"FOR PV + BESS TO CONTINUE SCALING, WE NEED DEMAND-SIDE GROWTH: ELECTRIFICATION OF TRANSPORT, HEATING, AND INDUSTRY. DECARBONISATION HAS TO REACH BEYOND THE POWER SECTOR"

The latest SolarPower Europe's Mid-Year Solar PV Market Report 2025 forecasts a 1.4% drop in annual solar additions compared to 2024—marking the first year of slower growth since 2015. While 2025 is still expected to deliver the second-highest level of new capacity ever installed in the EU, the slowdown has raised concerns about the trajectory towards the continent's 2030 climate and energy targets. Is this a sign of market saturation—or just a temporary deceleration? Kim Keats, market analyst and director of EKON Strategy Consulting, shares his perspective in the interview that follows.

Kim Keats
Director

Kim has supported the completion of 72GW of renewable and conventional projects, as well as water desalination projects valued at USD44 billion over the past 24 years, including 15GW in Spain.

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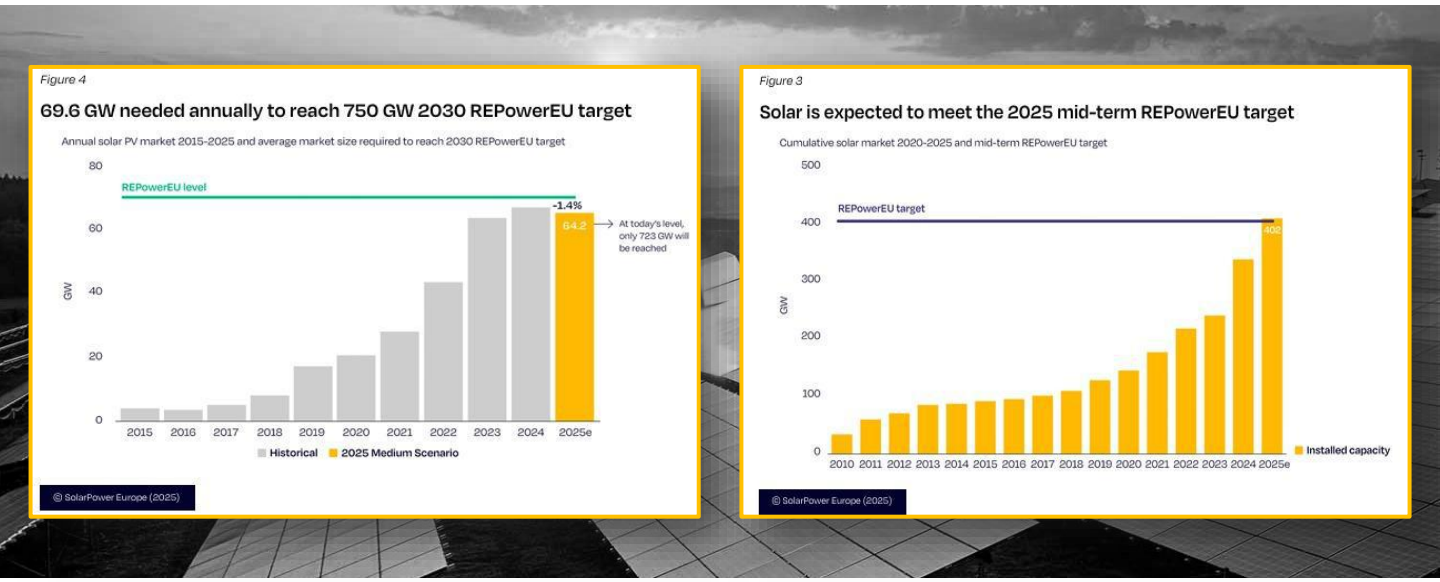
Have we reached a saturation point for solar? Why?

It exists, but we're not there yet. All markets suffer from saturation. Potable water has a different value depending on whether you're in the desert or next to a mountain spring, because water can be easily stored but is hard to transport. By contrast, electricity can be transported more easily using existing transmission infrastructure but cannot be easily stored, which helps explain why prices vary by time of day.

The more PV one deploys, the lower its realised price. Beyond some point, the realised price will drop below its LCOE. However, as panels get cheaper, the saturation point is actually a moving target. Similarly, as storage takes off, the difference between day and night-time hours will shrink. In equilibrium, the difference should sustain the last investor in storage capacity; beyond that, net income will not cover their investment costs. But the price of batteries is also falling fast—so we are dealing with two moving targets.



As is, we can say that the combination of PV+BESS has some way to go. Still, the SolarPower Europe July 2025 outlook warns that this year could mark the first slowdown in annual EU solar deployment in over a decade—not a decline, but **a sign that the pace of growth is naturally levelling off.**

Will the arrival of BESS boost photovoltaic growth through 2030?

Yes, storage will continue to support PV growth. But **storage alone is not a silver bullet**. As SolarPower Europe's analysis shows, PV deployment is still increasing, but not as fast as before. Growth will be limited if demand, grid flexibility, and permitting don't keep pace.

Even with abundant storage, overproduction relative to demand will depress prices. For example, **if PV generates 300 TWh but annual demand is only 250 TWh, prices will collapse**—regardless of BESS penetration.

What is needed, at a general level, to ensure this?

Energy plans (like NECPs) are holistic. Supply does not a plan make. We have to see other things evolve—like demand. For PV+BESS to continue scaling, we need demand-side growth: electrification of transport, heating, and industry. **Decarbonisation has to reach beyond the power sector.**

That means rethinking everything from how we plan infrastructure investments to how we price and regulate electricity use. More **flexible consumption, smarter tariffs, digitalisation, and behind-the-meter optimisation** will all be needed.

If generation grows without matching changes in demand patterns or flexibility, **we risk bottlenecks, curtailments, and eroded value** for all clean energy technologies—including storage. Supply must meet a system that is ready to use it wisely.

Is the general electricity market price in Europe already a good incentive for BESS?

When low-cost renewables are at the margin, **wholesale prices collapse**. They already go negative if renewables that receive guaranteed price support schemes or contracts are at the margin. This is especially true with PV since they all dispatch at the same time. By contrast, wind has a degree of regional differentiation.

Combine this with a thermal gap at night-time and you'll have very significant intra-day price spreads which storage can take advantage of. Moreover, **flexible thermal plant will switch their attention to the provision of ancillary services**, and we will also see prices rise there. Both offer opportunities for storage.

However, note that this is a temporary phenomenon—since, in due course, the entry of storage will cannibalise intra-day spreads and ancillary services, just as PV has cannibalised itself.

What mechanisms would be most advisable to ensure their profitability in those markets where arbitrage is insufficient?

It depends what you mean by "insufficient". The writing is on the wall: **storage has a bright future**, whichever way we split this between arbitrage or the provision of ancillary services.

The problem is the **credibility of the business plan**. Many banks are reluctant to lend to storage projects where the business is affected by very different drivers than conventional and renewable energy projects. It is not that banks have a problem lending to price-taking technologies—it's the arbitrary and uncertain nature of the income projections for storage.

That is why in many countries where we do see storage projects, this has been initially incentivised by the **deployment of capacity markets**. Guaranteeing a certain income has a salutary effect on banks' willingness to lend. Thereafter, the deployment of the first few projects and their commercial success builds confidence in the business model.

That said, each market will evolve at its own pace given differences in renewable resource, existing flexible generation, legacy contracts for renewables, regulatory measures, and market agents' willingness to contract. So if we are looking for a template—regardless of our personal feelings on the matter—**the capacity market is the next critical step**.

How does the role of solar self-consumption fit into the broader picture?

A significant share of the recent surge in solar deployment has come from rooftop PV for self-consumption, not just utility-scale projects. SolarPower Europe's analysis highlights that rooftop installations were a key driver of the EU's recent record growth. However, it also notes that the sharpest slowdown in 2025 is occurring in small-scale systems—especially residential and commercial rooftop solar.

The incentives for self-consumption differ fundamentally from those for grid-scale PV. The key point is that autoconsumption is evaluated against retail tariffs, not wholesale market prices. This means **households and businesses can justify solar investment as a hedge against high electricity bills**—even when wholesale prices are low or even negative. This works particularly well in jurisdictions where net metering, net billing, or fixed retail tariffs are in place.

But there's a catch. If retail tariffs don't reflect time-of-use pricing, then self-consumers have no incentive to shift production or consumption to align with system needs. Worse still, since they're shielded from wholesale price signals, they may be producing and exporting excess solar power at the very time the system least needs it—**amplifying grid imbalances and contributing to price cannibalisation**, while remaining immune to negative prices.

Without reform, this risks making things worse at the system level—even as it makes economic sense at the individual level. Going forward, better tariff design and dynamic pricing signals will be needed to ensure that self-consumption supports—rather than distorts—overall system efficiency.