

Solar and storage take centre stage

As solar becomes a mainstream energy source, attention is shifting from generation alone to the smarter storage, management and use of clean power.

Solar has moved beyond the question of whether it can deliver low-cost electricity. That argument has largely been won. Across rooftops, commercial buildings and utility-scale sites, solar PV has become one of the defining technologies of the energy transition. It is familiar, bankable and increasingly central to how homes, businesses and power systems think about future energy supply.

The more interesting question now is what comes next.

For years, the solar sector has measured progress through installation figures, module efficiency, falling prices and capacity records. Those remain important, but they no longer tell the whole story. As solar becomes part of the mainstream energy mix, its value is increasingly shaped by what happens after power is generated. Can it be stored? Can it be shifted to a more useful time of day? Can it help a business manage peak pricing periods? Can it support a grid under pressure? Can it give customers more control over how and when they use energy?

This is where storage has moved from supporting role to core requirement.

Battery storage is no longer a useful extra attached to a solar project. In many markets, it is now being considered from the start. For residential users, it can increase self-consumption and reduce exposure to changing tariffs. For commercial and industrial sites, it can help manage demand peaks, improve resilience and support more predictable energy costs. For utility-scale projects, it can help shift generation, reduce curtailment risk and open up new revenue opportunities through flexibility and grid services.

That is why solar plus storage feels like the most important current subject in the sector. It is not a niche technology subject. It is a commercial issue, a customer issue and a power system issue.

The numbers reflect that change. SolarPower Europe reported that the EU installed 27.1 GWh of new battery capacity in 2025, taking

operational capacity to 77.3 GWh by the end of the year. It also described 2025 as the EU's twelfth consecutive record year for battery storage deployment.¹ Reuters, reporting on the same market momentum, highlighted a 45% rise in EU battery storage in 2025, driven mainly by utility-scale installations, while also pointing to barriers around permitting, grid connections, standards and skills.²

That balance matters. The market is accelerating, but it is not yet simple. Demand is clear. The technical case is increasingly strong. The commercial logic is becoming easier to understand. Yet the route to deployment still depends on regulation, planning, grid access, installation expertise and investor confidence.

For PES Solar readers, that is precisely where the opportunity lies.

A solar project with storage is not simply a solar project with a battery placed beside it. It requires different thinking from the start. Site design, inverter specification, fire safety, monitoring, warranty structure, operating strategy and revenue modelling all become more complex. The project is no longer judged only by how much energy it produces over a year, but by how intelligently that energy is captured, stored, discharged and valued.

This has important consequences across the supply chain.

For installers and energy performance certificates (EPCs), storage brings a need for deeper technical capability. System sizing becomes more nuanced. A battery that is too small may disappoint the customer. A battery that is too large may weaken the economics. The right solution depends on the load profile, export rules, tariff structure, available space, grid connection limits and the customer's need for resilience or revenue optimisation.

For inverter and power electronics companies, the opportunity is equally significant. As solar and storage become more closely linked, the inverter is no longer just a conversion device. It becomes part of a wider control



architecture. It has to help manage generation, storage, consumption and grid interaction in real time. That makes software, monitoring and system intelligence as important as hardware performance.

For battery manufacturers and integrators, bankability and trust will matter as much as capacity. Customers need confidence in safety, cycle life, degradation assumptions, warranty terms and after-sales support. In a maturing market, headline specifications alone will not be enough. The strongest suppliers will be those that can demonstrate reliability in real operating conditions and provide clear support across the life of the system.



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For commercial and industrial users, the shift is especially compelling. Many businesses are no longer looking at solar simply as a sustainability measure. They are looking at it as part of their energy strategy. A factory, warehouse, cold storage facility, data centre, supermarket or logistics hub has a very different relationship with electricity than a household. Consumption is often high, operational continuity matters and energy price volatility can have a direct impact on margins.

In that context, solar plus storage speaks the language of business. It can support cost control, resilience, carbon reduction and energy independence. It can also help companies make better use of roof space, car

parks and available land. For businesses under pressure to decarbonise while protecting profitability, that combination is powerful.

The residential market is also changing. The first phase of rooftop solar was often about generation and payback. The next phase is becoming more connected and more personal. Homeowners are thinking about batteries, EV charging, heat pumps, smart tariffs and energy management apps. Solar is no longer just a panel on the roof. It is becoming part of a domestic energy ecosystem.

That creates new expectations for the solar industry. Customers do not just want to produce clean electricity. They want to

understand it, store it, control it and use it in ways that fit their lives. Products need to be easier to understand. Systems need to be more intuitive. Data needs to be clearer. Installers need to explain value in practical terms, not only in kilowatt-hours and payback periods.

At utility scale, the issue is broader but no less urgent. As solar penetration rises, periods of abundant generation can create pressure on the grid. In some markets, curtailment is already a growing concern. The International Energy Agency has warned that rising shares of solar photovoltaic (PV) and wind are increasing integration challenges, with curtailment becoming more visible in several markets.³ It also describes battery



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storage as one of the most versatile tools for short-term power system flexibility, able to support balancing, grid services, security of supply and the shifting of renewable generation to periods of higher demand.⁴

This is an important point. Storage should not be seen only as a way to solve a solar problem. It is also part of the wider modernisation of electricity systems. As generation becomes cleaner and more variable, flexibility becomes more valuable. Solar plus storage helps close one of the sector’s most obvious gaps: the difference between when clean power is produced and when customers actually need it.

However, it would be a mistake to make the story sound too simple. Storage is not a magic answer. It does not remove the need for grid investment, better planning, smarter market signals or faster permitting. It does not make every project automatically viable. The economics still depend on local conditions, revenue streams, regulation and customer behaviour.

That is why this next stage of solar will require more disciplined project development. The industry cannot rely on enthusiasm alone. It will need strong data, transparent modelling, skilled installation, robust safety standards and realistic expectations. Customers will need clear explanations of what storage can do and what it cannot do. Investors will need

confidence that projected revenues are credible. Grid operators will need systems that can be trusted to respond when required.

For many years, solar’s greatest strength was its simplicity. A panel generated electricity when the sun shone. The economics became increasingly attractive. The technology became familiar and repeatable. That simplicity helped solar scale at remarkable speed.

The industry is now moving into a more sophisticated period. It will involve hybrid systems, digital controls, battery chemistry choices, smart charging, grid services, demand response and more complex customer propositions. That complexity can be challenging, but it also adds value. It allows solar to move from generation asset to energy platform.

This is a significant change in how the industry presents itself. Solar is not just selling electrons. It is selling control, resilience and better use of energy. It is helping households and businesses become more active participants in the energy system. It gives developers new ways to strengthen project value, helps grids manage variability and gives the wider energy transition a practical route from clean generation to usable power.

That is why solar plus storage has moved to the centre of the market. It connects the major themes shaping the sector today: self-consumption, electrification, flexibility,

resilience, digitalisation and grid support. It also brings together many parts of the PES Solar readership, from manufacturers and developers to EPCs, installers, asset managers, software providers and commercial energy users.

Solar has proved it can scale. The task now is to make that growth work harder across homes, businesses and power systems.

If the industry succeeds, it will not only install more panels. It will deliver smarter energy systems that make solar more useful, more flexible and more valuable. That is the real significance of storage. It does not replace the solar story. It completes it.

The future of solar will not be judged only by how much power is generated at noon on a bright day. It will be judged by how effectively that power is stored, managed and delivered when it matters most.

References

¹ SolarPower Europe, EU Battery Storage Market Review 2025, published January 2026.

² Reuters, Europe’s swelling wave of battery installations set to hit barriers, published February 2026.

³ International Energy Agency, Renewables 2025, renewable electricity analysis.

⁴ International Energy Agency, Electricity 2026, flexibility analysis.