



# EUROPEAN ENERGY TRENDS 2025

THE EUROPEAN UNION HAS CROSSED A HISTORIC THRESHOLD: SOLAR BECAME THE CONTINENT'S LARGEST ELECTRICITY SOURCE, WIND SURGED TO RECORD LEVELS, AND RENEWABLES REACHED NEARLY HALF OF EU GENERATION. EXPLORE HOW WIND, SOLAR, AND STORAGE ARE RESHAPING EUROPE'S ENERGY FUTURE.

March 2026

# A word from our Director, Dr. Francesca Conti



The year 2025 marks a turning point in Europe's energy transition. Not because a single breakthrough transformed the system, but because multiple shifts began to align at scale.

Across the continent, renewable generation continued its rapid expansion. Solar reached new records, wind capacity accelerated, and energy storage moved from a supporting role to a central component of system stability. For the first time, the conversation is no longer about whether the transition is possible, but about how quickly it can be delivered.

This report captures that moment.

What emerges is a picture of a system gaining momentum, but also revealing its limits. The growth of renewables is no longer constrained primarily by technology or cost. Instead, the challenges have become structural: permitting, grid capacity, coordination between stakeholders, and the ability of institutions to adapt to a faster, more complex energy landscape.

Germany's permitting reforms, the acceleration of utility-scale battery projects, and the growing integration of storage with renewable generation all point to a deeper shift. Energy infrastructure is being redefined, not as isolated assets, but as interconnected systems that must operate with greater flexibility and responsiveness.

At the same time, the scale of what lies ahead remains significant. The gap between current deployment and the levels required to support a fully decarbonised energy system is still substantial. Progress is real, but uneven. Momentum is building, but not yet sufficient.

This is why clarity matters.

European Energy Trends 2025 is not intended as an exhaustive technical report. Instead, it offers a structured view of key developments across wind, solar, and storage, highlighting the dynamics that are shaping the next phase of the transition.

The aim is to make complex developments easier to understand, navigate, and connect.

Because the challenge is no longer only to generate clean energy. It is to build a system that can integrate it effectively, distribute it reliably, and scale it fast enough to meet Europe's ambitions.

The coming years will test whether Europe can move from acceleration to delivery. The foundations are now in place. The question is whether the systems, institutions, and infrastructure around them can keep pace.



## OUR MISSION

**We exist to improve understanding of Europe's energy transition and support more informed debate around its direction.**

**We bring together analysis, communication, and sector intelligence to make complex developments across the energy system clearer, more accessible, and more usable for policymakers, researchers, industry stakeholders, and the wider public.**

**Our mission is to contribute to a better-informed conversation around the choices, trade-offs, and opportunities shaping Europe's energy future.**

# Introduction

Europe's energy transition is entering a phase where scale is no longer the primary challenge. The technologies are proven, deployment is accelerating, and investment continues to grow. The question is no longer whether the transition can happen, but how effectively it can be delivered as a coherent system.

In 2025, that shift becomes increasingly visible.

Wind and solar are now operating at a level where their impact extends beyond generation. They are reshaping electricity markets, influencing price dynamics, and placing new demands on infrastructure. Their growth is no longer an isolated success story, but a catalyst for broader structural change across the energy system.

At the same time, energy storage is moving into a new role. Batteries, in particular, are transitioning from experimental or supportive applications to essential infrastructure. As renewable generation expands, the need to store, shift, and manage energy across time becomes central to system stability. Storage is no longer a complement to the transition. It is part of its foundation.

This report brings these developments together.

Rather than treating wind, solar, and storage as separate sectors, it looks at how they interact and reinforce one another. The expansion of renewable generation increases the need for flexibility. The deployment of storage depends on where and how that generation is built. Grid infrastructure, market design, and permitting frameworks influence all three. What emerges is a system that is increasingly interconnected, where progress in one area is inseparable from constraints in another.

The structure of the report reflects this logic.

Each section focuses on a key dimension of the transition as it stands today: the milestones that signal progress, the acceleration of new technologies, the strategic shifts in how projects are developed, and the structural limits that are beginning to define the pace of change. Together, they offer

a view of a system that is evolving quickly, but not evenly.

Across Europe, the patterns are consistent. Deployment is accelerating, but not always where it is most needed. Project pipelines are expanding faster than the infrastructure required to support them. New business models are emerging, but regulatory and administrative processes remain slow to adapt. The result is a transition that is advancing, but under increasing pressure from its own success.

This is particularly visible in the growing importance of system integration. As renewable capacity increases, the ability to connect, balance, and distribute energy becomes as critical as the ability to generate it. Grid capacity, interconnection, and storage are no longer secondary considerations. They are defining factors in how far and how fast the transition can progress.

The aim of this report is to provide a clear and structured view of these dynamics.

It does not attempt to cover every development or provide an exhaustive dataset. Instead, it focuses on the shifts that best illustrate how Europe's energy system is changing, highlighting both the progress achieved and the constraints that are emerging. By bringing together data, narrative, and structure, the report seeks to make these developments easier to understand and connect.

Because the transition is no longer defined only by ambition or technology.

It is defined by the ability to deliver, integrate, and scale a system that can meet Europe's energy needs in a fundamentally different way.



# The year in numbers

2025 redefined Europe's energy landscape. Renewables reached historic shares of the electricity mix, solar overtook fossil fuels as the leading source, and storage infrastructure scaled rapidly to meet grid demands. These figures capture the core shifts that shaped the year.

# 42%

## INCREASE IN TOTAL SOLAR CAPACITY

SOLAR CAPACITY EXPANDED RAPIDLY IN 2025, CONFIRMING ITS ROLE AS THE LEADING SOURCE OF NEW ELECTRICITY IN THE EU.

# 19<sub>GW</sub>

## NEW WIND INSTALLATIONS

WIND PROJECTS ADDED AROUND 19 GIGAWATTS OF CAPACITY, WITH GROWTH DRIVEN BY BOTH ONSHORE AND OFFSHORE DEPLOYMENTS.

# 3,8

## RISE IN RENEWABLE SHARE

THE RENEWABLE SHARE OF EU ELECTRICITY INCREASED BY 3.8 PERCENTAGE POINTS COMPARED WITH THE SAME QUARTER A YEAR EARLIER.

# 21

## EU COUNTRIES WITH RISING RENEWABLES

IN 21 EU MEMBER STATES, THE SHARE OF RENEWABLE ENERGY IN ELECTRICITY GENERATION INCREASED YEAR-OVER-YEAR IN Q3 2025.

# BUILT ON WIND

Wind installations surged 45% in 2025, driven by offshore expansion and onshore acceleration across member states. The momentum is real, but challenges remain.

# From potential to reality

Wind power in Europe has crossed a threshold where it is no longer measured by what it might achieve, but by what it delivers every day. Across the continent, turbines now generate electricity at a scale that reshapes how countries think about energy security and independence. What was once an alternative has become foundational infrastructure, as essential to Europe's grid as any conventional power plant.

The transformation is visible in landscapes from the North Sea to the Mediterranean. Communities that once debated whether to welcome wind farms now depend on them for local power and economic activity. The technology has matured beyond pilot projects and subsidy-dependent experiments into an industry that competes on cost and reliability. Grid operators who once treated wind as supplementary now integrate it as a primary electricity source.

This shift reflects more than engineering progress. It represents a recalibration of what Europeans consider normal energy infrastructure. The turbines rising across fields, coastlines, and offshore waters are not temporary installations but permanent features of the continent's energy landscape, built to operate for decades and anchor regional economies around manufacturing, maintenance, and innovation.

## Breaking the permitting logjam

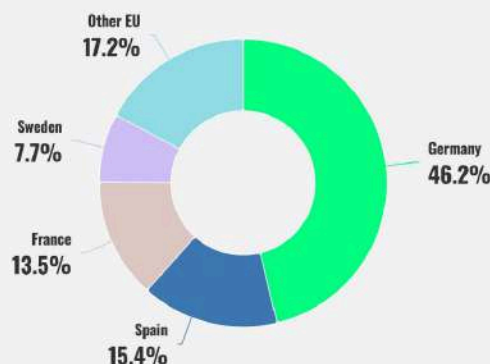
For years, European wind developers faced a paradox: falling costs and rising demand, but projects stalled in bureaucratic limbo. Germany became the first country to systematically dismantle these administrative barriers, demonstrating that policy reform could accelerate deployment faster than any technological breakthrough. The country implemented streamlined permitting rules that cut approval timelines by more than half, transforming what had been a bottleneck into a pathway.

The change was not merely procedural. By designating specific zones for renewable energy and coordinating with grid operators during the planning phase, Germany eliminated the conflicts that had delayed projects for years. Local communities received structured benefit-sharing arrangements, reducing opposition that had previously blocked or slowed developments. The result was a permitting system that treated wind energy as essential infrastructure rather than as a special case requiring exceptional approvals.

Other member states are now studying Germany's approach, recognising that their own climate targets depend on similar reforms. The German model proved that the barriers to wind expansion were largely self-imposed—a matter of political will and administrative design rather than technical or economic limits. The country's success has created pressure for regulatory harmonisation across the EU, with member states adapting the framework to their own contexts.

Share of new onshore wind permits granted in the EU

Source: WindEurope H1 2025 Data Report



## Offshore wind comes of age

The offshore wind sector entered 2025 with a credibility it had lacked just years before. After a period of financial uncertainty and auction failures, major projects secured investment, governments designed better risk-sharing mechanisms, and developers moved from promises to construction. The industry crossed from aspiration to execution, with turbines being installed in waters where projects had once existed only on planning documents.

The shift was driven by lessons learned from earlier missteps. Governments redesigned auction systems to share revenue risk, moving from developer-pays models to structures where both sides benefit from favourable electricity prices. This alignment of incentives brought institutional investors back to the sector, enabling projects to reach financial close and move into construction. The UK, Germany, and the Netherlands led this recalibration, creating templates that other coastal nations are now adopting.

Cross-border collaboration added another dimension to offshore development. Smaller Baltic states that lacked individual capacity to develop major offshore projects joined forces, sharing costs and connecting wind farms directly to multiple national grids. Estonia and Latvia's joint offshore initiatives exemplify this approach, where regional cooperation makes viable what would be prohibitively expensive for individual countries. These partnerships are reshaping how Europe thinks about offshore wind—not as isolated national projects but as shared regional infrastructure.

## Industrial renaissance

Europe's wind expansion is driving an industrial mobilisation not seen in the energy sector for decades. Factories across the continent are expanding to produce turbines, blades, foundations, and cables, creating manufacturing jobs and supply chains that anchor renewable energy development on European soil. This industrial activity represents more than economic opportunity; it reflects a strategic decision to build energy independence through domestic production capacity.

The EU's regulatory framework now prioritises European manufacturing in renewable energy procurement, reversing years of reliance on imported components. This policy shift is rebuilding industrial capabilities in regions that had experienced manufacturing decline, turning former industrial towns into centers of clean energy production. The factories producing wind components employ similar skills and infrastructure as traditional heavy industry, enabling economic transitions that preserve community identity while shifting to new sectors.

## The grid becomes the constraint

As wind turbines multiply across Europe, a new challenge has emerged: the infrastructure to move electricity from where it's generated to where it's needed cannot keep pace. Transmission lines that took decades to plan and build now represent the critical bottleneck to further wind expansion, with projects granted permits but unable to connect to grids already at capacity. The problem is particularly acute in regions with strong wind resources but limited transmission infrastructure.

Cross-border transmission offers a partial solution. When wind generation exceeds local demand, the ability to export power to neighbouring countries prevents curtailment, the forced shutdown of turbines despite favourable wind conditions. Germany benefits from robust interconnections that allow it to send surplus generation to Austria, Switzerland, and neighbouring states, while countries with weaker cross-border links must curtail production more frequently. This disparity is driving investment in new interconnections, treating them as essential to realizing wind's full potential.

Grid operators are adapting to manage wind's variability through advanced forecasting and demand-side flexibility. The challenge is not whether grids can handle wind power, but whether they can be upgraded quickly enough to match the pace of wind farm construction. The answer increasingly involves not just building more transmission lines but rethinking how electricity systems balance supply and demand, integrating storage, demand response, and cross-border coordination into operational practice.

80 %

SHARE OF NEW WIND CAPACITY IN EUROPE AWARDED THROUGH COMPETITIVE AUCTIONS

24 months

AVERAGE PERMITTING AND PROJECT AWARD TIMELINE ACHIEVED IN MEMBER STATES

15 GW

NEW WIND CAPACITY INSTALLED ACROSS EUROPE IN 2025

50 %

SHARE OF NEW WIND CAPACITY COMING FROM OFFSHORE PROJECTS

## The horizon ahead

Europe's wind sector is navigating a paradox: the fundamentals have never been stronger, yet meeting 2030 targets remains uncertain. The technology works, costs have fallen, manufacturing is expanding, and political support exists, but the infrastructure and regulatory systems needed to deploy wind at the required pace are still catching up. The gap between what is technically possible and what current systems can deliver defines the challenge ahead.



The industry has moved beyond asking whether wind can power Europe to confronting how quickly the necessary grid, permitting, and industrial infrastructure can scale. Germany's success demonstrates that targeted policy reform can triple deployment rates, while offshore wind's financial recovery shows that well-designed markets can attract capital. These examples provide templates, but each member state must adapt them to local conditions, and coordination across borders remains inconsistent.

What emerges from 2025 is a sector that has proven its viability and now faces the harder work of integration. Wind is no longer an experiment but a cornerstone of Europe's energy system, one that requires everything else in that system to adapt to its presence. The coming years will determine whether Europe's infrastructure, regulations, and political coordination can match the pace set by falling costs and rising climate ambition. The technology is ready; the question is whether the systems that deploy it can keep up.

# SOLAR AT SCALE

In 2025, wind power in Europe is no longer defined by potential, but by delivery. What was once framed as an emerging solution has become a core component of the European electricity system.

# When solar took the lead

In 2025, solar power crossed a symbolic line in Europe, moving from summer headline to structural pillar of the electricity system. For the first time, solar generation outpaced every other individual source during peak months, turning clear skies into a predictable driver of continental power flows. What had long been framed as a marginal, weather-dependent technology became a central organiser of daytime demand and pricing.

This shift was visible in the daily rhythm of the grid. Midday hours that once relied on gas or coal plants now leaned primarily on solar output, with conventional generation pushed to the shoulders of the day. Markets adjusted to a new normal where solar shaped price curves, and system operators began planning around “solar noon” as a defining feature of European power systems. The conversation moved from whether solar could scale to how the rest of the system would adapt.

For households and businesses, the change felt tangible. Rooftop systems that once seemed like individual statements of intent now formed part of a continental infrastructure story. As more roofs, car parks, and industrial estates added panels, local generation blended into a broader narrative: solar was no longer an early adopter choice, but a mainstream asset underpinning Europe’s energy security and climate goals.

## From rooftops to utility scale

Europe’s solar build-out in 2025 was defined by a dual movement of small and large systems working together. Rooftop installations gave households, municipalities, and SMEs direct access to clean power, while utility-scale parks supplied bulk generation to the grid. Together, they created a layered architecture where local autonomy and system-scale efficiency reinforced each other.

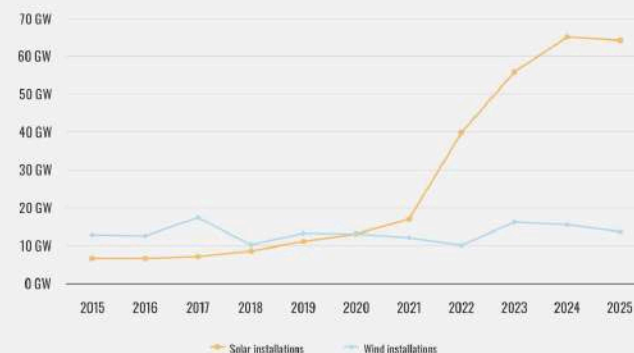
Residential and commercial rooftops brought solar into everyday life. Apartment blocks, schools, logistics hubs, and hospitals integrated panels into their renovation cycles, treating solar less as an add-on and more as a standard component of

modernisation. Power purchase agreements allowed tenants and public institutions to benefit without owning the systems outright, spreading the gains of cheap daytime electricity to those without capital or roof access.

At the same time, large solar parks anchored regional transitions. Projects measured in hundreds of megawatts turned former industrial land, low-yield farmland, and degraded sites into energy-producing landscapes. These plants established solar as a serious counterpart to wind in long-term planning, giving grid operators predictable daytime bulk generation that could be forecast with increasing precision. The scale of these developments signalled that solar had become integral to Europe’s infrastructure, not a peripheral add-on.

EU annual wind and solar installations 2015-2025

Source: SolarPower Europe Market Outlook 2025



## Policy as a force multiplier

The acceleration of solar in 2025 was the outcome of deliberate policy choices, not luck. National support schemes, EU-wide targets, and emergency energy measures introduced after the recent price crisis combined to create a clearer investment horizon. Where policy had once oscillated between incentives and cutbacks, the direction of travel became more consistent.

Simplified permitting and standardised frameworks for small systems played a quiet but decisive role. For many member states, removing paperwork and grid-connection hurdles for rooftop projects unlocked more capacity than any new subsidy. Households could install systems within weeks rather than months, and installers could operate with predictable rules across multiple regions. This administrative clarity lowered soft costs and made solar more accessible beyond early adopters.

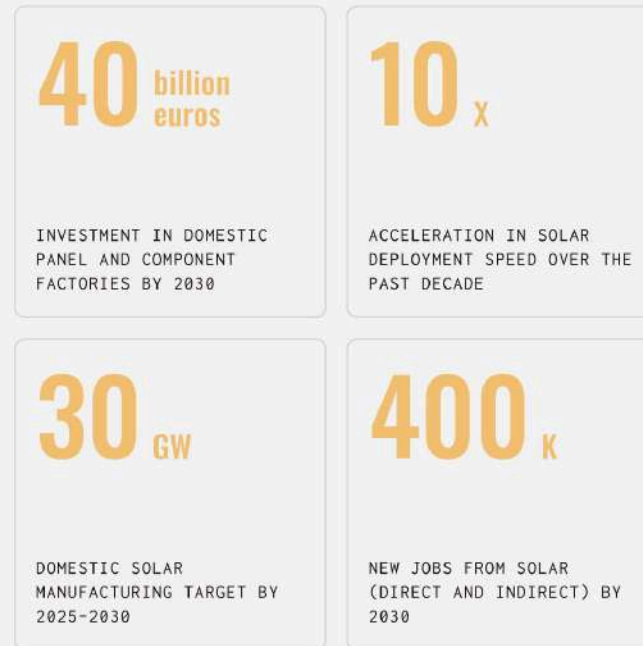
On the utility side, auctions and long-term contracts stabilised revenue for larger projects. Well-designed tenders shifted focus from extracting the lowest possible price to securing timely delivery, system value, and resilience. By rewarding projects that integrated storage, provided grid services, or co-located with other technologies, policymakers encouraged solar developers to think beyond pure generation. The result was a pipeline less vulnerable to single-point policy shocks and better aligned with system needs.

## Industry, jobs, and the solar supply chain

Behind the growth in panels and projects, a quieter industrial transformation unfolded in Europe. Solar deployment in 2025 drew on a global supply chain, but it also revived manufacturing, logistics, and service ecosystems within the EU. New factories, assembly lines, and component suppliers signalled that solar was not just importing technology, but reshaping local economies.

Manufacturing investments focused on strategic parts of the value chain. Where full cell and module production remained globally competitive, Europe specialised in high-value components, inverters, mounting systems, and integration services. These activities leveraged existing industrial skills, from precision engineering to electrical equipment manufacturing, and offered pathways for regions seeking to transition from legacy sectors.

The service economy around solar grew just as quickly. Installers, electricians, planners, software providers, and O&M specialists formed a labour market that combined technical expertise with local presence. Training initiatives and reskilling programmes were designed to move workers from carbon-intensive industries into solar-related roles, maintaining employment while shifting the energy base. In many regions, the jobs story became as compelling as the technology story itself.



## Integrating solar into the system

As solar scaled, the central question shifted from volume to integration. Midday peaks in production became routine, and system operators had to synchronise solar with storage, flexible demand, and cross-border flows. The challenge was not the physics of solar generation, but the speed at which grid planning and market design could adapt.

Storage emerged as a natural counterpart to solar's daily rhythm. Batteries co-located with solar parks smoothed output, shifted energy into evening hours, and reduced congestion on local lines. At a smaller scale, residential batteries and smart appliances allowed households to consume more of their own production, easing pressure on distribution networks. These developments turned solar from a passive generator into an active participant in system balancing.

Cross-border interconnection amplified these effects. When one region's midday solar surplus exceeded local demand, interconnectors carried energy to neighbouring countries still ramping up consumption. Markets that once treated solar as primarily national began valuing it as a shared resource, where diversity in weather, demand patterns, and complementary generation benefited the whole.

## Beyond the 2025 milestone

By the end of 2025, solar's role was defined less by achievements than by expectations. The technology had proven its capacity to scale rapidly, cut emissions, and soften fossil fuel price shocks. The debate turned to how this momentum could be sustained in the face of grid constraints, market volatility, and evolving industrial policy.

The road ahead will not be linear. Some markets will experience pauses, consolidation, or redesign of support schemes, even as the long-term direction remains upward. The task for policymakers and industry is to treat slowdowns not as setbacks but as opportunities to strengthen integration, upgrade infrastructure, and improve the resilience of the solar value chain.

Still, the direction is clear. Solar at scale is no longer a thought experiment; it is the lived reality of Europe's electricity system, shaping investment, innovation, and everyday life. What happens next will depend less on what panels can do, and more on how fast institutions, grids, and markets can evolve to match them.

# THE STORAGE EQUATION

Battery storage is no longer supplementary. In 2025, Europe crossed 100 GW of installed capacity, with utility-scale batteries leading deployment. Storage has become the missing piece that unlocks wind and solar's potential.

# The 100 GW milestone

Europe reached 100 GW of installed energy storage capacity in November 2025, a milestone equivalent to the peak electricity demand of Germany and the Netherlands combined. This aggregate encompasses hydropower, pumped storage, thermal systems, and batteries—yet battery storage emerged as the fastest-growing segment. The milestone was less a symbolic endpoint and more a threshold moment: evidence that storage had transitioned from experimental to essential.

The distribution of this capacity tells a story about continental imbalances. Hydropower and pumped storage dominated Alpine and Scandinavian regions, accounting for roughly 75% of total capacity, whilst battery storage—the most geographically flexible technology—remained comparatively nascent at around 11 GW. Deployment accelerated sharply in 2024 and 2025, signalling a fundamental shift away from pilot projects toward system-critical infrastructure.

By the end of 2025, Europe's battery fleet reached approximately 61 GWh of installed energy storage, concentrated in Germany, Italy and Spain. Despite this progress, projections indicate Europe will require up to 780 GWh of battery storage by 2030 to support a renewables-dominant electricity system. The 100 GW milestone therefore marked both achievement and exposure of the scale still required.

## The battery acceleration

Battery installations in 2025 grew by 36% year-over-year, reaching 29.7 GWh. This rebound followed a comparatively subdued 15% growth rate in 2024 and was driven primarily by utility-scale systems. For the first time, batteries shifted from a supporting role to the primary driver of storage market expansion.

Rows of black lithium-ion battery modules with orange and black cables connected, mounted in industrial metal racks.

Germany remained Europe's central battery market, with over 3.5 GW of utility-scale capacity deployed and expectations to double by 2034. Italy emerged as a major growth market, deploying 3.4 GWh in 2024—an increase of more than fifteen times year-on-year, supported by merchant revenues, hybrid projects, and a 58 GWh national target by 2030. Across Europe, batteries increasingly became standard components of wind and solar developments.

Commercial and industrial storage continued to lag behind expectations, despite strong growth forecasts. Residential battery deployment, which had dominated the market during the 2022 energy crisis, contracted in 2025 as emergency subsidy schemes were phased out. The market rebalanced toward grid-scale assets capable of delivering flexibility at system level.

## Co-location as strategy

Co-locating batteries with renewable generation became the dominant deployment model in 2025. By year-end, 61% of renewable developers planned to integrate storage with generation assets by 2028. This approach reduced curtailment and eased grid congestion by managing variability at the point of production.

Hybrid solar-plus-battery projects demonstrated strong commercial performance. Revenue stacking—combining energy arbitrage, grid services, and capacity payments—proved viable across multiple markets, particularly in the UK and Italy. Nordic countries adapted the model to frequency and balancing services, confirming its flexibility across regulatory contexts.

Regulatory frameworks reinforced this trend. Multiple Central and Southeast European countries introduced dedicated auctions for co-located projects, while updated EU permitting guidance explicitly encouraged storage integration. What began as a commercial optimisation rapidly became a structural requirement.



36 %

YEAR-ON-YEAR GROWTH IN BATTERY INSTALLATIONS ACROSS EUROPE

29,7 GWh

NEW BATTERY STORAGE CAPACITY INSTALLED IN EUROPE IN 2025

15 x

INCREASE IN ANNUAL BATTERY DEPLOYMENT IN ITALY COMPARED TO 2024

61 %

OF RENEWABLE DEVELOPERS PLAN TO CO-LOCATE STORAGE WITH GENERATION BY 2028

## The residential retreat

Home battery installations declined in 2025 as crisis-driven incentives were withdrawn. Residential systems fell to 33% of new market additions, down from more than half during peak crisis years. The contraction was visible across major markets, including Germany and Spain.

Attachment rates, however, remained high. In Italy and Germany, more than four in five new rooftop solar systems were paired with storage, reflecting integration into renovation cycles rather than policy-driven uptake. Micro-storage paired with balcony solar systems emerged as a small but fast-growing segment.

Electric vehicle charging station mounted on a wooden fence with green ivy and brick house in the background under clear blue sky.

Policy priorities shifted accordingly. Governments increasingly redirected support toward business and utility-scale storage, as illustrated by SME-focused programmes such as Lithuania's €18 million incentive scheme. Residential batteries transitioned from emergency adoption to long-term, economically driven deployment.

## The grid bottleneck

Germany's battery storage pipeline exceeded 500 GW of grid connection requests by late 2025. This volume (over fifty times annual electricity demand) exposed grid infrastructure as the binding constraint, not capital or policy support.

Simplified permitting and standardised frameworks for small systems played a quiet but decisive role. For many member states, removing paperwork and grid-connection hurdles for rooftop projects unlocked more capacity than any new subsidy. Households could install systems within weeks rather than months, and installers could operate with predictable rules across multiple regions. This administrative clarity lowered soft costs and made solar more accessible beyond early adopters.

On the utility side, auctions and long-term contracts stabilised revenue for larger projects. Well-designed tenders shifted focus from extracting the lowest possible price to securing timely delivery, system value, and resilience. By rewarding projects that integrated storage, provided grid services, or co-located

with other technologies, policymakers encouraged solar developers to think beyond pure generation. The result was a pipeline less vulnerable to single-point policy shocks and better aligned with system needs.

The issue extended across Europe. Multi-year grid connection queues increasingly undermined project viability, particularly for large-scale storage assets. Developers faced long delays between permitting and operation, increasing exposure to cost and market risk.

Mitigation strategies emerged slowly. Some countries accelerated deployment through hybrid project structures and targeted grid services, but overall grid reinforcement lagged well behind deployment needs. Infrastructure readiness remained the principal brake on storage expansion.

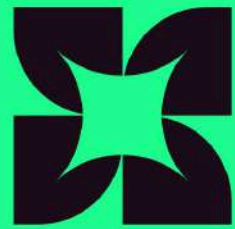
## The path to 215 GW

By 2030, Europe's energy storage capacity is projected to exceed 215 GW. Battery storage alone is expected to surpass 160 GW, representing more than 115% growth in five years. Achieving this trajectory requires sustained annual deployment far above historical norms.

Deployment projections remain cautious. Even optimistic scenarios place Europe at roughly 400 GWh of battery storage by 2029, well below the 780 GWh required for full system balancing. The gap between ambition and system needs has narrowed but remains significant.

Market confidence has strengthened. Utility-scale batteries now attract institutional investment and industrial-scale development, yet success depends on parallel progress in grid infrastructure, manufacturing capacity, and regulatory alignment.





# EUROPEAN ENERGY TRENDS