into three key segments: the production of cell components (Fig. 19), cell manufacturing (Fig. 20), and battery module/pack assembly (Fig. 21).

Cell components manufacturing in Europe

Battery cells contain four major components: cathodes, anodes, electrolytes and separators. In the battery, electrolytes enable the transport of lithium ions between the anode and the cathode, while the separator prevents short circuits by keeping anodes from cathodes apart. According to SolarPower Europe's latest analysis, Europe hosts 52 GWheq/a of cathode active material (CAM) manufacturing capacity, 3 GWheq/a of anode active material (AAM) capacity, 345 GWheq/a of electrolyte production, and 220 GWheq/a of separator production (Fig. 19).

Figure 19

Battery cell components manufacturing map, EU-27, Norway, Switzerland, UK



Note: Production capacities are based on company announcements. Missing providers and updates can be notified to the report authors. Cathode Active Material (CAM) and Anode Active Material (AAM).
 Source: SolarPower Europe, IPCEI Batteries

Cathode active materials (CAM)

With total European CAM capacity standing at **52 GWheq/a**, the two largest CAM factories in Europe are operated by Umicore (BE) in Poland and BASF (DE) in Germany, with capacities of 20 GWheq/a and 30 GWheq/a respectively. Both produce nickel-containing CAM. In cathodes, chemistry determines the properties of the battery: nickel-manganese-cobalt (NMC) batteries have been the mainstream choice for EVs over the last decade, while LFP batteries are emerging as the preferred chemistry for EV and stationary batteries due to lower costs (around 30% lower than NMC) and higher thermal stability.

There is still a significant gap between EU CAM production and cell manufacturing capacity, leaving the region dependent on imports. Based on company announcements, over 200 GWh of additional CAM capacity could be established in Europe by 2030. However, a challenging market environment is delaying the expansion of production capacities, which is heavily dependent on demand from European cell manufacturers, and their strategic positioning between LFP and nickel-based batteries.

Anode active materials (AAM)

As of end-2025, total production capacity for AAM in Europe remains limited, at about **3 GWheq/a**. There are only a few small production facilities in Europe, especially compared to China, which controls over 97% of global AAM capacity[15]. Most European efforts are still in planning or early implementation stages, focusing on synthetic graphite and silicon-based anodes. Announced projects from Shanshan (CN) with Imerys (FR) and Epsilon Advanced Materials (IN), including a planned scaleup of a pilot plant in Germany, could increase capacity in the coming years.

Electrolytes

At the end of 2025, Europe hosts **345 GWheq/a** of electrolyte production capacity. Numerous companies producing electrolytes are already established, developing a manufacturing base alongside rising cell production. A large share of electrolyte production capacity is attributed to South Korean Enchem, with a combined capacity of 175 GWheq/a across its two sites, in Poland and in Hungary. All other producers are Chinese, South Korean or Japanese companies, except for E-Lyte (DE), with operates in Germany.

Separators

With a total annual capacity of **220 GWheq**, separators for lithium-ion batteries are produced by companies such as LG Chem (KR) in Poland, and Toray (Japan) in Hungary. All active players in this segment with production in Europe are based in China, South Korea or Japan.

Battery cell manufacturing in Europe

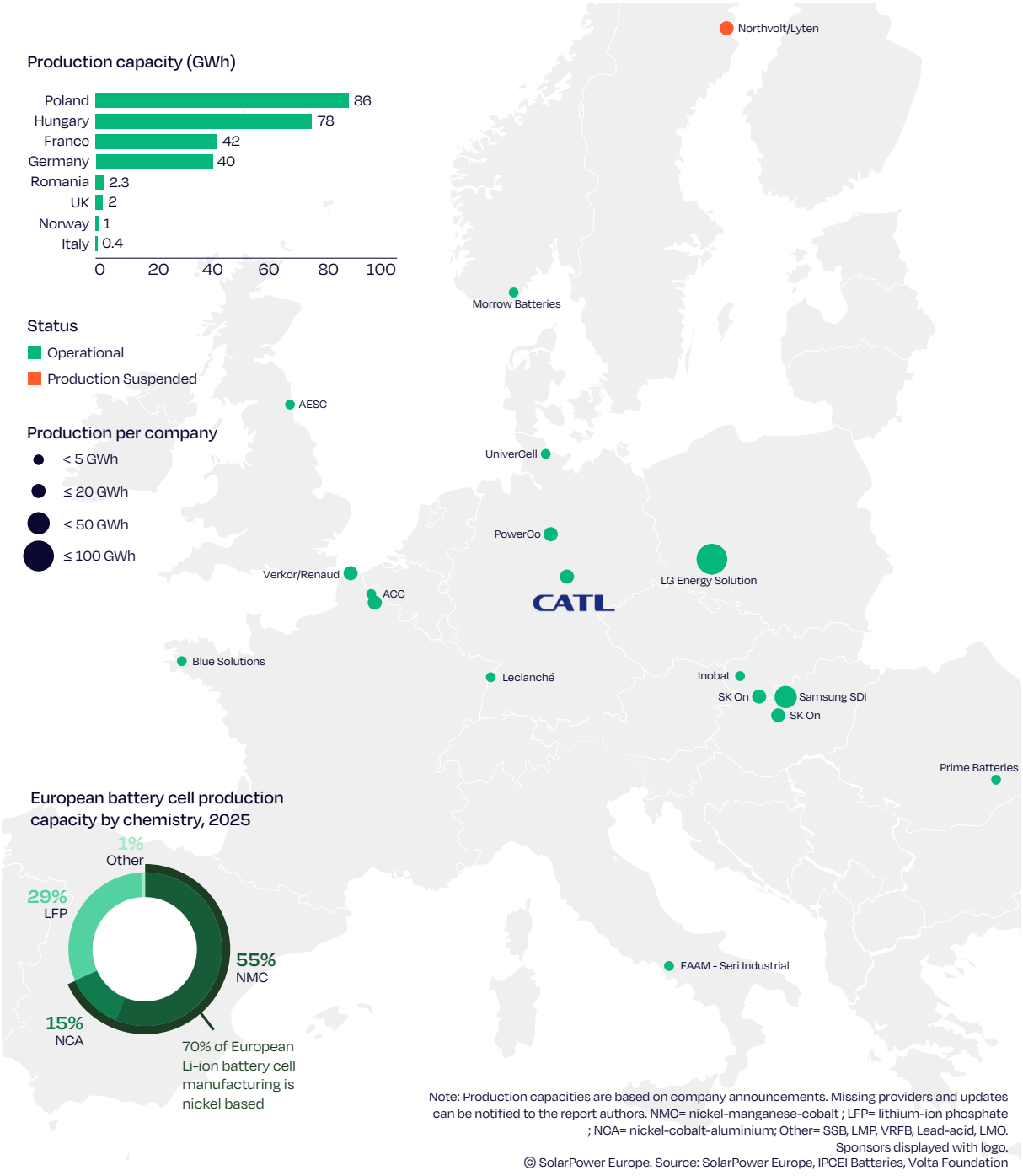
Once the battery cell components are produced, they are assembled into a battery cell. Europe hosts **252 GWh** of annual battery cell production capacity in 2025 (Fig. 20), 80% of which serves EV applications (with around 19% dedicated to ESS, alongside other EV activities). In terms of chemistry, 70% of European battery production is nickel-based (NMC/NCA). This is expected to shift towards higher shares of BESS and LFP, as battery storage systems deployment accelerates, and nearly all major global automakers plan to integrate LFP into their portfolios to reduce costs.

15 IEA (2024): Global EV Outlook 2024

The bulk of cell production in Europe is held by three South Korean companies (LG Solution, Samsung SDI and SK On), totalling 164 GWh/year of capacity from their sites in Poland and Hungary. While Chinese CATL also opened a 14 GWh EV battery cell factory in Germany in 2023. Meanwhile, European players such as ACC (FR), Verkor/Renaud (FR), PowerCo (DE) are increasingly contributing to domestic battery production capacity.

Figure: 20

Lithium-ion battery cell manufacturing map, EU-27, Norway, Switzerland, UK



Note: Production capacities are based on company announcements. Missing providers and updates can be notified to the report authors. NMC= nickel-manganese-cobalt ; LFP= lithium-ion phosphate ; NCA= nickel-cobalt-aluminium; Other= SSB, LMP, VRFB, Lead-acid, LMO. Sponsors displayed with logo.

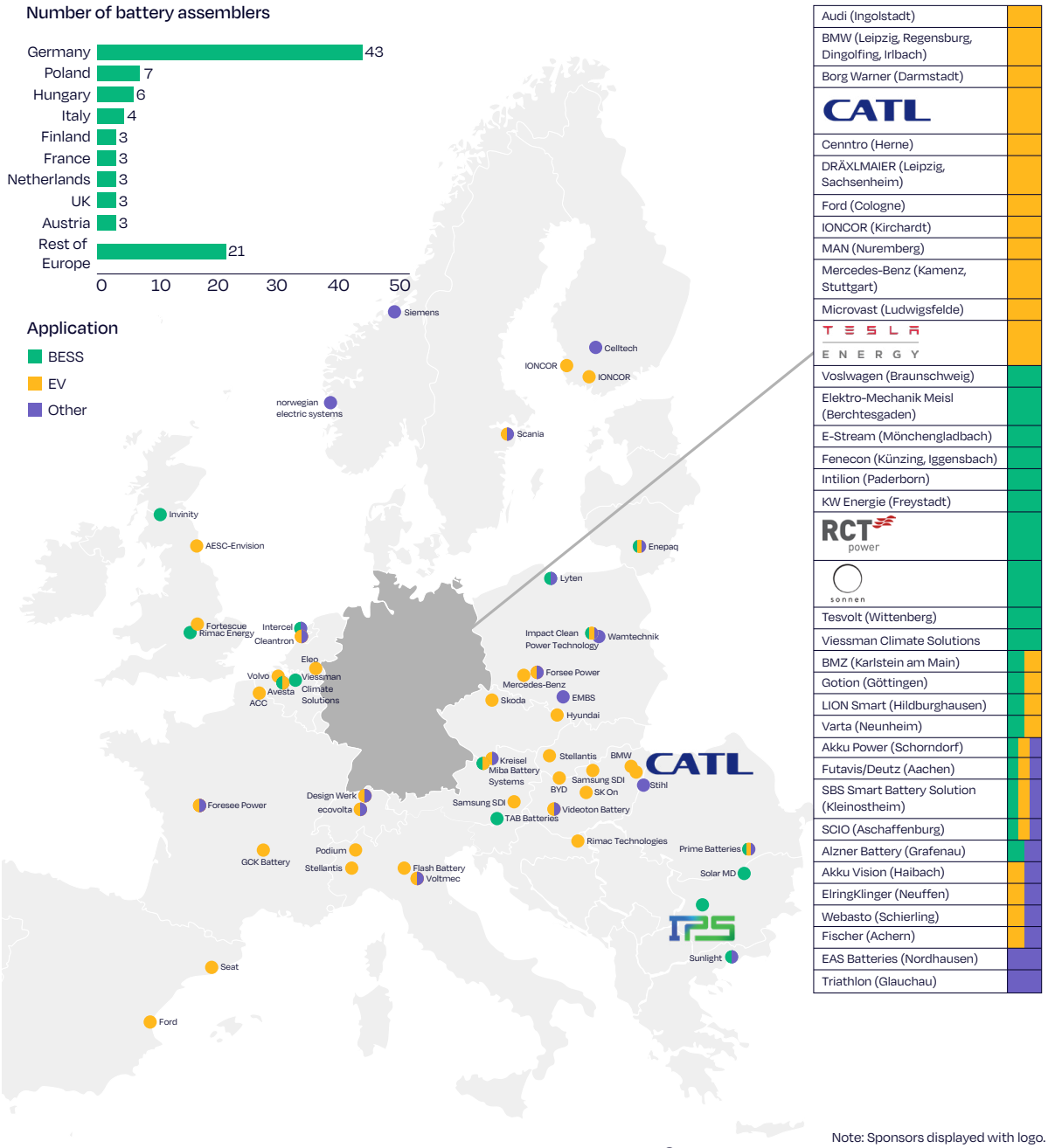
Battery cell manufacturing in Europe increased from just 1 GWh in 2017 to over 250 GWh today, representing investments of around EUR 33 billion in battery factories by 2025[16]. Still, many battery producers in Europe are postponing or cancelling expansion plans due to uncertainty over future profitability. Production costs in the region are about 50% higher than in China[17]; meanwhile, the battery supply chain ecosystem is still relatively weak. When Swedish Northvolt, Europe's largest investment in a homegrown battery producer, declared bankruptcy in late 2024, it underscored the challenges of competing with Asian producers, as smaller manufacturers still struggle to scale production and achieve sufficient yields.

Battery pack and module assembly in Europe

In the final stages of battery manufacturing, cells are assembled into modules and battery packs for use in on-road mobility, battery storage, or other applications (e.g. off-road mobility for agriculture and industry applications, defence, construction, maritime, etc).

Figure: 21

Battery packs and modules assembly map, EU-27, Norway, Switzerland, UK



Note: Sponsors displayed with logo.
© SolarPower Europe. Source: SolarPower Europe, Battery Atlas

16 BloombergNEF
17 IEA (2024): Energy Technology Perspectives 2024

81 companies currently assemble batteries in Europe, the majority (68%) serving the EV sector, developing solutions for electric cars or heavy-duty mobility (buses, trucks) (see Fig. 21). While most EVs assembly sites focus exclusively on mobility, as with Tesla (US) or CATL (CN), other companies also operate across multiple segments producing solutions for ESS and/or other sectors. While certain assemblers source their cells in Europe, either from their own domestic production (e.g. CATL), or through partnerships with other manufacturers, most still import battery cells from Asia and perform only final assembly in Europe.

Only 16% of European assemblers specialise in BESS, such as RCT Power (DE) and Sonnen (DE) in Germany. Some start-ups even develop BESS products using second-life EV batteries. A progressive shift is noticeable among suppliers, originally specialising in high performance battery systems for mobility and industry, expanding their portfolios to include batteries for stationary applications in renewable energy.

Germany hosts the largest number of battery assemblers in Europe, with 43 active producers. Next come Poland and Hungary, while the remainder spread across 20 countries. From an estimated 10 companies active in 2010[18], battery system production has grown eightfold in the last 16 years.

18 Battery News (2024): Battery Atlas

Box 3

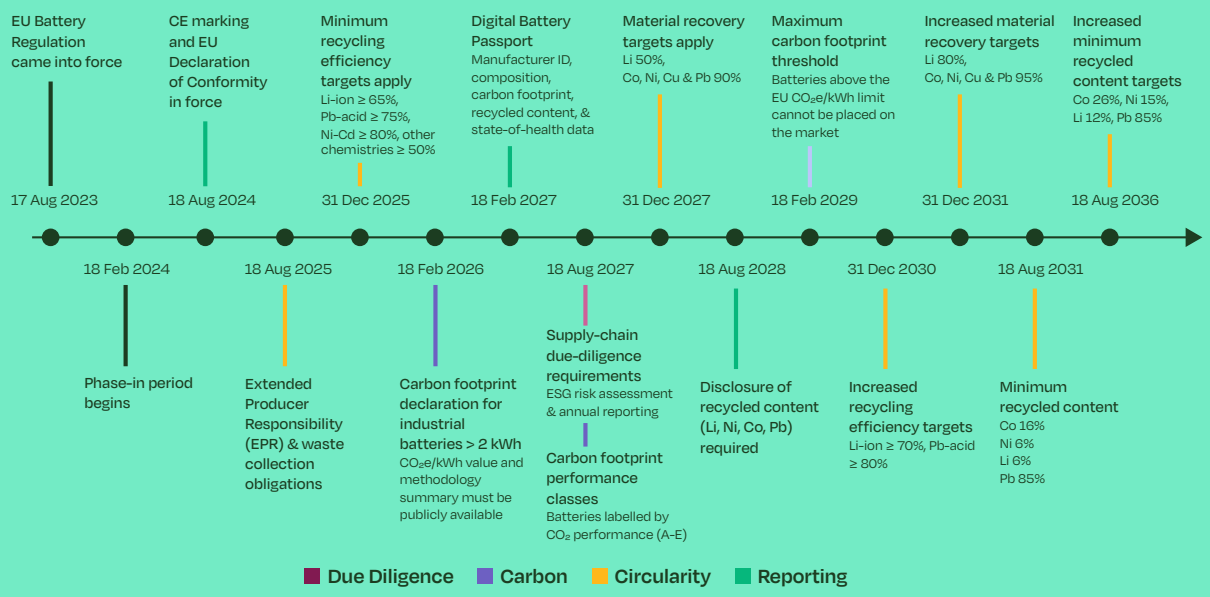
Europe's BESS ESG Landscape: 2025 Progress and the 2026 Outlook

Across Europe's battery storage sector, 2025 brought slower regulatory progress but faster operational preparation. The repeal of the EU Battery Directive in August consolidated regulation under the EU Battery Regulation, now the single framework governing industrial batteries, including BESS. The regulation ensures all batteries in the EU market meet consistent safety and sustainability standards through phased requirements.

Extended Producer Responsibility obligations took effect in August, requiring BESS producers to finance and report on collection, treatment, and recycling via national schemes. But the year's most significant development came in July, when the European Commission postponed supply chain due diligence obligations to August 2027, reflecting the absence of appointed verification bodies and finalised guidance. Implementation guidance is now expected by mid-2026.

Figure 12

EU Battery Regulation timelines and requirements



The postponement did not slow industry preparation. Many manufacturers and developers used the additional time to build OECD-aligned due diligence processes, engage upstream suppliers and strengthen risk management. In parallel, traceability efforts expanded, with companies testing digital battery passport solutions to capture origin and processing data across mining, refining, and cell production. Investor expectations reinforced this momentum, with increasing pressure for stronger disclosure and supply chain governance. The delay provided developers a longer runway to professionalise ESG systems rather than defer action.

Attention now turns to 2026, where key compliance deadlines face growing uncertainty. Product carbon footprint declarations remain the most significant unresolved issue. Declarations are scheduled to apply from 18 February 2026 for rechargeable industrial batteries above 2 kWh. However, requirements will only take effect 18 months after the Commission adopts the necessary delegated and implementing acts or from 18 February 2026, whichever is later. These acts, which define calculation methodology and declaration format, have not yet been adopted, pointing towards delay.

Separately, the Commission must assess recycling efficiency and material recovery targets by 18 August 2026. This review will examine whether evolving battery technologies, shifts in material availability (particularly for cobalt, lithium and nickel) and technical progress justify revising current targets. The outcome could materially reshape producer responsibility obligations and end-of-life planning.

The postponement did not slow industry preparation. Many manufacturers and developers used the additional time to build OECD-aligned due diligence processes, engage upstream suppliers and strengthen risk management. In parallel, traceability efforts expanded, with companies testing digital battery passport solutions to capture origin and processing data across mining, refining, and cell production. Investor expectations reinforced this momentum, with increasing pressure for stronger disclosure and supply chain governance. The delay provided developers a longer runway to professionalise ESG systems rather than defer action.

Sarah Montgomery
Cofounder & CEO of Infyos

What to expect from 2026

This chapter presents the perspectives of four leading research firms, each examining the European BESS market through distinct lenses - including market evolution, policy developments, and pricing trends. Their analyses unpack the key dynamics that shaped 2025 and offer forward-looking insights for 2026, supported by the latest data and visualisations.

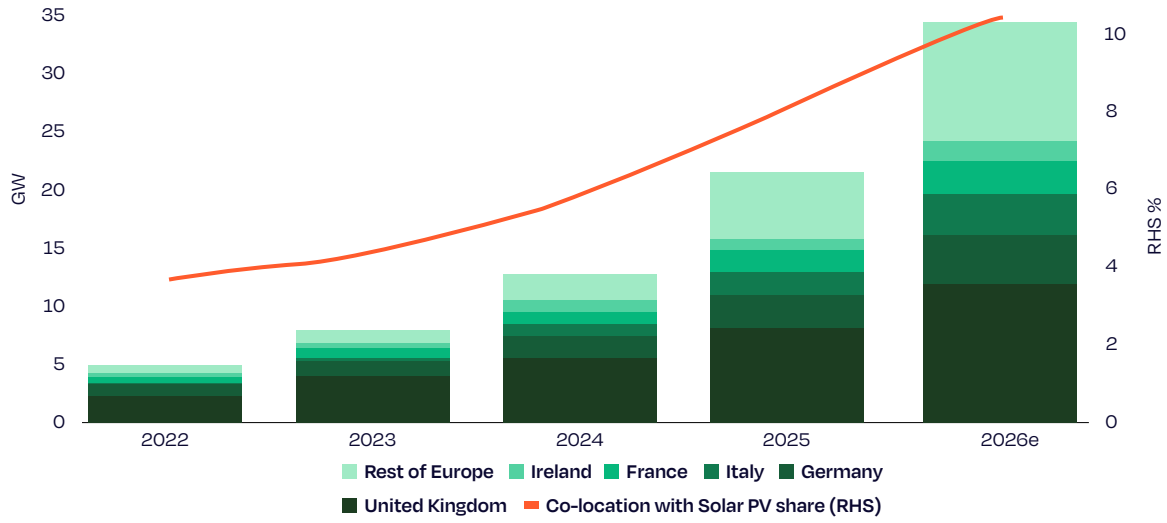
5.1 Rystad Energy

Falling system costs and evolving policies accelerate Europe's utility-scale storage expansion

2025 has been a record year for utility-scale BESS in Europe, with almost 8 GW of new capacity expected and total operational capacity approaching 20 GW. The United Kingdom, Germany and Italy continue to lead the market, supported by mature regulatory frameworks, strong development pipelines and sustained investor interest. Growth is expected to accelerate further in 2026, with current pipelines indicating close to 13 GW of additions-around 50% more than 2025 additions. Unlike previous years, when deployment was highly concentrated in a few markets, 2026 is likely to be more geographically diversified. Emerging markets in Eastern and Southern Europe are developing supportive policy frameworks and increasingly benefit from attractive arbitrage opportunities, positioning them for faster utility-scale deployment.

Figure 22

Continental Europe utility-scale BESS capacity 2022-2026e



High wholesale price volatility, declining solar capture rates, and the need for flexibility in increasing renewables capacity in grids with coal power and nuclear baseloads are reinforcing the role of storage as a strategic infrastructure asset. At the same time, ongoing system price reductions, driven by improved system efficiency, increased competition, and the growing presence of Chinese suppliers in Eastern Europe, are bringing turnkey system costs close to 200 EUR/kWh. As a result, the levelised cost of storage (LCOS) for new projects is falling below 60 USD/MWh. Under these conditions, merchant energy shifting is increasingly able to support standalone investment cases and enhance the economics of co-located solar PV projects.

Historically, most utility-scale BESS projects in Europe have been standalone assets, optimising the revenue stacks on merchant markets. While co-located systems are likely to gain importance as solar capacity grows, merchant revenues remain a key driver in 2026. Policy developments will shape regional deployment trajectories: the UK is advancing project reforms, Italy is supporting with MACSE auction, Germany's amendment of the Energy Industry Act (EnWG) and Spain's permitting simplifications for co-located projects could unlock further growth.

In emerging Southeastern European markets-including Bulgaria, Romania, Greece and Hungary—supportive regulation and EU fund allocations in addition to favorable arbitrage spreads are expected to drive increased investment.

Overall, 2026 is positioned to be another pivotal year for European BESS, supported by declining system costs, rising flexibility needs and increasingly enabling policy environments. These fundamentals are expected to sustain strong market growth through the second half of the decade.

Sepehr Soltani
Senior Energy Storage Analyst, Rystad Energy

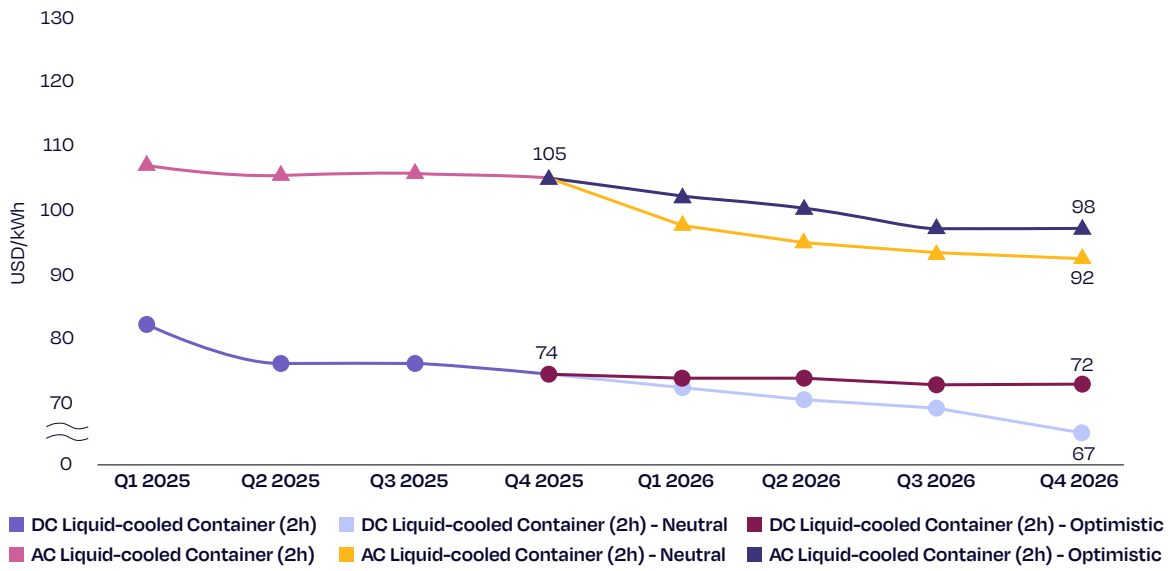
5.2 Infolink

European BESS market in 2026: Implications of a tight cell supply–demand balance

In Q4 2025, the free on board (FOB) price range for two-hour DC-side battery storage containers exported from Chinese suppliers to Europe stood at 66–83 USD/kWh. The delivered duty paid (DDP) price for two-hour AC-side systems was 94–118 USD/kWh, both down by approximately 10% year-on-year.

Figure 23

2025 prices and forecast for Chinese ESS products exported to Europe



Note: DC-side prices are quoted on an FOB basis, while AC-side prices are qutoed on a DDP basis.

Overall, BESS prices in Europe trended downward from 2024 through the first three quarters of 2025, driven primarily by three factors. First, Chinese storage companies accelerated overseas expansion and actively participated in tenders across the European market, intensifying competition and exerting downward pressure on prices. Second, declines in upstream lithium salt and cathode material prices translated into corresponding cost reductions. Third, BESS prices in Europe have remained approximately 30% higher than those in China, leaving ample room for price correction. Part of this price gap has narrowed through supply chain cost compression and price negotiations.

Since the second half of 2025, the supply–demand balance for cells tightened markedly. As demand picked up across multiple regions alongside a cost rebound, the storage cell market shifted from oversupply to a period of tight balance. As a result, utilisation rates among China's leading cell manufacturers generally remained above 90% in Q4, and prices rebounded significantly after stabilising at prior trough levels.

Taking all factors into account, InfoLink expects overall energy storage system prices in Europe to follow a "stable with mild downside" trajectory in 2026. This outlook is underpinned by several key factors. To begin with, in China's domestic market, the scope for further cost reductions at both the cell and system levels remains limited, constrained by the growing consensus around industry pricing discipline, and cost floor management. This limits the potential for Chinese suppliers to further reduce export prices to Europe.

Moreover, emerging markets are projected to contribute a larger share of incremental demand during 2026–2030. As a high-price, high-barrier market, Europe will continue to attract Chinese suppliers, but competition is increasingly shifting toward structural optimisation and service-based premiums rather than straightforward price cuts.

Lastly, the current mainstream 314Ah cell is facing mounting pressure from higher-capacity next-generation products. Manufacturers have therefore become more cautious about the pace of new capacity expansion, which helps mitigate the risk of renewed oversupply and aggressive price competition.

Nathon Li
ESS Market Research Analyst, Infolink Consulting

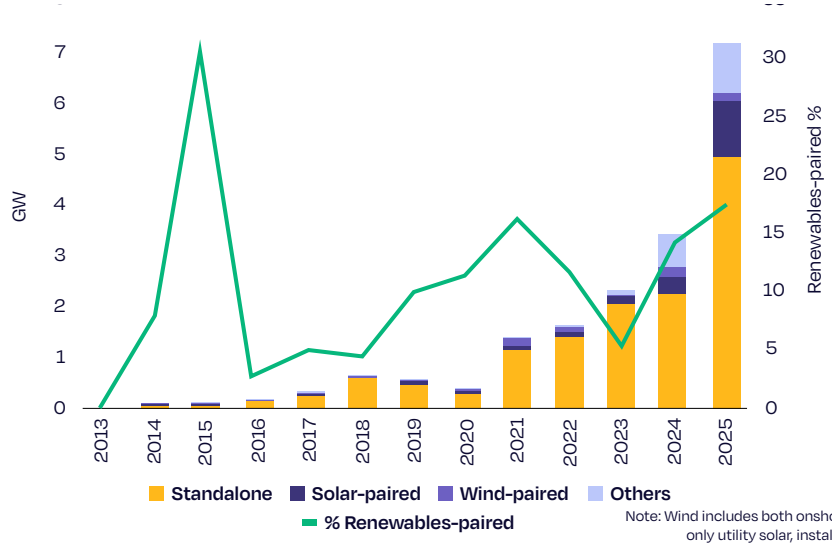
5.3 Wood Mackenzie

Storage Co-location: Emerging from niche to mainstream

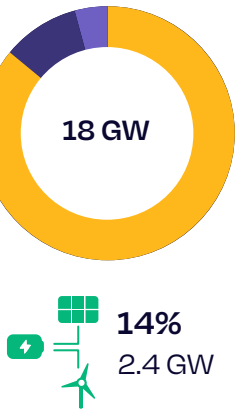
European battery storage investment is undergoing a significant shift, with annual utility-scale installations growing 85% year-on-year in 2025. While 80% of installed capacity remains in standalone systems, market dynamics are driving rapid change toward co-located projects.

Figure 24

Europe utility storage capacity per co-location and renewable-paired share 2013-2025



Europe total utility-storage capacity by co-location share



Note: Wind includes both onshore and offshore wind capacity and solar includes only utility solar, installed utility storage capacity excludes pump hydro.
 Source: Wood Mackenzie

Negative prices, once rare, now occur around 500 to 700 hours annually in some regions. This reflects both the success of renewable deployment and structural weaknesses in grid flexibility. The problem stems from renewable support schemes, inflexible generation, and insufficient storage-compounded by curtailment affecting up to 30% of production in leading solar markets like Spain.

This has made standalone solar projects increasingly difficult to finance. Off takers demand PPA (power purchase agreement) clauses that exclude negative price settlement, undermining bankability. Developers are responding with innovative structures like "deemed generation" PPAs, which apply a zero-price floor while preserving contractual certainty. However, these negotiations remain complex, pushing the industry toward hybrid PPA contracts that integrate batteries to mitigate volatility.

Grid infrastructure is now identified by most developers as the primary bottleneck to renewable and storage deployment, and the major obstacle to new investment. The challenge is intensifying as delays in building grid infrastructure and 2-3x higher costs mean current grid capacity is insufficient to meet near-term deployment targets.

Co-located projects address these grid challenges by maximising existing connections and enhancing utilisation without requiring new infrastructure, while batteries balance intermittent renewables and absorb oversupply.

Despite clear benefits, co-location represents only 14% of Europe's installed storage versus 31% in the US. This gap reflects underlying complexity: hybrid projects require sophisticated design, face fragmented permitting processes, and demand advanced trading capabilities that many developers lack.

Future success requires three key shifts: regulatory adaptation (streamlined hybrid permitting), innovative commercial models (hybrid PPAs with price floors), and platforms that offer integrated trading and portfolio-level financing. Markets like Spain and Germany, facing acute curtailment and connection challenges, will likely lead Europe's transition as battery costs continue falling and grid constraints tighten. Co-location is becoming both economically attractive and strategically essential for unlocking Europe's renewable transition.

Anna Darmani
Principal Energy Storage Analyst EMEA, Wood Mackenzie

5.4 EUPD Research

Commercial & industrial storage emerges as the fastest growing force in Europe's behind-the-meter energy transition

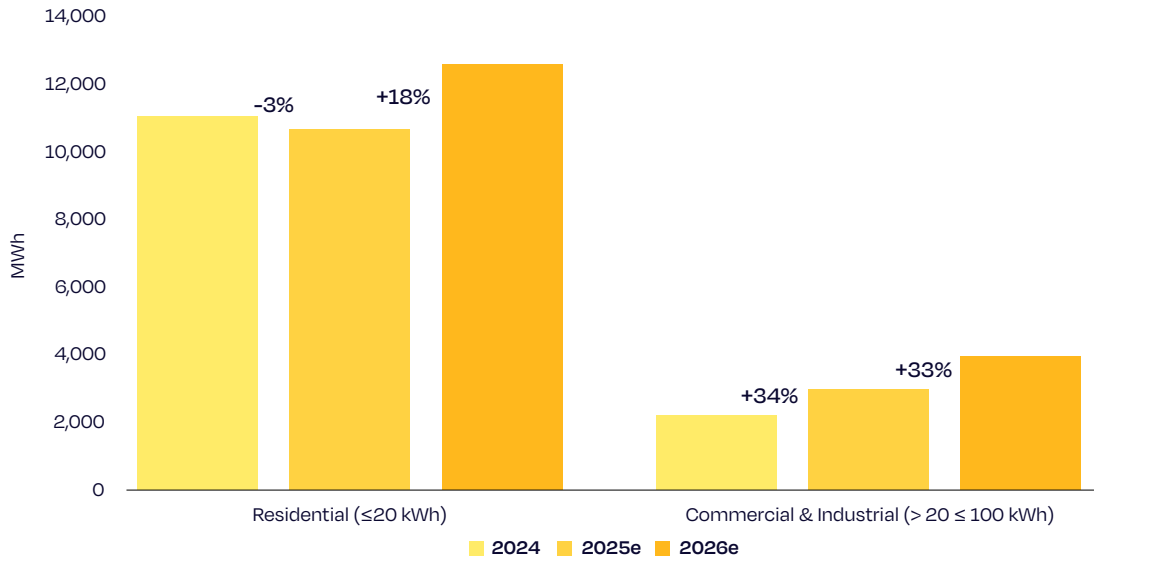
C&I storage is emerging as the fastest growing pillar of Europe's small scale energy transition. In contrast to the slowdown in residential and C&I solar installation expected in 2025 and 2026, driven by high interest rates, stabilised electricity prices, and the phase out of schemes such as France's Feed-in-Tariffs (FiT) programme, battery adoption is accelerating rapidly.

These shifts in policy are now directly encouraging storage investment. For example, France's FiT (Obligation d'Achat) reductions are expected to strengthen the business case for on-site batteries, but the impact is yet to be seen. In Germany, the dynamic pricing framework, planned reductions in electricity tax (Stromsteuer), and the anticipated cap or reduction of grid usage fees (Netzentgelte) from 2026 are expected to inject renewed momentum into the storage market.

In 2025, residential storage saw a 3% decline, while C&I storage installations grew by 34% across Europe. Looking ahead to 2026, residential storage is projected to rebound to 18% growth, while C&I again leads at 33%. Driven by sharp price reductions for storage systems, businesses are rapidly adopting batteries to manage price exposure, reduce peak demand, and improve resilience against grid disturbances.

Figure 25

Europe annual installed behind-the-meter BESS capacity 2024-2026e



© SolarPower Europe. Source: EUPD Global Energy Transition Matrix

EPC (Engineering, Procurement and Construction) and installer feedback confirms this momentum. Among 133 EPCs surveyed across six major European markets, 65% currently offer storage solutions. Around 75% of these EPCs expect a more favourable business outlook in the next six months.

Aside from sharp price reductions in storage systems, regulation is widely reported as a key driver. 52% of EPCs cite targets and programmes, and 48% highlight European and national regulatory frameworks. Sweden illustrates this clearly, as allowing C&I batteries to participate in balancing EPC (Engineering, Procurement and Construction) and installer feedback confirms this momentum.

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Aside from sharp price reductions in storage systems, regulation is widely reported as a key driver. 52% of EPCs cite targets and programmes, and 48% highlight European and national regulatory frameworks. Sweden illustrates this clearly, as allowing C&I batteries to participate in balancing markets has turned storage into a revenue generating asset. Yet barriers persist. 60% of EPCs report permitting uncertainty, and 50% cite insufficient incentives. Czech Republic exemplifies this, where high demand among C&I consumers is constrained by slow permitting challenges.

Despite these hurdles, the direction is unmistakable. C&I storage is now on the strongest growth trajectory within Europe's behind-the-meter energy transition. With expanding market access, emerging revenue opportunities, and strong readiness among installers and EPCs, C&I storage is positioned for another strong year of growth in 2026.

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