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EU Market Outlook for Solar Power

2025 Mid-Year Analysis

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Foreword

Welcome to our EU Market Outlook 2025 – Mid-Year Analysis,

This publication marks a new addition to SolarPower Europe's solar and battery storage market outlook series. Starting this year, we will release this mid-year edition annually to provide a review of solar developments during the first half of the year, along with an updated forecast for the second half. As solar has become a major pillar of the EU energy transition – and will continue to grow its share, it's important to continuously feel the pulse of the EU solar sector. Unlike our December edition, this report does not include policy recommendations or long-term projections – it is a brief market snapshot and outlook for the rest of the year. Our comprehensive outlook with five-year forecasts and policy insights will continue to be published at year-end.

The report highlights a major milestone: in June 2025, solar became the EU's largest source of electricity for the first time, supplying 22% of the power mix. While the EU remains on track to meet its 2025 solar target of 320 GW_{AC} (400 GW_{DC}), this achievement contrasts with mounting concerns about reaching the 2030 goal of 600 GW_{AC} (750 GW_{DC}), as the market shows signs of slowing down.

Following years of rapid expansion, the solar market stagnated in 2024. As it looks now, the market will most likely contract slightly in 2025, primarily due to a sharp decline in residential rooftop installations – driven by lower electricity prices and weakening support schemes. Utility-scale solar continues to perform better, supported by auctions and corporate PPAs, though the latter driver is also faltering amid buyer hesitation in recent months.

The most pertinent solutions to continue Europe's solar success story and deliver the continent's 2030 renewables targets are well-established – rapidly scale-up battery storage and overall system flexibility.

SolarPower Europe, therefore, has just launched its Battery Storage Europe Platform to bring together industry leaders in this field and advance the business case and regulatory frameworks for battery storage across the EU.

Enjoy regarding our new report,

Walburga Hemetsberger
Chief Executive Officer

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Deputy Chief Executive Officer

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Executive Advisor and Director of Market Intelligence

EU Market Outlook for Solar Power

2025, Mid-Year Analysis

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Methodology:
SolarPower Europe's forecast consists of a Low, Medium and High Scenarios. The Medium scenario anticipates the most likely development given the current state of play of the market. The Low Scenario forecast is based on the assumption that policymakers halt solar support and other issues arise, including interest rate hikes and severe financial crisis situations. Conversely, the High Scenario forecasts the best optimal case in which policy support, financial conditions and other factors are enhanced.

Segmentation is based on the following system size: Residential (<10 kW); Commercial (<250 kW); Industrial (<1000 kW); Utility-scale (>1000 kW, ground-mounted). SolarPower Europe's methodology includes only grid-connected systems. Installed capacity is always expressed in DC, unless otherwise stated.

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

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Contents

Solar is delivering today.

In June 2025, solar became the EU's largest electricity source for the first time, delivering 22.1% of the total power mix. As it stands now, the EU will also meet the RePower EU solar target of installing a total of 320 GW_{AC} (equal to 400 GW_{DC}) by the end of 2025. What seemed hard to imagine in the past has become reality at a record pace, proving solar is the key player to decarbonise EU's electricity generation. This monumental achievement, however, comes at a moment of solar market slowdown.

Europe is not on track to meet its 2030 solar target as the market faces its first downturn in many years.

The EU aims to install 600 GW_{AC} (equal to 750 GW_{DC}) of solar by the end of the decade, yet under current deployment rates, only 723 GW_{DC}[1] would be reached. This warning – **first raised by SolarPower Europe with a yellow card to policymakers in 2024** - is now turning into a tangible gap. After exceptional expansion in 2022 (+47%) and 2023 (+51%), growth flattened at 3.3% in 2024. For 2025, the market is expected to contract for the first time in nearly a decade, with a projected -1.4% growth under the Medium Scenario.

The current downturn is driven primarily by the rooftop segment, particularly residential solar systems. In many major Member States, primarily households and SMEs are postponing investment in solar installations following lowering electricity price trends and weakened support frameworks. In many cases, rooftop solar incentives have been withdrawn or scaled back without effective alternatives, resulting in a short rush and sudden market decline. Out of all rooftop segments, the residential solar market contracts the most. It accounted for around 30% of installations between 2020 and 2023 and is now forecast to contribute just 15% of new capacities in 2025.

Utility-scale solar, by contrast, is expected to continue growing this year. In 2025, the segment will likely contribute to around half of all new capacity additions. Part of its resilience is based on de-risking instruments that enable affordable financing and faster deployment. Corporate Power Purchase Agreements (cPPAs) have offered long-term certainty at competitive cost for developers and off-takers, which is the reason for the boom of PPAs in the recent years. But this promising and important solar segment also faces challenges to adjust to today's market. In recent months, buyers for PPA contracts are more hesitant to commit in the downward electricity price environment. Newly signed solar PPA contracts dopped by 41% in Q2 from Q1. Improving the framework that supports these contracts will be essential to unlock their full potential. Auctions and tenders are now even more important for ensuring utility-scale solar deployment continues to play a key role. Today, more competition is driving the price of auctioned solar capacity to new lows.

Looking ahead, for solar to continue meeting EU targets and providing low-cost energy to European citizens and companies, the EU and its Member States must improve the value of solar electricity within the system. Energy system flexibility and storage are key tools to achieve this. They enable solar to be used when demand is highest, ensure smooth variable generation, and improve project economics across the board. While we need massive investment in the grid in the long run, more flexibility, and in particular a stark increase in battery storage, is the key in the short term for the EU to meet its solar and renewables ambitions for 2030.

[1] All capacity figures within this document are expressed in DC, unless stated otherwise.

Chapter 1

Understanding the role of solar in Europe today

With solar at the heart of Europe's energy system, its continued success now hinges on more than just deployment volume. The years of exponential growth have revealed that systemic adjustments are needed to sustain momentum – from reformed auction designs and evolving cPPA markets to urgently needed investments in storage and flexibility. If Europe wants to deliver on its 2030 targets and beyond, solar can no longer be viewed in isolation. It must be supported by a resilient and flexible energy system that allows solar to capture its full value, even as market conditions shift.

Solar: the backbone of Europe's energy transition

Figure 1

For the first time, solar generates more than 20% of all EU power

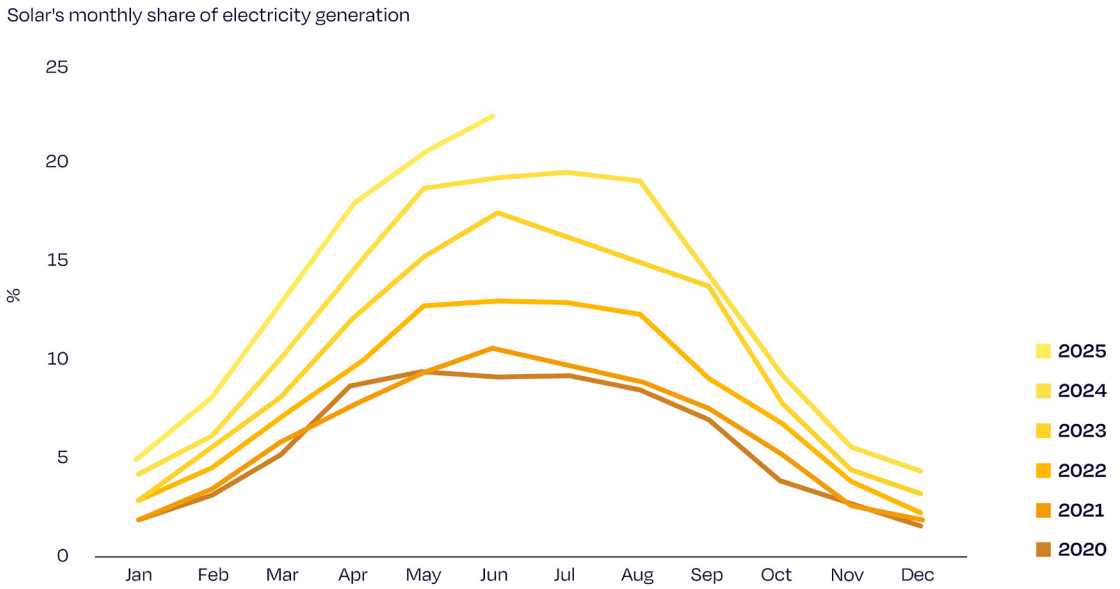
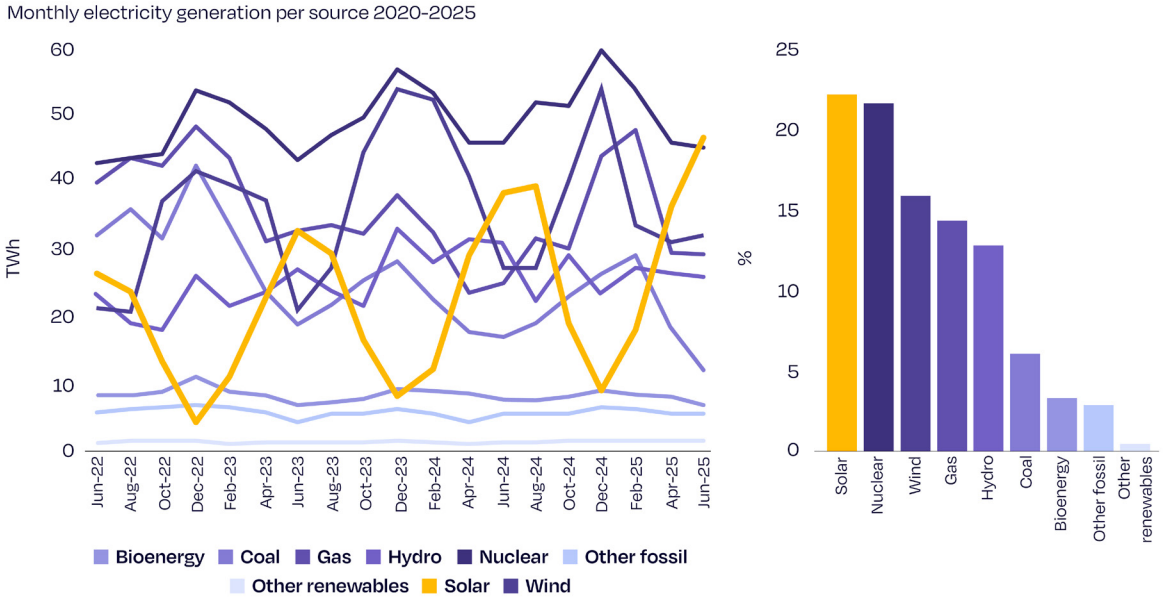


Figure 2

Solar takes over as the EU's largest electricity generator



Data based on ENTSO-E, Eurostat, Energie-Control (E-Control), Energy-Charts, Agora Energiewende, Sustainable Energy Authority of Ireland (SEAI), Terna, Augstsprieguma Tīkls AS (AST), Energie Opwek, NetAnders, Statistics Netherlands (CBS), Instrat, Spanish System Operator InformationSystem (eSIOS).

Solar PV has cemented its place as Europe's main technology to decarbonise energy production. In June 2025, solar was the biggest electricity source in the EU, generating 22.1% – its highest monthly share to date (Fig. 1). The most notable contributor to this was the Netherlands. The country with the EU's largest Watt/capita in solar installations generated 40.5% of its electricity with solar PV. Across the EU, solar contributed over 45 TWh in June 2025 alone, a 22% increase from the 37 TWh

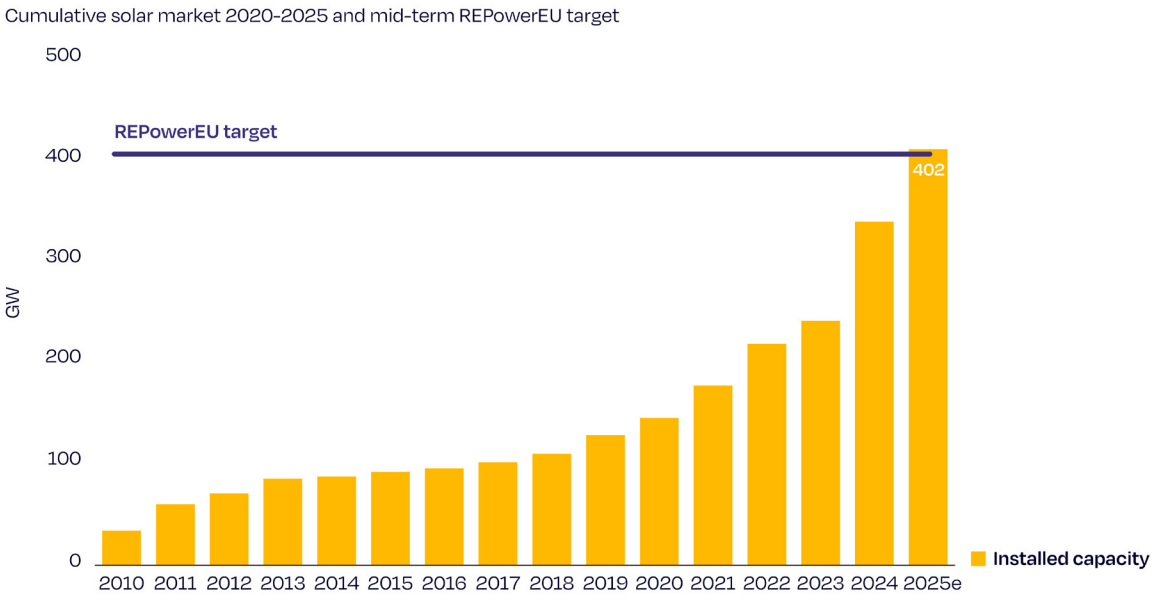
provided one year earlier (Fig. 2). In the first half of 2025, solar contributed nearly 180 TWh, compared to 147 TWh generated in the first half of 2024.

As such, solar is replacing fossil fuels at record speed. In June 2022, in the wake of the energy price crisis, coal power plants accounted for 15.8% of electricity generation while solar supplied 12.8%. In June 2025, 3 years later, coal holds 6.1% share while solar captures 22.1%. Even during the winter months, when sunlight is limited and electricity demand is typically higher, solar consistently contributes over 5% of the power mix (10% in sunnier Member States).

Yet behind these impressive milestones, clouds are gathering. The yellow card issued to policymakers in 2024 becomes more pressing, as the EU solar fleet is expected to reach the 2025 REPowerEU target by only a very small margin (see Fig. 3) and the outlook to 2030 is looking more challenging.

Figure 3

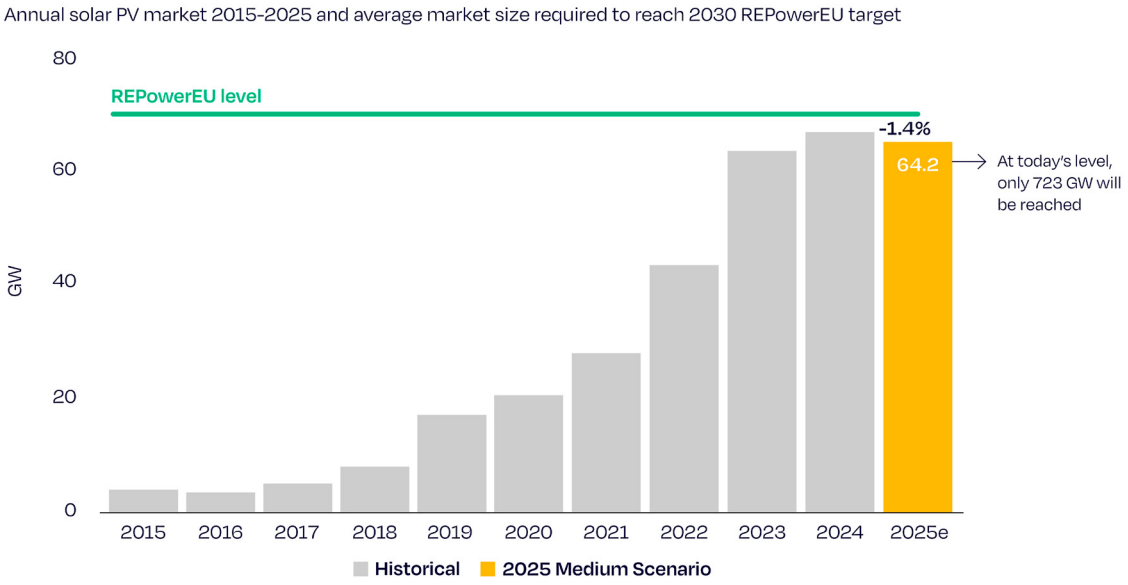
Solar is expected to meet the 2025 mid-term REPowerEU target



After years of strong exponential growth, the market clocked single digit growth in 2024 and is now expected to slightly contract to -1.4% in 2025 under the Medium Scenario – making it the first year of decline in nearly a decade. In Figure 4, the different market Scenario's for 2025 are presented together with the needed average market size through 2030 to meet the 750 GW REPowerEU target. At the current deployment level, only 723 GW would be reached by 2030.

Figure 4

69.6 GW needed annually to reach 750 GW 2030 REPowerEU target



Forecasts for the second half of 2025 suggest a narrow band of possible outcomes. **In the High Scenario, the market could still see a 1.1% growth**, driven by a rush linked to country-specific developments. On the utility-scale side, this could be driven by a stronger end-of-year push for German, Spanish and Hungarian large-scale installations. On the rooftop side, France's announced feed-in tariff phaseout might cause a temporary surge in larger rooftop installations before the expected steep decrease. There's also a potential for German, Dutch and Belgian rooftop markets to slightly recover in the second half of 2025. Much like in Spain and Italy, an acceleration in C&I installations could be the basis of this potential upside.

However, in the **Low Scenario, growth may fall to -2.3%**, driven by a continued decline in the residential and small commercial rooftop segment, and the deferral of utility-scale projects amid regulatory uncertainty and speculation. Though some of this uncertainty is now resolved, several major markets experienced unclear or shifting frameworks in early 2025. For example, France briefly floated a moratorium on utility-scale wind and solar, while regions in Italy imposed strict interpretations of acceleration zones, raising questions on land availability.

Regardless of the scenario considered, current forecasts indicate a significant gap to meeting the bloc's climate and energy ambitions. To stay on track for the EU's 750 GW_{DC} target (600 GW_{AC}) by 2030, the EU market size between 2026 and 2030 must exceed the 2024 peak by about 7% on average – a pace that will require better system-wide coordination and more stable policy frameworks to enable investor confidence.

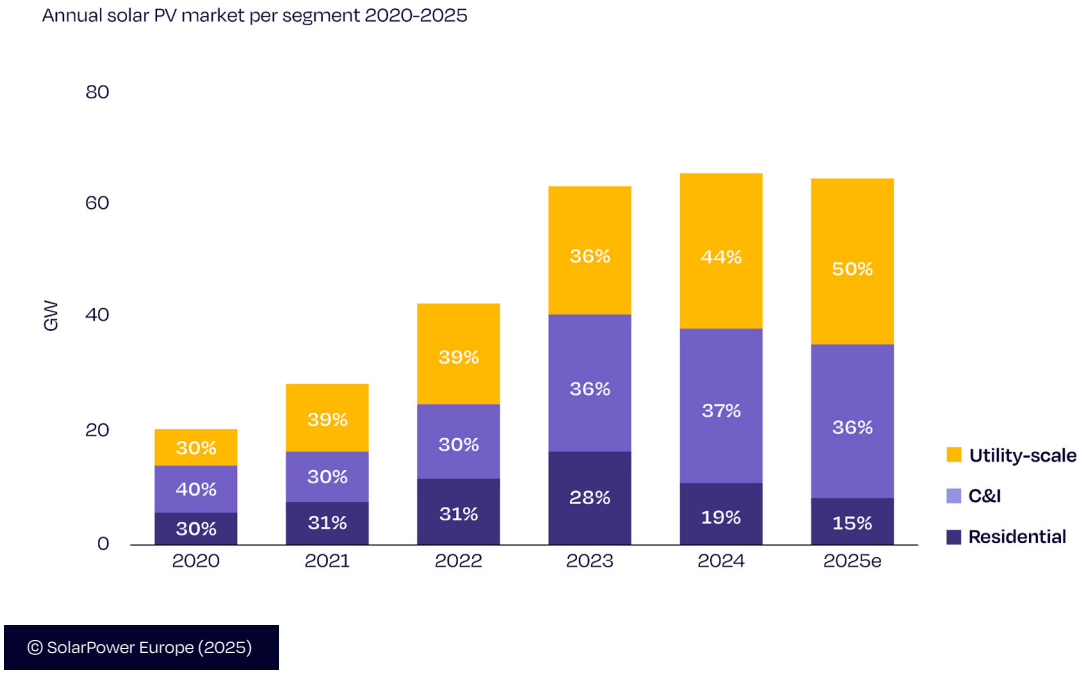
Although there are indications of utility-scale slowdown linked to regulatory uncertainties in major EU markets, the deceleration expected in 2025 is mostly tied to the rooftop market. The main causes can be traced back to regulatory upheaval including the sudden halt of incentive schemes in leading markets and a decrease in the perception of urgency to invest in solar because of lower retail electricity prices.

As a reaction to this, rooftop companies within these markets are innovating. To attract new client segments, companies tend to make solar more accessible by lowering the initial investment barrier and capturing more value by steering consumption and production. For example, through third party financing models and by offering solar as part of a full solution package with storage and energy management systems to control the energy bill through electrification. However, regulation often stands in the way of capturing more value from rooftop systems. Among other things, this includes hurdles to energy sharing and energy communities, and **barriers for rooftop installations to perform grid services.**

As these trends develop, the 2025 rooftop market is expected to show an 11% decline to 32.4 GW, down from 36.3 GW in 2024, which would constitute about half of the total added solar capacity in 2025 (Fig. 5).

Figure 5

Growing ground-mounted solar to cover half of installed solar capacity in 2025

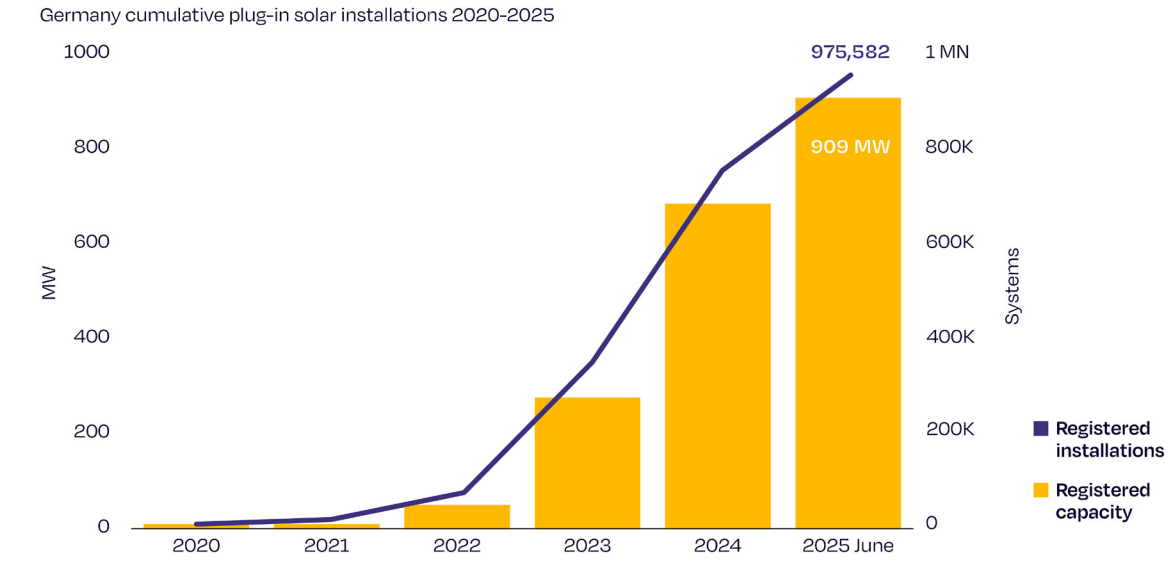


The decline of the **residential rooftop** market is the primary reason behind the 2025 market slowdown. While this segment contributed around 30% of installations between 2020 and 2023, it is forecasted to account for just 15% in 2025 with 9.3 GW. SolarPower Europe defines residential scale as installations below 10 kW, though the slowdown also extends to small commercial systems. The root cause lies in negative developments in strong rooftop markets: Italy, the Netherlands, Austria, Belgium, Czechia, and Hungary. For most of these markets, the discontinuation of incentive schemes without adequate replacements led to a residential rooftop market collapse of over 60% compared to 2023.

Similarly, Poland, Spain, and Germany experienced a decline of over 40%. In absolute terms, the market contractions in the Netherlands and Germany have had the greatest impact on the downward turn of this segment.

Figure 6

Plug-in solar in Germany registers 34% growth in first half year, reaching nearly 1 million installations in total



Figures as of June 11th based on an analysis by the Bundesverband Solarwirtschaft (BSW-Solar) of data from the Federal Network Agency (BNetzA). Not accounting for outstanding late registrations and underreporting.

On the other hand, one residential rooftop segment is not only resisting the downward trend, but it is even strongly growing: plug-in solar – also commonly called balcony solar. In Germany – the cradle and main EU market for plug-in solar – over 190,000 systems were registered with the regulator in the first 6 months of 2025, growing the capacity of plug-in solar by 32%. The market boom has brought this solar application to nearly 1 million installations in this country alone, though the predicted volume of unregistered installations makes this number much higher.

The **commercial & industrial (C&I)** segment is less reactive to the withdrawal of incentives and naturally focuses more on the project economics. Increasingly, businesses are recognising solar PV value in hedging against energy price volatility and reducing operating costs. Compared to 2023, France, Germany, and Greece delivered the largest absolute growth in C&I installations. However, their contributions are expected to decline slightly in 2025. Instead, Hungary and Spain are forecasted to see a noticeable uptick in this segment. That said, the broader slowdown in the Dutch rooftop market is also visible in commercial installations, which are projected to shrink by over 20% in 2025 – falling to less than half their 2023 level.

Meanwhile, **utility-scale solar** is set to take on a larger role, projected to contribute 50% of all new capacity in 2025. Though challenges remain, regulatory progress has enabled the continued build-out of large-scale projects. Supported by strong fundamentals until recently and an unprecedented influx of capital, the market has expanded significantly in Germany and Spain, where annual ground-mounted capacity is comparable in scale. Together, these two countries are expected to account for over 45% of the EU's utility-scale solar additions in 2025. When including Italy, this share rises to over 50%.

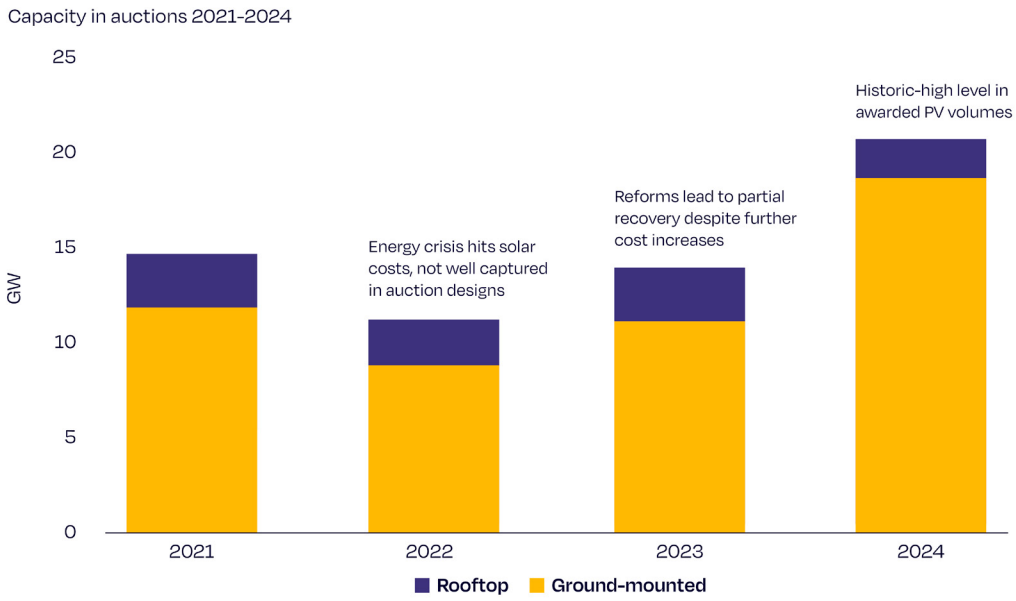
A major driver for utility-scale in these economies is access to affordable public and private capital. Today, Europeans can reap the fruits of projects developed in prior years thanks to de-risking revenue flows such as public funding schemes and Power Purchase Agreements (PPAs). In the following chapter we dive into the increasing popularity of these routes-to-market.

The market muscles behind solar: Auctions and Power Purchase Agreements (PPAs)

Solar public funding is largely allocated through auctions, which continue to gain popularity as a route to market for solar developers (auctions, tenders, CfDs are grouped under the term auctions within this document). Figure 7 shows the awarded solar volumes through such schemes.

Figure 7

Record volumes in 2024 show importance of auctions for utility-scale solar



While solar auctions have been a major tool to advance the utility-scale solar market for many years, demand dropped during the energy crisis, due to sub-optimal auction design. In a period of high energy prices, auction ceiling prices were often too low and unresponsive to inflation, making bids unattractive. Developers responded by pulling back, rather turning to the merchant market, even despite reforms in major markets like Germany. As a result, the awarded solar PV capacity dropped 24% from 2021 to 2022. However, in 2023 and especially in 2024, market conditions combined with auction reforms restored momentum. As ceiling prices were raised, competition increased, while uncertainty in the merchant/PPA market started to grow.

Many developers began to look more into auctions, culminating in a record-high awarded capacity in 2024 that surpassed 20 GW. Ground-mounted systems have been the main beneficiary, comprising of around 90% of auctioned volumes last year, up from an average of 80% in previous years. One contributor to the recovery was the inclusion of hybrid and co-located storage projects – such as in Bulgaria and Germany.

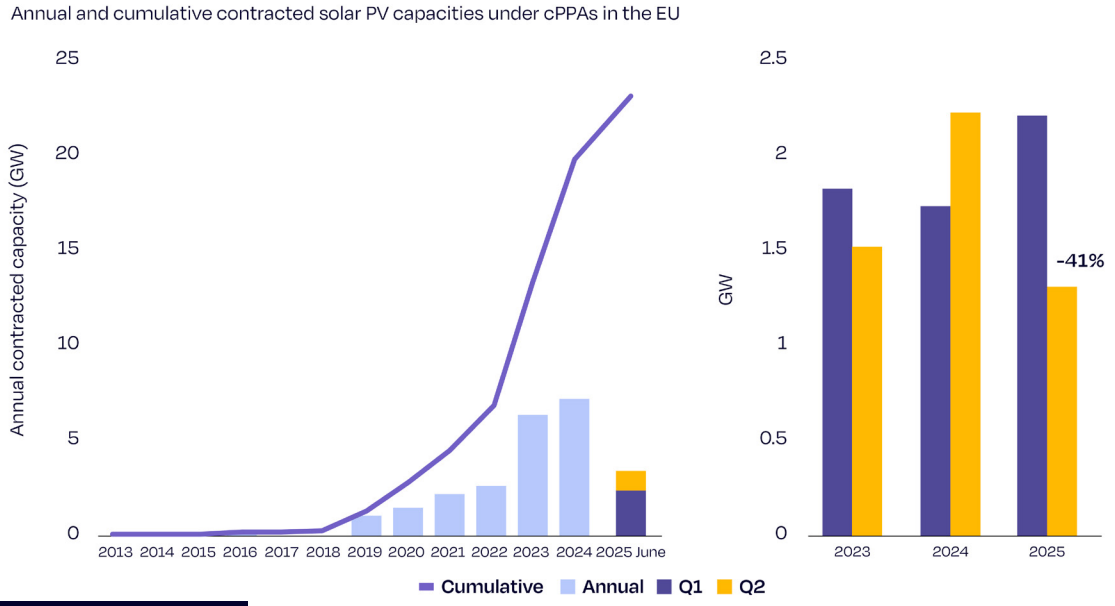
Germany has led the public funding charge, followed by strong contributions from the Netherlands, France, and Italy. Other solar markets like Poland, Bulgaria, and Ireland have added sizeable volumes as well. Looking ahead, scheduled auctions in 2025 across these key countries point to even higher capacity being awarded. Today's growing attractiveness of auctions is underscored by Germany's recent innovation tenders. In the most recent round, 158 bids were submitted totalling over 2 GW, mostly for hybrid solar and storage projects. Prices fell as low as 0.05 EUR/kWh, with

486 MW awarded to 29 projects. Less than 1 year ago in October 2024, a similar tender – which was only slightly overbid – resulted in 587 MW in awarded capacity over 50 projects at an average price of over 0.07 EUR/kWh, proving that the competitiveness and attractiveness of these auctions are increasing rapidly.

Alongside auctions, over the last 5 years, corporate Power Purchase Agreements (cPPAs) have emerged as a vital route to market for new solar capacity in Europe. By locking in long-term electricity prices directly with corporate buyers, cPPAs offer developers revenue certainty without relying on volatile wholesale prices. Figure 8 shows the development of this market for solar over the years, clearly highlighting how demand skyrocketed during the energy crisis.

Figure 8

Corporate solar PPAs surpass 20 GW milestone but suffer a 41% slowdown in Q2 2025



Solar continues to dominate the European cPPA landscape. Since 2019, annual contracted volumes have grown nearly every year, with 2024 marking a new record of 7 GW signed. Cumulative contracted capacity now exceeds 20 GW, a milestone that reinforces the role of private demand in driving the clean energy transition; even when taking into perspective that this volume is less than what was awarded through auctions in a single year in 2024.

The PPA market has also become more sophisticated. Multi-technology deals are gaining traction, with contracts more frequently featuring clauses to address increasing negative price events. Aggregated portfolios are common, and as hybrid projects grow, cPPAs are expected to evolve further to incorporate storage components. Yet not all innovations have taken hold, with multi-technology PPAs that include battery energy storage systems (BESS) still having limited adoption. Storage operators today are searching for workable revenue structures that combine merchant, grid services, and cPPA-linked income.

Heading into 2025, the momentum remained strong in Q1 with over 2.2 GW contracted. However, during Q2 the market showed signs of slowdown (Fig. 8), with solar developers reporting very low interest in PPAs from corporates. Persistently low – and at times negative – wholesale electricity prices, have reduced buyer urgency, while sellers, constrained by low but rigid LCOEs, were less willing to sign contracts at low fixed prices. As such, the contracted capacity took a dive to 1.3 GW – a 41% decrease. The mismatch is expected to weigh on new signings until market conditions rebalance.

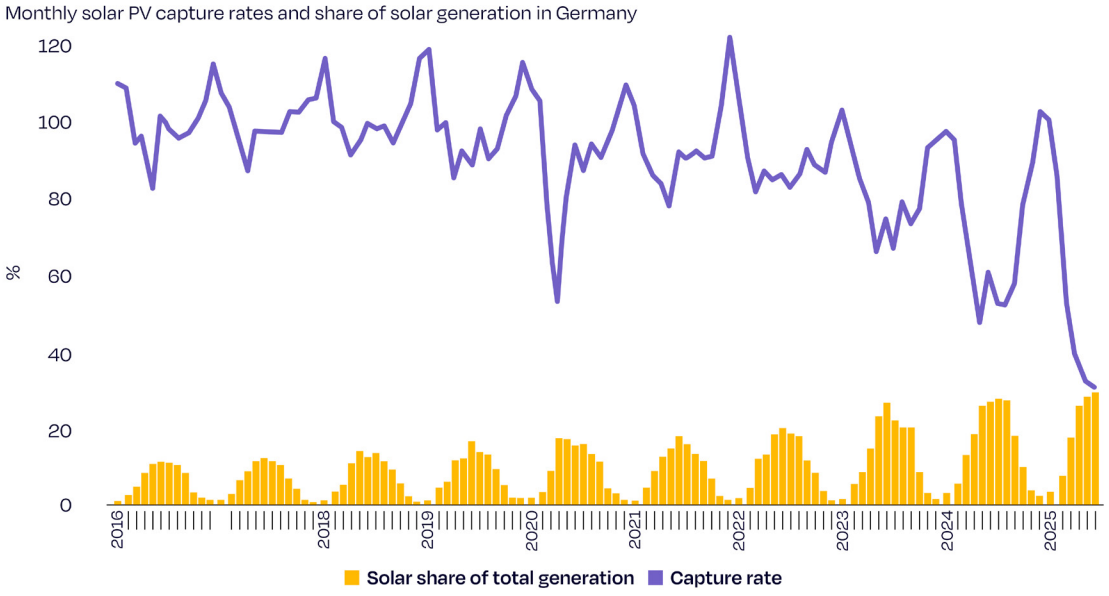
Storage and flexibility are intertwined with solar PV deployment

The reason for the rising role of long-term financial contracts lies in the uncertainty around the speed of buildout in storage and flexibility. Both are needed to better absorb solar energy and to increase its value within an energy system.

Increasingly, as installations expand and solar output peaks across the continent, a surge in midday generation is driving down the market value of solar electricity – a phenomenon known as price cannibalisation. As a result, capture rates, which measure the average market price received by solar producers compared to the overall wholesale electricity price, are declining. A lower capture rate reflects a higher mismatch between when solar produces and when electricity is most valuable. Figure 9 shows the negative link between solar generation and capture rates in Germany.

Figure 9

Solar generation soars as its economic value falls



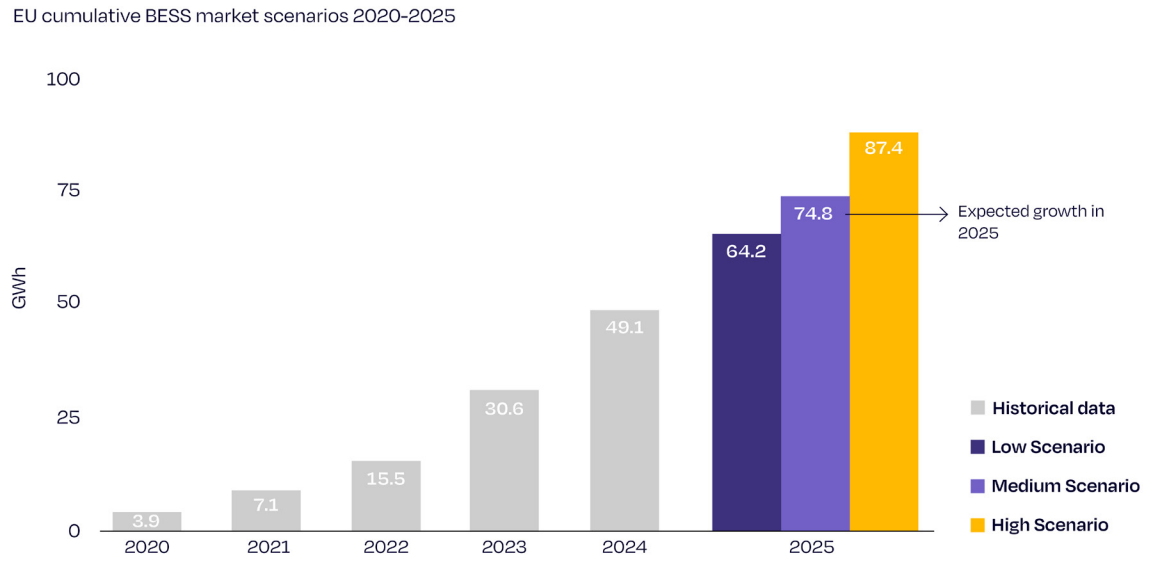
Source: Rystad Energy European Renewables & Power Solution

Germany is both the EU's largest solar market and power consumer. As part of the record-breaking solar generation volumes achieved in the EU in June 2025, solar reached a 30% share of monthly electricity generation within the country's power mix. At the same time, capture rates fell to an all-time low of 31%. Historically, capture rates have never dipped below 50%. Before this dynamic improves, capture rates are likely to fall further. However, this also strengthens the case for investment in demand-side flexibility, battery storage, and grid modernisation – tools that can shift consumption and store excess solar generation when market prices are low.

With lower and increasingly negative power prices pushing down on solar capture rates, and less access to private revenue streams for purely solar projects, the value of storage is increasing. By playing on the increasing spread in electricity prices, and flattening the output of solar electricity, the two technologies complement each other perfectly. As such, the development of storage is largely tied to the development of solar. Figure 10 shows the EU battery energy storage fleet is expected to grow by 25.7 GWh this year, equal to 52%, to a total of 75 GWh. In our recently published **European Market Outlook for Battery Storage 2024-2029**, we anticipate the EU battery fleet to reach 334 GWh by 2029 under current market conditions, with the potential to grow 10-fold from 2024 levels to over 500 GWh in a high policy support scenario.

Figure 10

EU battery fleet to grow by over 50% and reach 75 GWh by end of 2025



The rapid scale-up of battery storage is primarily driven by the utility-scale segment, which is expected to dominate new deployments through to the end of the decade. In 2025 alone, battery capacity is projected to increase by nearly 50%, and utility-scale systems are set to surpass residential installations as the leading market segment.

Behind these figures is not only good news. Despite the increasing value of flexibility, residential battery installations, which surged during the energy crisis due to high electricity prices and strong incentives, are declining. This is a result of falling retail prices and expiring support schemes, and although softer, is in line with the residential solar market contraction of 2024. Despite these effects, the business case for residential storage still stands, with new approaches allowing simple access to diverse revenue streams, from self-consumption optimisation to accessing frequency regulation and balancing with a bundle of systems, though only in few member states today. Meanwhile, the C&I segment continues to grow – we anticipate 69% growth in the EU this year – but remains well below its potential due to regulatory complexity and limited access to market-based revenues. To meet the flexibility needs of a renewables-heavy power system, faster progress is needed – particularly in commercial storage and hybrid utility-scale solar-plus-storage projects, which remain underutilised across most of the EU. Targeted reforms to market access, permitting, and revenue stacking are essential to unlock the full system value of batteries, as outlined in the policy recommendation of our BESS market outlook.

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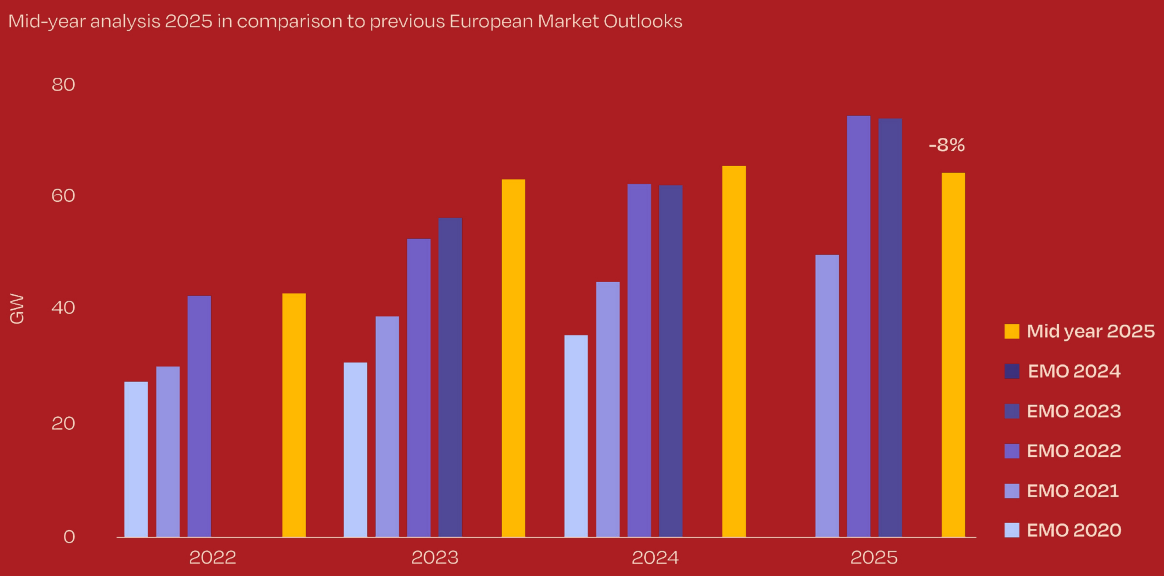
Past, present, future

After years of the solar market out-performing the estimations in SolarPower Europe's annual EU Market Outlook (EMO) for Solar Power, 2025 is set to be the first year of under-performance, as it appears this year's market will be 8% below our Medium Scenario forecast in the EMO 2024, published in Dec 2024, and even 13% below our EMO 2023 forecast. The forecast difference is smaller (-2.4%) when compared to the figures for the EU of the **Global Market Outlook for Solar Power 2025-2029** published in early June 2025 (not shown in graph).

Figure 11

Annual market expectations decline further due to continued rooftop slowdown



Chapter 2

Markets to watch

Country highlights

The 6 biggest markets covered 69% of 2024 solar deployments and are set to cover 67% in 2025. Keeping an eye on their development is key to forecasting the EU solar market. In this chapter, we show our latest "weather update" for selected countries in the medium term. We then zoom out to explore major trends in EU Member States' solar deployment over the past 2 years. The chapter wraps up by drawing on key lessons from these findings and outlining what they mean for the road ahead.

Figure 12

Overview of the top 6 markets in 2025

1

Germany

2024 Market size	2025e Market size
17.3 GW	16.9 GW -3%

Main drivers

- Strong renewables auctions persist, with more involvement of storage in 2025
- Ambitious solar target of 215 GW by 2030
- National policy focuses on phasing out coal through renewables
- Supportive solar policy framework changes of prior government (Solar Package 2024 / Solar Peak Law 2/2025)

Main barriers

- Slowing residential rooftop market
- Decreasing and uncertain policy support for renewables as government focuses on gas plant deployment, drops the promised elimination of electricity tax, and opens discussions on renewables targets
- Suboptimal policy and funding design for optimal storage implementation
- Negative prices and progressive phase-out of compensation during negative price hours under CfD

2

Spain

2024 Market size	2025e Market size
8.8 GW	9.0 GW +3%

Main drivers

- Large utility-scale project pipeline with increasing number of permits granted
- Distant NECP target of 76 GW_{AC} could drive beneficial policy changes
- Energy communities to support rooftop market

Main barriers

- Residential rooftop market to further decline in 2025
- Growing curtailment and negative prices
- Inadequate grid resilience revealed during 2025 blackout

3

Italy

2024 Market size	2025e Market size
6.8 GW	6.0 GW -12%

Main drivers

- Battery storage auctions to drive investment
- FER-X decree supporting solar deployment
- Strong NECP target of nearly 80 GW

Main barriers

- Regional opposition to land access for solar
- Slowdown of rooftop installations after support scheme phaseout
- Administrative hurdles create long permitting processes for utility-scale solar

4

France

2024 Market size	2025e Market size
4.7 GW	4.7 GW +0%

Main drivers

- Surge in commercial installations
- Largely untapped rooftop market with a lot of room to grow
- Though often undersubscribed, auctions create momentum for large-scale installations

Main barriers

- Decreasing political support resulted in a proposed moratorium on solar/wind projects, which, albeit refused, caused industry uncertainty
- Relaxation of large solar carport mandate to decrease C&I expansion
- Announced phaseout of feed-in tariffs likely to impact further deployment

5

Poland

2024 Market size	2025e Market size
4.1 GW	3.5 GW -15%

Main drivers

- Industrial electrification to drive large rooftop and ground-mounted solar
- Large-scale storage rollout plan
- Support scheme for residential solar

Main barriers

- Strong rise in curtailment and slowdown of utility-scale solar
- Lack of Agri-PV framework
- Slowdown in residential and small commercial solar

6

Netherlands

2024 Market size	2025e Market size
3.1 GW	2.7 GW -12%

Main drivers

- EU leader in Watt/capita, with wideset rooftop deployment, looking at solutions to increase the value of solar
- SDE++ scheme includes wider categories but drives mainly utility-scale solar
- Grid operators increasingly focus on battery storage access

Main barriers

- Rooftop market on a continuous decrease
- Policy uncertainty with the fall of government coalition
- Negative publicity on rooftop solar due to policy uncertainty and fines from energy retailers on solar feed-in

By July 2025, official data has been published on several EU markets for most of the first half of 2025. Many similar trends can be witnessed among them.

The most defining trend of 2025 so far is the dominance of the **utility-scale segment**. After growing by over 75% in the past two years, the EU's utility-scale solar market is expected to expand by another 10% this year. This positions large-scale solar as the main deployed form of solar in 2025, reaching a deployment share of 50%, with Spain, Germany, and Italy at the helm.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Spain has sustained its leadership with over 7 GW of utility-scale capacity added in the past two years and is on track to surpass that figure again this year. The country's solid PPA framework and favourable market structure continue to drive development in 2025. In Germany, growth is bolstered by robust competitive auctions and strong federal ambitions. Through a consistent policy environment and clear long-term targets, the country is not expected to lose its top spot anytime soon. Italy, the third-largest utility-scale market, is also seeing a remarkable expansion. In just one year, its utility-scale market has more than doubled from 1.2 GW to over 2.9 GW in 2024. Though uncertainties on land-access shortly shook the grounds in early 2025 and a small slowdown is expected this year, Italy is still on track to retain its third-place position within the utility-scale segment supported by investor confidence and improved permitting processes.

A notable newcomer this year is Finland, which is experiencing a breakout year. From just 60 MW installed in 2023, the market is now expected to exceed 300 MW in 2025, marking a fivefold increase in just two years. Strong early-year performance suggests the Nordic country is quickly becoming one to watch in the utility-scale space.

Meanwhile, Poland, long viewed as a stable and growing utility-scale market, is showing signs of stagnation. The country's reliance on curtailments to balance the grid is starting to take its toll. Q1 2025 mirrored Q1 2023 in terms of volume, but unlike previous years, the rest of the year may not deliver a rebound, raising concerns about the structural bottlenecks limiting growth.

In contrast to the boom in utility-scale, the **commercial and industrial (C&I) segment** has started to lose steam. After an 85% growth surge in 2023, expansion slowed to just 4% in 2024. In 2025, a slight contraction of 3% is expected, largely driven by a drop in commercial installations. Nonetheless, this makes it a segment worth closely monitoring, as market conditions remain in flux.

Major markets like Germany and Poland have managed to keep their commercial segments relatively stable, but others have not fared as well. The Netherlands, Sweden, and Italy all experienced noticeable slowdowns, mainly due to reductions or phase-outs in support schemes. France, on the other hand, has seen strong expansion in the 100–250 kW segment, which has tripled over the past two years and continues to support overall market resilience. Important to note are the ongoing policy changes are potentially harming the future development of solar in France. For example, in the first half of 2025, discussions were held on a moratorium for large solar and wind projects. Eventually, the proposal did not gather the support needed to pass, but it did reveal stakes the French government is willing to play with.

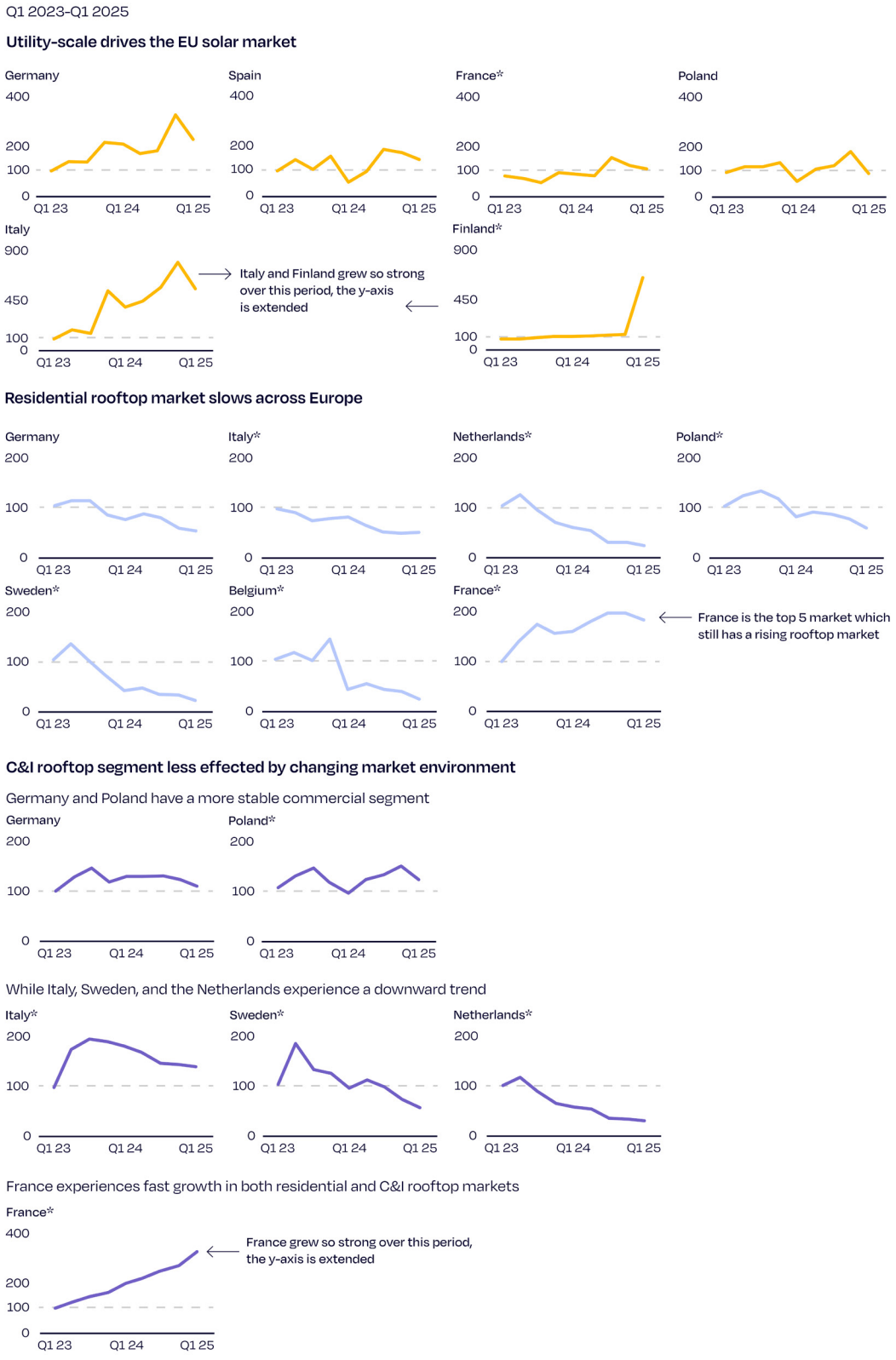
The **residential segment**, often the most reactive to external conditions, is showing a clear slowdown in 2024-2025. After rooftop installations peaked in 2023 – accounting for 17.5 GW or 28% of the total installations, it saw a near 30% decline in 2024 to the level of 12.4 GW. In 2025, it is expected that this segment will account for 15% of total installations or 9.4 GW, showing how quickly household investment decisions can switch when the economic or policy environment shifts.

The most notable residential market slowdown comes from the Netherlands, the EU's leader in solar capacity per capita. The country has experienced the most severe decline in absolute terms. The phasing out of net-metering without sufficient replacement support lies at the basis of this. Neighbouring region Flanders has seen a similar, though less pronounced, drop – linked to yearly changes in incentive programmes. Sweden also saw a downturn after implementing new taxation rules and changing support scheme structures. In Germany, the decline is tied to falling retail electricity prices and a perceived lower urgency to invest. Yet the interest is still there as can be witnessed from the growth in the plug-in solar segment. In Poland, the residential market has seen a rush in 2022 before the switch from net-metering to net-billing. Ever since, installations have been happening at a slower pace.

The following figure shows the reaction of major EU markets over the past 2 years and compares them with those of some smaller markets. The graphs all show normalised quarterly installations per segment given over the period Q1 2023 (index = 100) to Q1 2025. The graphs start in 2023 for a reason; it was a pivotal year for the solar sector. While the cost of modules, labor and balance-of-system (BOS) components started to drastically drop, and the energy prices lowered simultaneously. Rooftop installer pipelines began to shrink, while many utility-scale projects reached commissioning. Some countries were able to keep the ball rolling on large-scale projects by establishing themselves as attractive markets for developers allowing them to rapidly decarbonise their electricity production. At the same time, for many major EU markets, the rooftop segment peaked in 2023, to gradually decline over the course of 2024.

Figure 13

Solar PV segments across top EU markets (indexed, Q1 2023 = 100)



Source: Vlaams Energie- en Klimaatagentschap (VEKA), Bundesnetzagentur, Enedis, Terna, Agencja Rynku Energii (ARE), Red Eléctrica, Energimyndigheten, Energieleveren, Suomen uusiutuvat ryope

Note 1: Official data often is reported using different segmentations for residential, commercial, industrial, and utility-scale solar. For the graphs with an (*) this was the case. Prudent assumptions were taken to capture the trend for the respective market.

Note 2: For Belgium (Flanders), Germany and Spain, retroactive updates to the latest monthly data are not uncommon.

Conclusion

In June 2025, solar became that month's primary electricity generator, proving its ability to deliver.

But the EU's ambitions are higher, and future deployment will depend on strengthening the energy system surrounding solar.

Auctions and cPPAs are driving utility-scale solar deployment, but its continued success hinges on adapting to new market realities as increasing hours of negative power prices and curtailments and low solar capture rates provide large uncertainties and a significant drop in interest for solar PPAs. The solution is to rapidly scale-up battery storage and overall system flexibility, if the EU is to avoid missing its 2030 renewables targets. The EU power market is evolving quickly.

Policy, infrastructure, and investment strategies must evolve with it to keep the EU's energy transition on track, as outlined in our policy recommendations in the **EU Market Outlook for Solar Power 2024-2028.**

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