Issue 8 | September 2025 Serving the sector since 2008

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Welcome to the September issue
of Renewable Energy Installer & Specifier (REI) magazine

The team are looking forward to meeting many of you at the Solar & Storage Live event, being held at the NEC from the 23rd of September. This event brings together the movers and shakers of the solar and storage industry, along with many of those now involved within the EV sector. Please come and say 'hello' to the team at our stand (P2a) at any point over the 3 days. We're very keen to meet you, gather your feedback and, of course, work with you on any future projects.

Meanwhile, this issue contains a wide selection of news, opinion pieces and technical features. Turn to page 14 for detail on how funding can help finance renewables. Mark Krull, Director of LCL Awards looks at the potential of battery storage and the opportunities for electrical engineers on page 18.

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Solar Careers UK now been launched

SOLAR Energy UK has launched Solar Careers UK, a platform connecting training and education providers, employers and jobseekers across the rapidly growing solar energy and battery energy storage sectors.

With the UK Government targeting nearly 60GW of solar power by 2030, the solar sector is expected to deliver thousands of new jobs in the coming years. **Solarcareersuk.org** is set to become the central hub for this transformation, offering a comprehensive destination for career opportunities, live job vacancies, training pathways and industry insights.

"Our vision is clear; to guide every person possible into solar careers," said Solar Energy UK's Head of Solar Careers UK, Sturge Mazzocchi. This means fulfilling three key objectives:

- promote career opportunities – raise awareness of solar and energy storage careers nationwide;
- support recruitment – help people into jobs, growing the workforce; and
- promote training opportunities – enhancing workforce skills.

It comes at a critical time. The UK faces a well-documented green skills gap, with demand for skilled workers in renewable energy far outpacing supply. Solar Careers UK aims to address this challenge head-on by providing clear, accessible routes into new careers for people from all backgrounds and levels of experience.

The skills agenda is a central theme of the government-industry Solar Roadmap, which committed Solar Energy UK to guidance on moving into the solar sector and to run regional careers fairs[1].

Earlier this year, the flagship Solar Careers Hub event at South Thames College brought together jobseekers and employers for a day of interviews, demonstrations and expert talks. The event highlighted the diversity of roles available in the sector, from entry-level positions to senior engineering roles with salaries up to £70,000[2].

Solar Careers UK will complement the efforts of the Department for Energy Security and Net Zero's Office for Clean Energy Jobs, the Department for Work and Pensions, the Department for Education and Skills England to, as the roadmap says, "help deliver a resilient, highly skilled, well-paid solar workforce".

What the platform offers

Solar Careers UK is designed to serve a wide audience, from school leavers and career changers to experienced professionals looking to transition into the solar and battery storage industry.

Key features of the platform include:

- training and education resources;
- career pathways;
- events and fairs;
- job descriptions;
- links to careers pages; and
- video interviews.

Solar Careers UK is focused on inclusivity and accessibility. The platform encourages participation from underrepresented groups and aims to break down barriers to entry through targeted outreach and support.

As the UK accelerates its transition to clean energy, the need for skilled workers in solar and related technologies will only grow. Solar Careers UK is set to play a pivotal role in shaping the workforce of tomorrow, helping individuals find meaningful, future-proof careers while supporting the nation's climate goals.

To explore opportunities or learn more, visit **solarcareersuk.org**.

Footnotes

1 Roadmap seizes 'once-in-a-generation' opportunity of the solar revolution
2 Solar Careers Hub is London's most interactive careers fair

Rooftop solar reduces electricity bill by 66% and inspires students at Thomas Telford University Technical College

THOMAS Telford University Technical College (UTC) has cut its annual electricity costs by 66% with the installation of an innovative DC-optimised rooftop solar system. Designed and installed by renewable energy specialist Kembla Limited using SolarEdge technology, the system is helping the college to meet its high energy demands while also serving as a powerful educational tool for students.

Thomas Telford UTC is situated in the historic Grade II listed building of the former Springfield Brewery in Telford. The solar system was installed as part of a £12.6 million expansion project aimed at creating an energy-efficient campus for students aged 11-19 years. Funded by a loan from the School Capital Funding Scheme, the system generates approximately 277 MWh of renewable energy annually. Most of this energy is used on-site to power the school's operations, while any surplus produced during weekends and holidays is sold to the grid, generating additional revenue for the school.

The system's advanced safety features, combined with the installation of permanent edge protection to eliminate the need for temporary scaffolding during maintenance, created an added benefit for the college; a secure rooftop area that students can safely use to observe the solar system firsthand.

Greenvolt Next UK announces rooftop solar installations on two UK shopping centres from MDSR investments

GREENVOLT Next UK, part of the Greenvolt Group, has signed a contract with commercial real estate owner MDSR Investments to install PV solar rooftop panels on two of its UK shopping centres; the Weston Favell Shopping Centre in Northampton and Birchwood Shopping Centre in Warrington.

At Weston Favell Shopping Centre, the new solar installation will include 848 solar panels with 381kWp installed capacity, spread across 4,114m^2 of the centre's roof space. The project is expected to generate over 330kWh of clean power per year, which is approximately 26% the centre's total projected consumption.

Birchwood Shopping Centre in Warrington will host 452 panels across 1,564m^2 with an installed capacity of 200kWp. The installation began in May 2025 and is projected to generate approximately 154 kWh per year, around 29% of the centre's overall power.

The projects are financed under Power Purchase Agreement (PPA's), allowing MDSR to access clean, less expensive energy with no upfront investment. Together the system will save over 145 tonnes of carbon dioxide per year (98 tonnes for Weston Favel and 47 for Birchwood), contributing to MDSR's overall mission to reduce the emissions of its real estate portfolio.

It builds on a successful project at MDSR's Nova Arcada shopping centre in Braga, northern Portugal, where Greenvolt Group developed a 1.2 MWp installed capacity rooftop system with 2,164 solar panels. This project can generate 1,531 MWh of clean electricity per year, enough to help Nova Arcada avoid 303 tonnes of CO_2 and cutting grid consumption by 34%.

www.next.greenvolt.com

Schneider Electric unites experts at Leeds Innovation Hub, showcases products set to supercharge EV transition

SCHNEIDER Electric hosted an exclusive event at its Leeds Innovation Hub, showcasing its latest products and technology in the electric vehicle charging space. The event also provided a platform for industry experts to discuss key advancements in the sector.

One of the highlights of the day was a panel discussion around ultra-rapid charging. Gill Nowell, Director of eMobility at Green TV, led a conversation which covered megawatt charging. Panel participants included Joe Ellwood, Electric Truck Charging Manager at Volvo, Josh Spencer, EV Sales Manager at Ford & Slater, and Sam Clarke, Commercial Lead at Gridserve.

Attendees had the chance to see a variety of Schneider Electric products in action, including the recently released:

1. FeederSeT CB, a next-generation circuit breaker panel for safe and efficient power distribution.
2. Schneider StarCharge Fast 60 and Fast 320kW, designed for rapid and ultra-rapid charging in commercial and public settings.
3. StarCharge 720kW, one of the most powerful chargers available from Schneider Electric, supporting high-demand and heavy-duty vehicle charging.
4. The Canalis for EV system, providing customers with a scalable, energy-efficient solution for distributing power to multiple charging points in large installations.

www.se.com/uk

BV-ComOffice cuts EV charging costs by 70% using SolarEdge's new solar-powered EV charging solution for businesses

SOLAREDGE announces the success of one of its first integrated commercial EV charging and solar installation following the recent launch of its solar-powered EV charging solution for businesses. Leveraging SolarEdge's new EV charger and EV fleet management capabilities following the acquisition of Wevo Energy last year, German retailer BV-comOffice GmbH has been able to reduce its EV fleet charging costs by approx. 70%.

Headquartered in Regensburg, BV-ComOffice GmbH is a German retailer specializing in the installation and maintenance of office and media technology equipment. To help meet its ESG targets, the company invested in a 100kWp rooftop solar system powered by SolarEdge inverters and Power Optimizers, a 40.5 kWh battery, as well as a fleet of 12 SolarEdge EV chargers. As the brains of the operation, the SolarEdge ONE for C&I energy management software also enables BV-comOffice to prioritize solar energy use according to its different energy needs for maximum energy bill savings.

Naama Ohana, Chief Commercial & Industrial Division, SolarEdge, adds: "The acquisition of Wevo has enabled us to unlock more value from solar power, and vice-versa, to improve the long-term economics of EV charging. With the SolarEdge ONE for C&I software solution, commercial businesses can confidently embrace EVs, knowing their energy consumption is being autonomously optimized for maximum energy bill savings."

Global rollout of SolarEdge's new EV charging solution for commercial and industrial customers began in May 2025, continuing throughout 2025.

Octopus & BYD turbocharge EV revolution with all-inclusive car and charging bundle Freeport seed capital programme

OCTOPUS Energy, a UK energy supplier, has joined forces with BYD, an electric car maker, to announce the launch of the Power Pack Bundle – the UK's first vehicle-to-grid (V2G) bundle – revolutionising the EV experience for drivers.

Unveiled at Octopus Energy's Energy Tech Summit, the Power Pack Bundle - priced at under £300 a month* - will include a leased V2G-ready BYD Dolphin, a bi-directional Zaptec Pro charger and access to a smart tariff that offers completely FREE home charging.

With free charging, typical EV drivers can slash their annual bills by £620 compared to charging on a standard tariff – and save nearly £1000 compared to fuelling a petrol car*.

Powered by Octopus Energy Group's tech platform, Kraken, the Power Pack Bundle makes these savings effortless for customers. Drivers simply plug in overnight and let the tech do the rest. The fully automated process guarantees free charging at home for every mile driven during the lease.

This is the first time V2G technology is built into the car itself, eliminating the need for a costly first-generation V2G charger. As more V2G-ready vehicles hit the road, hundreds of thousands of EVs could soon act as mini power stations.

Octopus and BYD have also partnered with Motability Operations, the UK's largest leasing company, to make the V2G technology available to disabled people across the country, ensuring low-cost electric driving is accessible to all.

The Power Pack Bundle will be available later this year. Interested customers can be the first to get their hands on the tech by placing a reservation with Octopus Electric Vehicles.

Join the wait list here: **www.octopusev.com/power-pack-bundle**

Spitfire homes accelerate sustainable living with Sync Energy EV Charging

SPITFIRE Homes has chosen Sync Energy as its preferred EV charging solution for their newest development, Ellenbrook.

Spitfire Homes is recognised in the industry for their commitment to delivering design-led, aspirational properties that showcase a variety of sustainable features, each designed to be future-proofed and meet the demands of modern life.

As part of their continued investment into sustainability, Sync Energy's Wall Charger 2 and fully compatible, floor-mounted, Single EV Stands, have been installed at their new collection of homes, Ellenbrook, Moreton-in-Marsh.

Forming part of the Spitfire Homes Bespoke Collection, each property at Ellenbrook boasts Spitfire's Signature Specification with each home appointed with a selection of quality brands and materials curated to deliver a balance of style, efficiency and practicality.

Sync Energy's Wall Charger 2 comes with personalised settings such as scheduled charging and optimised cut-off points, users can charge dynamically and maximise cheaper rates of electricity, controlled via a smartphone app.

The specification at Ellenbrook also boasts the addition of Luceco's external up/down decorative wall lighting with PIR sensor and adjustable time and lux controls. Inside each home, you'll find BG Electrical accessories, including BG flatplates in black nickel, switches and sockets, USB sockets, ceiling pendants and decorative bell pushes.

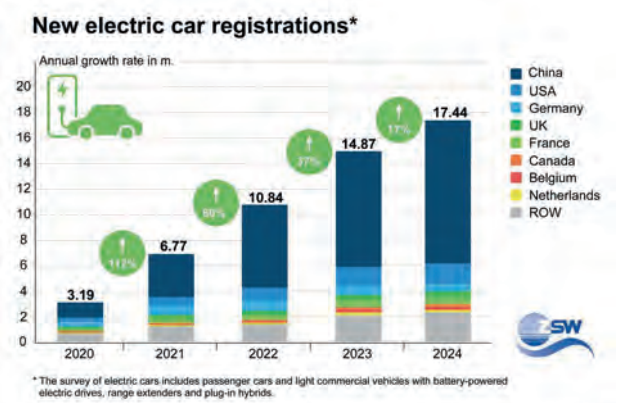
17.4 million new electric vehicles registered in 2024

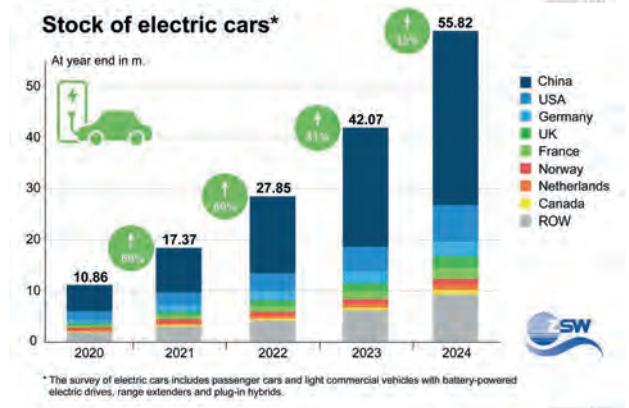
ALMOST 56 million electric cars on the roads worldwide in 2024 and still counting, as the market for electric vehicles sees continued growth but slowing momentum.

There were 17.4 million new electric vehicles registered worldwide in 2024 (electric vehicles running on battery power alone, plug-in hybrids and vehicles with range extenders). This is an increase of 17% on the previous year. China clearly dominates the electric car market with over 11 million new registrations, consigning the USA to second place. Germany secured third spot, just ahead of the United Kingdom. The number of new registrations of electric cars in Germany last year fell to 572,500. This means that there are now 2,619,000 electric cars on German roads, but the ambitious target of 15 million by 2030 is still a long way off. The Centre for Solar Energy and Hydrogen Research Baden-Württemberg (ZSW) has been looking at the current figures on electromobility.

The global count of electric cars at the end of 2024 was 55.8 million. More than half of these vehicles are registered in China, ahead of the USA in second place with 6.4 million electric cars and Germany in third place. Setting aside the Chinese figures, the highest growth rates were seen primarily in smaller markets like Canada with 44% or 254,700 vehicles and Denmark with 46% (154,200 vehicles).

www.zsw-bw.de/mediathek/datenservice.html





Why the Electric Car Grant is a significant opportunity for installers

LEE Sutton, Co-founder and Chief Innovation Officer at myenergi, explores the government's recently announced £650m Electric Car Grant (ECG) and outlines the resulting opportunities for electrical installers.

In July, the Department for Transport (DfT) announced a new grant for electric vehicles (EVs), offering up to £3,750 off the outright purchase price of a new model. With funding confirmed until the end of September 2029, the ECG will apply to a wide range of electric cars priced up to £37,000.

A direct response to the ZEV Mandate consultation, which brought together leading industry voices to identify the biggest hurdles impacting EV adoption, the grant aims to improve the affordability of plug-in vehicles by bringing outright purchase prices more closely in-line with petrol and diesel cars.

Alongside the ECG, further funding has also been announced to improve national EV charging infrastructure. Alongside a £63m package to install 100,000 more public chargers in strategic locations, this includes a £25m fund to improve the at-home car charging experience for those without a driveway. While details are yet to be confirmed, this is likely to see cables run under pavements in domestic areas to enable widespread street charging connectivity.

The opportunity for installers

The ECG provides installers with a significant opportunity. With the UK's EV transition already driving high demand for home charging solutions, the grant will further accelerate this momentum.

Rather than just a short-term trend, millions of EVs hitting the roads over the next decade mean that almost every home in the UK will need access to the latest charging capability. It's therefore a workstream that's here to stay, meaning investing in staff training, knowledge and capability will pay dividends in the future.

With that in mind, installers should act fast to prepare themselves for an uplift in enquiries. Alongside having the technical capability to install and commission smart chargers, an in-depth knowledge of the latest and best models – as well as commercial relationships with these brands – is key to providing customers with the best solutions.

Looking to the future

As the UK market for EVs and EV chargers continues to grow, installers have a significant opportunity to keep motorists moving. With a small investment in time and training, you can play a driving role in the zero-emission transition and for long-term success, partnering with a respected hardware provider is the critical first step.

www.myenergi.com

Defining the future of Thermal Energy Storage Systems

Lucy McKenzie, Head of Technical at MCS, explains how and why the new TESS Standard has been created.

MCS (Microgeneration Certification Scheme) – the UK's quality mark for small-scale renewables that are installed in UK homes and small businesses – has developed a new Thermal Energy Storage Systems (TESS) Installation Standard, alongside its associated Pre-sale Information and System Performance Estimate Standard.

The new MCS Standard for Thermal Energy Storage Systems (TESS) specifies the requirements for installers undertaking the design and installation of TESS (for example a heat battery - which is a type of TESS). Specifically, it is focussed on those that include systems that are designed to supply space heating (with or without the provision of domestic hot water), by storing heat in a medium, where the heat is then later discharged.

Created by industry, for industry

Like all MCS standards, the new TESS Standard has been created in collaboration with a dedicated Working Group, chaired by Tom Lowe.

This Standard has also been developed through collaboration with the industry and the Department for Energy Security and Net Zero (DESNZ) in the hopes to empower more people to adopt this emerging technology.

Future-proofing your career

Now more than ever, people are turning to renewable energy to power their homes. Off the back of a record-breaking 2024, 2025 is on track to become the best year ever for certified installations – with 170,000 in the first six months alone.

A recognised Standard also offers potential through government incentives. A consultation on the Boiler Upgrade Scheme (BUS), which proposed expanding the scheme to include heat batteries has recently closed, with the outcome expected in the coming months. Consumers will also be able to access heat batteries through the £1.3 billion Warm Homes: Social Housing Fund once the Standard is published and Certification Bodies are offering accreditation.

What's next?

The new TESS Standard will now go into its pilot phase, which will take several months as we work closely with installers and Certification Bodies. Once complete, MCS will make any required changes to the Standards. We will provide updates on its development, including how to become certified, in the coming months.

www.mcscertified.com

Power On lights up life at Beechmoor Retirement Village

MULTI-UTILITY and low carbon heat solutions provider, Power On, has completed its work at Beechmoor Retirement Village in Chester with a bespoke substation powering 155 flats on a development worth approximately £36million.

The development, for which the main contractor was Elliott Group, consists of a mix of one- and two-bedroom retirement homes, split across six villas, with a restaurant, café and wellness area. Power On's role was to provide electrical landlord supplies to each of the six villas, as well as an electrical supply to the main Pavillion and a bulk Electric Vehicle (EV) charging supply. The EV charging points will help the development to reach net zero carbon emissions and renewable energy sources were used on site.

Part of the project involved Power On undertaking directional drilling under a large and busy road junction on the A41 in Chester so Power On worked closely with the highways authorities to complete the 109 meters of drilling from the high-voltage connection point to the site, without having to close the road.

Delivering a bespoke X-Type substation

A key technical element of the Beechmoor project was the implementation of an 'X-Type' substation. This is a more complex, non-standard arrangement, usually seen in larger-scale infrastructure settings.

Unlike standard substations, the X-Type requires a bespoke indoor brick-built enclosure to house specialist equipment, including a wall-mounted Solkor protection panel, auxiliary batteries, enhanced monitoring systems and communications interfaces. These additions enable high-voltage network monitoring and increased fault detection capability, providing extra resilience to the supply infrastructure.

Overcoming design uncertainty through collaboration

During the course of this project, SP Energy Networks (SPEN) introduced changes to their internal processes and policies without providing immediate clarification to Independent Connection Providers. This posed a potential obstacle to progress. To address this, Power On's design team engaged directly with SPEN's engineering teams through a series of targeted workshops and discussions.

As a result, new working procedures were established jointly between the respective teams. These ensure smoother, more efficient communication and a clearer path through the design submission process – benefitting both present and future projects.

Oxford heat network has the potential to decarbonise the UK's most iconic buildings with GHNF support

HOME to one of the world's most prestigious collegiate research universities, the Green Heat Network Fund (GHNF) is supporting a low carbon heat network scheme in Oxford that will decarbonise public sector buildings across the city.

1Energy has secured almost £22 million from the GHNF for a heat network powered by 20MW of water source heat pump capacity. The project will provide low carbon heating to a number of Oxford's most historical public sector buildings.

The University of Oxford, Oxford Brookes, Oxford City Council, Oxfordshire County Council and the Zero Carbon Oxfordshire Partnership (ZCOP) are just a few of the major stakeholders that 1Energy is collaborating with to help shape and deliver the project. 1Energy are already moving forward to advance the heat network with plans to begin construction in 2026 following engagement with the local community and securing planning consent.

The project is expected to cut carbon emissions by an impressive 15,000 tonnes a year – a significant step towards Oxford's net zero ambitions. By reducing air pollution, the heat network aims to support a healthier, cleaner environment for those who live, work and study in the area.

The network is also forecast to reduce harmful air pollutants linked to respiratory problems by 5% before 2030. To ensure the project delivers a meaningful impact, 1Energy has established a community benefit task group which brings together major institutions in the city to explore ways the project can support community initiatives, tackle fuel poverty and create local employment opportunities.

Are Power Purchase Agreements a 'risk-free' way to finance renewables?

The UK government's target for a clean power system by 2030 is moving ever closer. However, to ensure this is achieved, a significant amount of energy infrastructure investment and development is needed, meaning considerable funding is required.

THE Contracts for Difference (CfD) scheme has been successful in financing many of the major renewable energy projects that have been commissioned in recent years. However, only a certain number of developers are successful after each allocation funding round, leaving most projects reliant on securing an alternative route of finance – particularly independent energy generation assets, or those installed onsite at commercial and public sector premises.

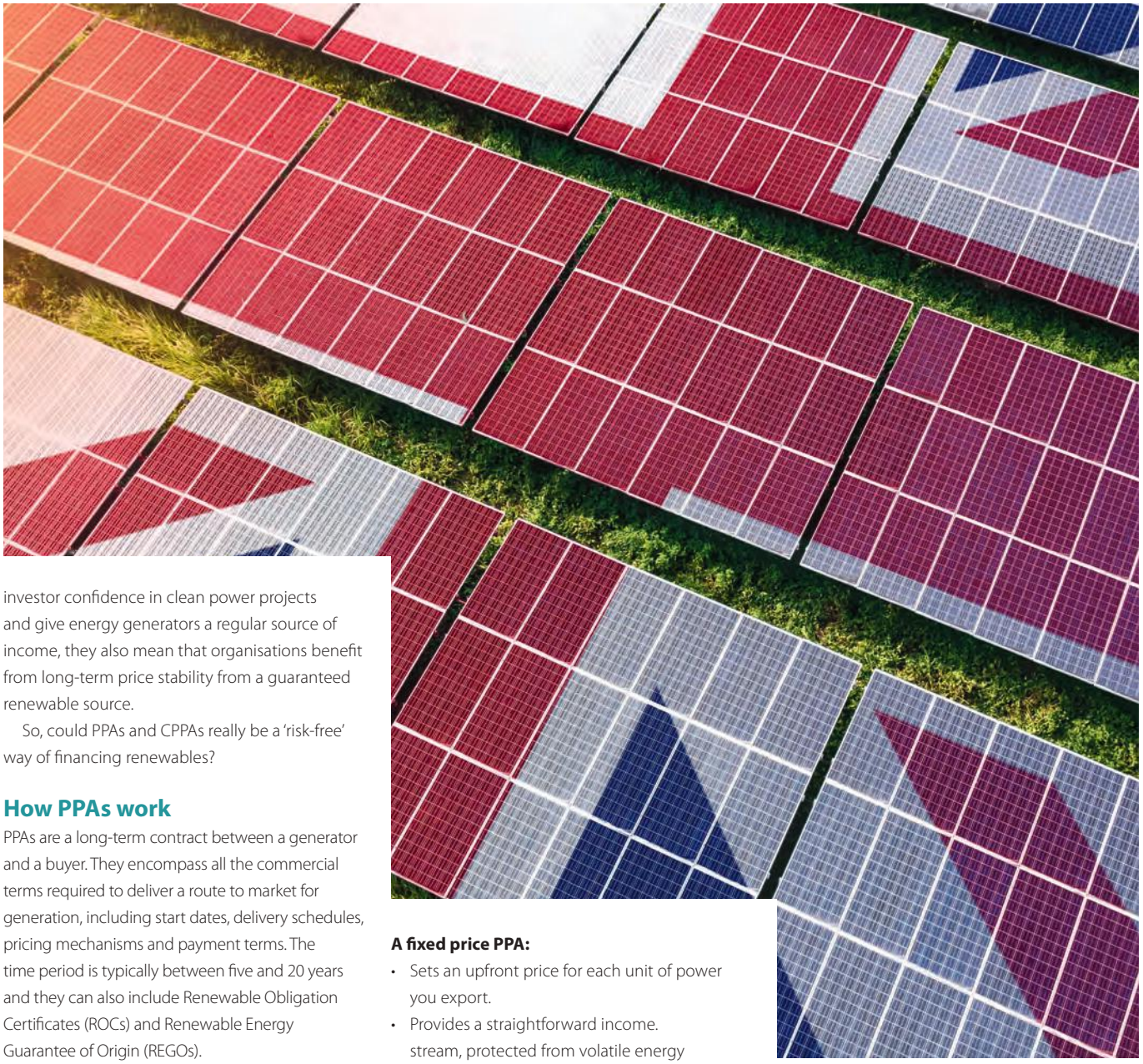
This is where Power Purchase Agreements (PPAs) and Corporate Power Purchase Agreements (CPPAs) are set to play a crucial role. Just to explain the difference, PPAs are made between an energy supplier and a generator, while CPPAs are made directly between a generator and a business.

Vish Sharma, Head of Power Purchase Agreements at npower Business Solutions

Responding to increased business demand for renewables

For renewable installers, the good news is that business demand for clean power is on the rise. In fact, two-thirds of the independent generators (67%) we surveyed in our recent report, *Clean Power 2030: Harnessing the power of the UK's independent energy generators*, said they'd seen an increase in demand from corporates to buy power from independent sources over the previous two years. One in five (21%) also said they are exporting their power to commercial customers, with the majority (58%) doing so through a fixed PPA, while one in five (20%) said they currently use a flexible PPA.

This is where PPAs and CPPAs are increasingly making commercial sense. They not only increase



investor confidence in clean power projects and give energy generators a regular source of income, they also mean that organisations benefit from long-term price stability from a guaranteed renewable source.

So, could PPAs and CPPAs really be a 'risk-free' way of financing renewables?

How PPAs work

PPAs are a long-term contract between a generator and a buyer. They encompass all the commercial terms required to deliver a route to market for generation, including start dates, delivery schedules, pricing mechanisms and payment terms. The time period is typically between five and 20 years and they can also include Renewable Obligation Certificates (ROCs) and Renewable Energy Guarantee of Origin (REGOs).

Getting the most from a PPA

The PPA market has evolved considerably over the past few years and the PPAs currently available have been developed to provide generators with multiple options so more of their energy can be procured by corporate energy buyers. The energy market is constantly changing, which naturally leads to more innovation in the way PPA contracts are developed.

The best choice of PPA for a renewable generation asset will depend on a number of factors. These include the level of a generator's annual output, the nature of their generation source, their risk appetite and ultimately, whether they want a steady and risk-free revenue stream or wish to optimise profits with a flexible agreement.

However, for those owners and operators that are new to energy generation, or a new to selling their power, looking at the relative benefits of a fixed or flexible PPA is a good place to start.

A fixed price PPA:

- Sets an upfront price for each unit of power you export.
- Provides a straightforward income. stream, protected from volatile energy market fluctuations.
- Offers competitive prices with the reassurance of regular, reliable payments.
- Has agreed prices for typically between six-36 months.
- Is typically suited to smaller asset portfolio holders looking to cover their own overheads and sell the excess power.

A flexible PPA:

- Gives the generator control – the ability to determine when and how much power is sold over the course of the contract.
- Tracks the wholesale energy market to capitalise on price peaks and high demand.
- Allows generators to benefit from real-time guidance.
- Is ideal for generators with larger or growing assets.
- Has the option of sophisticated flexible agreements for more advanced seller.

Financing our renewable future

While there are naturally risks associated with any investment, the long-term price stability provided by PPAs and CPPAs are making them very attractive to both generators and businesses.

They will also be a crucial financing mechanism for new renewable generation if the UK is to achieve its clean power target by 2030 and its broader net zero ambition by 2050.

For installers, the growth in renewable energy capacity – whether that's major grid-scale projects, independent assets on agricultural land, or onsite generation on commercial or public sector premises – is a huge opportunity.

This is why the government needs to ensure that the PPA and CPPA market is in the best position possible to support this by making them a key part of future energy policy.

www.npowerbusinesssolutions.com

The Great British Energy Act 2025: a role for IDNOs in delivering clean energy infrastructure

By Suzanna Lashford, Head of Business Development, Vattenfall IDNO

THE Great British Energy Act 2025 marks a significant moment for our energy system. It establishes Great British Energy (GBE) as a publicly owned company to accelerate the development and distribution of clean energy. At a time when the government is under pressure to deliver on its 2035 clean power commitment, the Act provides a strong strategic direction.

But strategy is one thing – delivery is another. And that's where I believe Independent Distribution Network Operators (IDNOs) have a vital role to play. While we're not mentioned directly in the Act, several provisions – along with wider energy policy – point to a clear opportunity to better utilise the expertise and capacity of regulated IDNOs to support the UK's energy transition.

Delivering clean energy infrastructure at pace

One of GBE's core functions is to facilitate the distribution of clean energy – an ambitious objective that will demand timely, localised infrastructure development. That means connecting new renewable generation, energy storage, electrified heat and transport infrastructure to the grid, often at the distribution level.

As an IDNO, I know we have a unique ability to deliver this kind of infrastructure quickly, efficiently and without drawing on public funds. At Vattenfall IDNO, we're already partnering with developers across the UK to connect renewables and low-carbon technologies. By engaging IDNOs more systematically, GBE could scale its impact without duplicating capabilities that already exist in the market.

Building partnerships for progress

The Act gives GBE the authority to enter partnerships with private firms, local authorities and international investors – subject to government approval. This creates exciting scope for new models of collaboration, where each party contributes capital, expertise and delivery capacity to shared energy goals.

Suzanna Lashford, Head of Business Development, Vattenfall IDNO

GBE doesn't need to build everything itself. In fact, there's more value in developing collaborative frameworks where publicly owned strategy aligns with private sector delivery. As an IDNO, we're already investing significantly in regulated network assets and our long-term ownership model aligns closely with national objectives.

Beyond the Act, the wider policy landscape also reinforces the role we can play. The Energy Act 2023 introduced a formal net zero duty for Ofgem, requiring it to consider how its actions support the UK's climate goals. It reflects a welcome shift in thinking – acknowledging that this is a whole-system challenge and one that needs more than just the traditional players.

Unlocking capacity through competition

Net-zero is, at heart, an infrastructure challenge and we need a broad mix of capable actors to deliver at scale. As IDNOs, we bring competition, innovation and financial efficiency to network deployment. We're tightly regulated and our delivery models are well proven. That makes us natural partners for a system under pressure to decarbonise at speed.

Another significant shift came with the Energy Act 2023's introduction of competitive tendering for onshore transmission networks – a space previously dominated by incumbents. While this reform is specific to transmission, it points to a wider trend: opening up energy infrastructure delivery to a more diverse group of qualified participants. At the distribution level, IDNOs are already active and can do much more.

It's a pragmatic evolution. The transition to a low-carbon system simply can't be delivered through monopoly models alone. Competitive tenders will drive innovation and efficiency – and GBE can help lead this change by encouraging a wider base of delivery partners.

Making ambition a reality

Recently, the Environmental Audit Committee warned that the UK risks missing its clean power targets unless we tackle grid connection delays and network constraints. They called for greater transparency and faster infrastructure investment.

These aren't abstract problems – I see them affecting projects today. We need to broaden the pool of organisations that can deliver regulated infrastructure, especially at distribution level. GBE has the opportunity to lead that conversation by bringing IDNOs into the fold and enabling more joined-up delivery.

The Act sets out the vision. Now comes the execution and that means drawing on the full strength of the energy sector. While IDNOs may not be named in the legislation, the opportunities for alignment are clear.

The UK has the ambition and the policy direction. Now we need to focus on delivery. IDNOs are ready – with the regulatory status, the investment capability and the track record to make a meaningful contribution. I stand ready to support GBE and the broader system in meeting the challenges ahead.

www.vattenfall.co.uk

Government's new Industrial Strategy sets out route to establish a British heat pump manufacturing sector

By Tamsin Lishman, CEO of British ground source heat pump manufacturer, Kensa

AS the CEO of one of the UK's largest heat pump manufacturers, it will be no surprise that I want to see UK-made heat pumps dominate the market. In the words of the Chancellor at the Spending Review, "where things are made and who makes them, matters." In my own sector, it matters first and foremost because the UK is set to have Europe's largest heat pump market, but to date, has done its level best to deter investment in manufacturing capacity.

It would be madness to create such a substantial market and miss the economic opportunity to supply this domestically. Critically, with some 5,000 jobs in boiler and related manufacturing in this country, a failure to develop a corresponding large heat pump manufacturing sector will not just mean a lost economic opportunity, but a net economic loss. Net zero has rightly been sold as not just an environmental necessity but as an economic opportunity, the defining industrial opportunity of the century. These words will ring hollow, presenting an open goal to those seeking to undermine net zero, if we see long-standing manufacturing jobs phased out to meet targets and replaced by imports instead of new, green, domestic jobs.

Historically, while there has been much focus on policies to drive demand for heat pumps, there has been very little on developing a UK manufacturing base. True, there was the £30 million Heat Pump Industrial Accelerator (HPIA), but with so little certainty on heat policy in recent years, heat pump manufacturers, including my own, lacked the confidence to invest.

There are many factors that determine where to locate manufacturing, but the size of the local market for your products is usually at the top. Bold ambitions were set out in the 2021 Heat in Buildings Strategy to create that market, but virtually none were delivered. This created deep uncertainty about the future size of the UK heat pump market, a terrible state of affairs when considering long-term manufacturing investments. Two years on from the launch of the HPIA, unsurprisingly, less than a third of the money has been awarded.

Tamsin Lishman, CEO of British ground source heat pump manufacturer, Kensa

Investment

This investment picture is all the more frustrating given that the UK is ideally suited to develop a major heat pump manufacturing sector. With almost 20 million boilers to replace by 2050, the UK will ultimately have a huge heat pump market. We also have a skilled and established boiler and air-conditioning manufacturing sector that can transition at a relatively low cost. At present, there is significant global undercapacity in heat pump manufacturing worldwide, which justifies investment in new capacities in new markets. But the longer the UK leaves it to create the conditions to attract that investment, the more capacity grows elsewhere and the weaker the case for investment in new UK facilities. The next five years are key for heat pump manufacturing investment; fail now, and I believe the opportunity will pass us by.

I am cautiously optimistic that the government's new Industrial Strategy, with its plan for the clean energy industries setting out specific steps to support heat pump manufacturing, represents a turning point for our sector and the government's approach to it. While many of the actions have been bouncing around Whitehall for years, (Future Homes Standard, certainty of support schemes, energy price rebalancing), the specific inclusion of heat pump manufacturing in the strategy is a recognition of the sector's potential to deliver major growth and investment and of the government's desire to deliver it. Critically, here is a clear statement of the government's determination to ensure heat policy decisions are made in a manner that supports industrial growth.

Strategy for growth

In linking its major heat policies with its strategy for industrial growth, the government has publicly recognised the relationship between the two. This may sound like a small step, but for a manufacturer wanting to invest and expand, Kensa has consistently been frustrated by policy delays and cancellations. Each year's delay, when considered purely from a heat pump deployment perspective, may not seem like the end of the world, but it can genuinely be the difference between manufacturing investment coming to the UK or going elsewhere.

The new Industrial Strategy demonstrates that the government understands these points and has the ambition to act on them. The coming months will be a critical test of its ability to do so, with the long-awaited publication of the Warm Homes Plan and the Future Homes Standard, along with long-promised consultations on energy price rebalancing and the role of hydrogen. Get this right, with no further delays, and I am confident next year's Heat Pump Investment Accelerator competition will be a decidedly more competitive affair than the last.

www.kensa.co.uk

The potential of battery storage: opportunities for electrical engineers

Mark Krull, Director at LCL Awards, explores how battery storage is set to become a vital part of the UK's energy future and how electricians can position themselves to take full advantage of the shift.

DESPITE the increasing emphasis on renewable energy solutions, the adoption of battery storage remains surprisingly low. This presents a significant opportunity for electrical engineers to lead the charge in integrating these systems into both residential and commercial settings.

As the UK focuses on decarbonisation of our electricity supply, batteries have quietly slipped under the radar. Despite headline-making solar farms and offshore wind projects, the UK's deployment of battery storage remains low. Meeting carbon reduction targets presents a real opportunity for electrical engineers, with batteries a key tool in creating a stable and cost-effective energy future.

The case for battery storage

Battery storage, or electrical energy storage systems (EESS), offer benefits that few other technologies can match, enabling homeowners and businesses to store surplus renewable electricity and/or charge up with cheaper, off-peak electricity to be used when prices spike – shielding end-users from price swings driven by volatile market rates or unexpected outages. Reducing reliance on the grid results in increased energy independence.

From a grid perspective, distributed battery storage helps level out peaks and troughs in electricity supply and demand. By discharging during periods of high usage, batteries reduce strain on the grid, minimising the need for costly infrastructure reinforcements and serving to enhance grid stability by flattening load curves.

Combine and save

The ideal setup for a low carbon future is to combine battery storage with other complementary green technologies, such as solar PV and EV charging, ensuring cost savings for the end-user and a pipeline of stable work and career prospects for the electricians who choose to upskill.

Apart from the benefits of generating your own power through solar PV, further savings can be made through specialist EV charging tariffs, for example, which will give you five to six hours charging at roughly one third the normal price, usually overnight. If you charge a battery when costs are low, it can shoulder the burden during peak times, reducing energy bills overall.

Empowering electricians

Increasingly, homeowners and businesses will be looking for ways to remove themselves from pricing instability and move closer to net zero, battery storage is a key part of this process and offers a bright future, not only for the buildings that can be decarbonised, but also for the installers trained to facilitate its deployment.

For electrical engineers, this opens up a new set of challenges – optimising system sizing, integrating energy management software and ensuring compliance with developing safety standards.

Upskilling into these technologies and adopting a consultative approach, electrical engineers can position themselves as a trusted energy adviser – strategically more valuable than a one-off installer. The role of the electrician here is to frame storage as both a resilience measure. The work is there – from standalone to fully integrated smart home energy systems – and the increasing energy needs of the future must be met by skilled professionals.

Advancements in training

To capitalise on these opportunities, the industry must upskill. Many training providers have partnered with battery manufacturers to develop specialist courses covering what you need to know – electrical safety, IEC and EN standards, best practices commissioning protocols and software configuration. These modules blend educational theory with hands-on experience, equipping professionals with the skills necessary for proficient battery storage system installation and maintenance.

Future outlook

Battery storage is a key piece of the future energy jigsaw puzzle, and electrical engineers are in the perfect position to make the most of this growing market. Improvements in lithium-ion technology means batteries are getting lighter and, in time, costs should come down. Newer types of batteries – like solid-state, sodium ion and flow batteries – are also on the horizon, offering better performance and longer life. These improvements will make battery storage more accessible to many more people.

At the same time, smart energy management tools will be sophisticated enough to be able to calculate how much energy a home or building needs, how prices will change and how much solar power will be available. This will aid systems to run more efficiently without needing constant input from the user. Batteries are becoming easier to install, with simple, modular designs that reduce setup time and complexity.

Put together, these changes mean we'll see a huge rise in battery storage across homes, businesses and the wider grid by 2030. Electrical engineers can help customers understand the benefits, design the right systems and stay up to date with the latest developments and safety compliance. It's a bright future for battery storage and those acquire the understanding and skills to deliver them.

The LCL Awards Level 3 battery storage course is available from locations throughout the UK.

www.lclawards.co.uk

> "Battery storage is a key piece of the future energy jigsaw puzzle, and electrical engineers are in the perfect position to make the most of this growing market."

Power in Partnership: Hometree

Why the UK's Smartest Renewable Installers are Joining Hometree - and why you might be next

Hear what their existing installers have to say

"I have spent 14 years building my business and I didn't want to hand the keys over and exit - I still feel there is a huge amount of value to be created. That's where Hometree came in. I am still in control of the day-to-day, but I know I have a team of growth experts in my corner, helping with everything from lead generation to financial reporting and recruitment. I feel we now have the tools to really accelerate our growth and do what we do best - design and install exceptional systems for our customers. My transaction with Hometree wasn't an exit, it was an upgrade"

- Rob Carey, MD, GreenGen UK

The residential energy transition is accelerating, and so is competition. Against that backdrop, many successful owner-managed installation businesses are asking the same question: *Who can help me scale, de-risk, and still protect what I've built?*

Hometree offers a compelling answer. Below, we explore why an ever-growing roster of renewable hardware installation specialists have chosen to become part of the Hometree family-and why you may want to do the same.

Your Challenge	How Hometree Helps
Lead flow & marketing ROI	**Free leads and performance marketing** from Hometree's digital channels keep your installation teams busy all year round
Rising customer expectations	**Best-in-class technology, sales journey optimisation** and **training,** help you streamline sales, surveys, installs and after-care support
Access to finance for homeowners	**Hometree Finance** is purpose built for green tech, giving homeowners affordable all-inclusive installation, monitoring and repair packages with 0% upfront and payments starting as low as £75 / month. **For Installers,** this translates into: **higher conversion rates** and **bigger job values,** fast and **reliable payments** direct from Hometree, **seamless digital journey** that reflects well on your company
Recruiting and retaining talent	Centralised **recruitment and HR support** plus an employee participation programme keep your workforce motivated
Diversifying into new tech	Engineering know-how and capex support **help you expand** into solar heat-pumps, batteries or EV charging at pace
Managing supply chain cost	**Scale matters**. Hometree **unlocks purchasing power**, brand recognition and the capital required to access the best procurement deals, invest in new technology, training and marketing is hard for a local firm to fund alone
Strategic direction	**Group wide knowledge sharing** helps us share what works and what doesn't, creating a **best practice blue-print** for all installers in our family.

Who are they and where have they come from?

Hometree is a fast-growing residential energy services company offering a comprehensive suite of services, including home emergency cover, renewable energy installations, and green financing solutions. Starting life in 2015, they have already become the **4th-largest player in the UK home-cover market, trusted by 100,000+ customers and supported by a nationwide network of 5,000+ multi-trade engineers.**

Ten acquisitions, including four renewables companies last year, have further bolstered their momentum. Hometree really is on a mission to lead the transition to low-carbon, energy-efficient homes.

How does Hometree help you?

Hometree is acquiring the best renewable installation businesses in the UK, helping them overcome key challenges to become bigger and more efficient. The upshot: **You keep operational autonomy** and your local relationships, while Hometree provides the firepower to help you **grow faster, reduce risk** and unlock extra profit for shareholders.

What a Transaction Looks Like

- **Flexible deals** - tailored deal structures to ensure full alignment of everyone involved
- **Speed and certainty** - an experienced in-house M&A team led by sector specialists
- **Hands-on integration** - from software migration to back-office support, your team is never left to figure it out alone.

Ready to Explore Your Options?

If you are an owner or shareholder looking to secure the next stage of growth and get paid for value you have created, Hometree wants to hear from you. Scan the QR, or contact Olly Cutting at **olly.cutting@hometree. co.uk** to start a confidential conversation today. Together, we can accelerate Britain's journey to low-carbon living-and take your business to new heights.

Solar & Storage Live UK 2025

The UK's Largest Solar & Energy Storage Exhibition Returns to Birmingham

Solar & Storage Live UK 2025 returns to the NEC Birmingham from 23-25. This is the one place where you can truly grasp the opportunities and capitalise on the market's momentum. Visitor registration is now open, get your free ticket now and don't miss out!

Solar, Storage & EV Charging is growing fast

The UK renewable energy market is reaching unprecedented heights.

- As of July 2025, solar PV capacity exceeded 19 GW, spread across 1.8 million installations and climbing by over 1 GW year-on-year.
- In the battery storage sector, 8.4 GW of applications were submitted in Q2 2025 alone - double the amount seen in the same quarter of 2024.
- At the same time, the UK had about 73,000 public EV chargers installed by the start of 2025, on track toward the government's goal of 300,000 public charge points by 2030.

This simultaneous momentum across solar, storage, and EV charging infrastructure presents installers with a landscape flush with opportunity - but only for those equipped to capitalise on it. This is why you should visit Solar & Storage Live UK 2025.

New features, new opportunities

This year, Solar & Storage Live UK is better than ever with brand-new features designed to help installers like you grasp the opportunities and stand out from the competition.

Co-located with EVCharge Live UK

For the first time, Solar & Storage Live UK joins forces with EVCharge Live UK, bringing you the entire clean energy cycle under one roof. From solar PV and battery systems to EV charging infrastructure and smart grid solutions, you'll find 500+ global suppliers showcasing the very latest technologies.

100+ Hours of Knowledge and Training

Get up-to-the-minute insights from the people shaping the future of the industry. Across seven theatres, you'll hear from market leaders, policymakers, and technical experts delivering over 100 hours of sessions. From best-practice case studies and certification guidance to financing models and investment opportunities, every session is designed to give you practical takeaways.

Highlighted Keynote Speakers include:

1. Sharon Thompson, Deputy Mayor of the West Midlands Combined Authority
2. Harry Mayhew, Deputy Director, Department for Energy Security and Net Zero
3. Chris Hewett, Chief Executive, Solar Energy UK
4. Josh King, Chair, Solar Energy Scotland
5. Ben Godfrey, Director of Distribution System Operator, National grid
6. Tim Humpage, CEO, British Solar Renewables
7. Rob Gilbert, Director of Supply Chain, Great British Energy
8. Darren Brown, Commercial Director, GivEnergy
9. Justin Claxton, Co-Founder and VP, Fox ESS
10. Baroness Luciana Berger, Chair, Energy Storage Association (UK)

Start-up Zone & Pitch Competition

Looking for the next game-changer? The Start-up Zone brings together the most exciting innovators in solar, storage, and EV. From breakthrough products to disruptive business models, you'll see where the future is headed. Don't miss the live Pitch Competition - your chance to discover potential technology partners, collaborators, and even investment opportunities before they hit the mainstream market.

Installer Training Hub

Take your technical expertise to the next level. The Installer Training Hub offers hands-on, practical sessions covering Solar PV Modules and Mounting, Battery Storage Systems, and Inverter installation and commissioning. Learn directly from leading manufacturers, handle the latest products, and sharpen your skills alongside fellow installers. Spaces are limited - register for your free expo ticket now and book your training sessions in advance through the Solar & Storage Live App.

Recruitment Zone

The renewable energy sector is booming, and demand for skilled professionals has never been higher. At the Recruitment Zone, hiring businesses will showcase live job opportunities across all levels - from entry-level roles to senior positions. Installers can explore career progression, while employers can connect with fresh talent.

Unrivalled Networking

The UK installer community comes together here like nowhere else. Over three days, you'll have the chance to connect with 20,000+ industry professionals at free-to-attend networking events and meet-ups. Share insights, build partnerships, and exchange ideas with leading installers, manufacturers, investors, and policymakers.

DON'T MISS OUT - REGISTER NOW FOR FREE

SOLAR & STORAGE LIVE UK 2025

Date:
23-25 September (Tuesday to Thursday)

Time: 9:30am to 5:30pm (Tuesday & Wednesday); 9:30am to 4pm (Thursday)

REGISTER NOW:

https://www.terrapinn.com/ssl-uk/rei-ticket

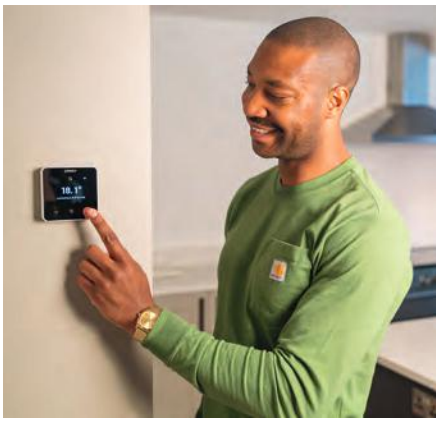
Smarter together: Integrating heat pumps with solar for the Future Homes Standard

By Will Heinzelmann, Product Director at Passiv UK

THE Future Homes Standard is setting a bold and necessary direction for the UK's housing sector. Under the new rules, new-build homes will be required to include solar panels where possible – a welcome step toward reducing carbon emissions, tackling fuel poverty and lowering household energy bills. Beyond this, solar energy will play a crucial role in ensuring the long-term security of supply.

This presents a clear opportunity, but also a new challenge. Simply fitting solar panels and heat pumps to meet compliance is no longer enough. To truly deliver high-performance homes, we need to ensure these technologies work together, smartly and seamlessly.

Today's new builds often include a combination of solar PV and heat pumps. But without intelligent controls that connect these systems, homeowners are missing out on the full benefits. Real value comes not just from having the right technologies, but from ensuring they function as a cohesive, well-orchestrated system.



Smart heating controls

That's where the latest generation of smart heating controls comes into play, such as the Passiv Smart Thermostat. Designed to make integration effortless, it intelligently manages heat pump usage to align with solar generation – automatically and without the need for extra hardware or added cost.

Using predictive algorithms, the system knows when solar panels are likely to be generating electricity and adjusts the heat pump to run at those optimal times. This helps users reduce their heating bills by up to 10%, simply by making better use of what their homes are already producing.

Meeting the Future Homes Standard is about more than meeting regulatory requirements. It's about building homes that are greener and smarter – shifting from a component mindset to a system approach and ultimately delivering energy solutions that work harder and more efficiently for homeowners.

www.passivuk.com

Unlocking the skills to power a greener future

By Simon Ayers MBE, Chief Executive Officer of TrustMark

THE UK's path to widespread adoption of energy efficiency and low carbon home improvements is not short of ambition. We have the vision, the technological innovations and the political momentum to transform our homes and communities with clean energy. Yet, beneath the surface of this bold national aspiration lies a critical and increasingly urgent challenge: we simply don't have enough skilled people to do the work.

TrustMark's recently published Skilled to Build report, based on the insights of over 1,200 small and micro businesses, lays bare a worrying truth: 79% of renewables firms are currently facing vacancies, and 42% report severe skills shortages. These figures don't just represent workforce gaps, they represent real barriers to the installation of air source heat pumps, solar PV, insulation and other key components of the UK's decarbonisation strategy.

In this article, Simon Ayers explores the barriers holding the clean technology sector back and outlines four pragmatic actions that, if taken now, can unlock the workforce potential we need to power a greener, more prosperous future.

Accessing opportunities provided by new technologies

Small and micro businesses are the bedrock of the UK's Repair, Maintenance and Improvement (RMI) and construction sectors. They make up 95% of the RMI sector, employing over a million people across the country. Firms installing clean technologies are struggling to find qualified staff, despite the long-term security and pay that careers in this sector can offer.

Compounding the challenge is the age profile of the existing workforce. A staggering 44% of workers in the RMI sector are over the age of 55, with nearly a quarter planning to semi-retire or leave the industry in the next three years.

Many of these businesses lack succession plans, meaning up to 39,000 firms could disappear from the sector in the next decade. We are not just running short on workers. We are running out of time.

Barriers to progress

What's holding us back from building this workforce? Our research uncovered three main bottlenecks:

1. **Burdensome bureaucracy**
   44% of businesses cite complex paperwork and processes as a barrier to hiring and training. Nearly 40% face similar hurdles when trying to recruit apprentices. The administrative burden is particularly hard on smaller firms without in-house HR or legal departments.

2. **Lack of access to quality training**
   Apprenticeship schemes – crucial pipelines for new talent – are underutilised and underperforming. Only 34% of businesses surveyed had hired a young apprentice in the last three years and completion rates for construction apprenticeships have fallen sharply (from 55% in 2017/18 to just 35% in 2022/23).

3. **Underutilised financial incentives**
   Despite the availability of support like the Apprenticeship Levy and funding from the Construction Industry Training Board (CITB), awareness and access remain low. Only 7% of businesses surveyed had used the Apprenticeship Levy, and just 21% accessed CITB funding. The flat £1,000 grant for hiring an apprentice is widely viewed as inadequate.

In a sector already stretched by tight margins and short-term job pipelines, these barriers have an alarming effect on recruitment and training. Unless addressed, they will continue to undermine the industry's ability to scale up for the transition to more energy efficient technologies.

Unlocking a greener workforce future

We believe the solution is not to create entirely new systems, but to better join up and strengthen those we already have. Based on the views of the businesses we surveyed, we are calling for a four-part action plan:

- **Incentivise retraining and integrate trades into the curriculum**
  We must embed clean technology skills into the DNA of our education and training systems. This starts in schools, where trade careers should be treated with the same respect as academic or office-based roles.

  Subjects like woodwork, metalwork and renewable energy systems should be reintroduced and modernised within the curriculum. Trade professionals, many of whom are nearing retirement and willing to give back, can be mobilised to mentor young people, deliver career talks and even co-develop course content.

  At the same time, colleges and training providers need support to modernise courses and offer pathways into green technologies that are visible, accessible and aligned with industry needs.

- **Simplify the recruitment process for small firms**
  We need to create a respected, easy-to-use facilitation service that connects businesses with candidates who have been trained and vetted. This service should include:
  - Templates and toolkits for onboarding and compliance.
  - 'Try-before-you-buy' schemes to trial new recruits.
  - Centralised databases for qualified candidates.

  This system could be co-developed with the Department for Education and Department for Business and Trade, in collaboration with TrustMark, CITB and other industry leaders.

- **Raise awareness and access to training incentives**
  There is no shortage of funding – only a shortage of accessibility. It is vital that more is done to promote these schemes and simplify the process for accessing them. That includes revisiting the use of unspent levy funds and ensuring smaller businesses – who lack bid-writing teams – can benefit without red tape.

- **Build clean tech skills by upskilling the existing workforce**
  We don't need to build a new renewables workforce from scratch, but we do need to transition and upskill the one we already have. With the right training and financial support, traditional trades like plumbing, heating and electrical installation can adapt to deliver modern low carbon systems.

Our survey shows that 44% of businesses are willing to retrain but need financial help to do so, and 20% want dedicated training centres for renewables. If the government can kickstart consumer demand through incentives and regulation, the market will follow and so will the skilled jobs.

From skills gap to skills revolution

We have the data and we have the industry will, so what we need now is urgent, co-ordinated action to overcome the workforce barriers to net zero. This is not about throwing more money at the problem, it is about joining up the dots by connecting education, funding and businesses in a cohesive system that works for small firms as well as large.

With focused investment in skills and smarter support for the workforce we already have, we can unlock the economic and environmental potential of the green transition. At TrustMark, we stand ready to help facilitate that transformation. Let's not allow a skills gap to stall our progress. Instead, let's build a skilled, competent and confident workforce so we are ready to power the homes and technologies of tomorrow.

To read the full report, visit **www.trustmark.org.uk/pages/skills-gap-research**

PV Installers – Key Drivers of the Energy Transition in the United Kingdom

By Saif Islam, Senior Consultant at EuPD Research since 2011, who has contributed to most of the company's PV and energy studies while working closely with installers and major manufacturers. His expertise spans market research, competitive analyses, lead generation, and international consulting projects.

SOLAR & STORAGE LIVE UK 2025

PV installers are one of the most essential parts in the renewable energy industry, as they are the vital link between the industry and the customer. They detect trends ahead of everyone and translate them into practical solutions for homeowners and businesses seeking clean, affordable energy. If convinced of new technologies and services, they play a decisive role in enabling them in their respective markets.

Recognizing their importance, EUPD Research made it their mission to better understand and support these key market intermediaries, and to provide manufacturers and other essential stakeholders with actionable insights. For the past 18 years, EUPD Research has been surveying PV installers on industry trends, procurement strategies, and brand perceptions. The resulting publication, the PV InstallerMonitor | EES InstallerMonitor, has become an indispensable resource for aligning products and services with reals market needs, while also enabling installers to learn from their peers, grow their businesses and expand their client base.

UK PV Market – From Setback to Growth

The latest survey of PV installers in the United Kingdom offers fresh insights into current market demands, and today, EUPD Research is pleased to share some of these findings.

The United Kingdom is one of Europe's most dynamic PV and storage markets. In 2016, it was the leader in Europe in terms of new installations, but subsequent political decisions (Brexit not even being the most influential) triggered a steep market decline. However, a few years later, the United Kingdom is again at the forefront of PV in Europe, and one of the few major markets expecting growth this year.

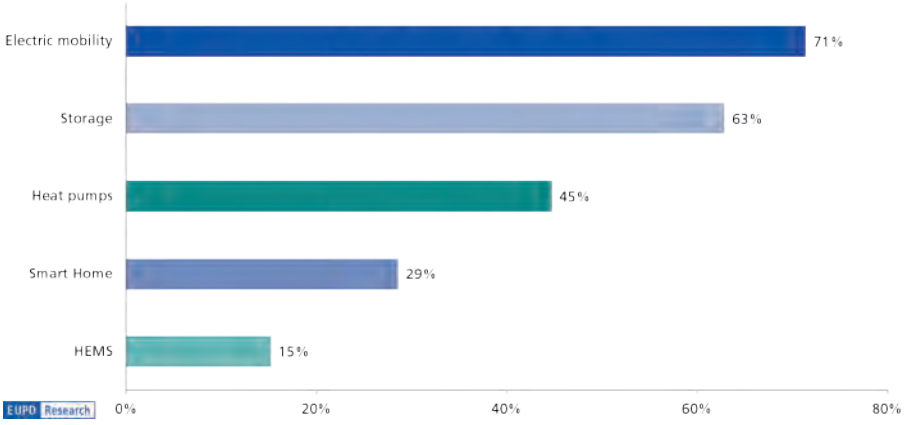
Over the last few years, utility-scale and large ground-mounted PV plants have become the dominant PV sector in the United Kingdom. The residential segment, another major PV segment in the UK, has experienced a slight decline in installations in 2024, yet data from the first half of 2025 indicates an upward trend – underlining the importance of small and medium-sized installation companies.

For the 2024/2025 PV InstallerMonitor | EES InstallerMonitor study, EUPD Research interviewed 105 PV installation companies in the UK, ranging from high-volume operators to smaller businesses, including dedicated solar installers, electricians, roofers, and others. While most focus on the residential installations up to 20 kW, a clear trend is emerging toward small commercial projects and larger-scale systems.

Installers as Enablers of Sector Coupling

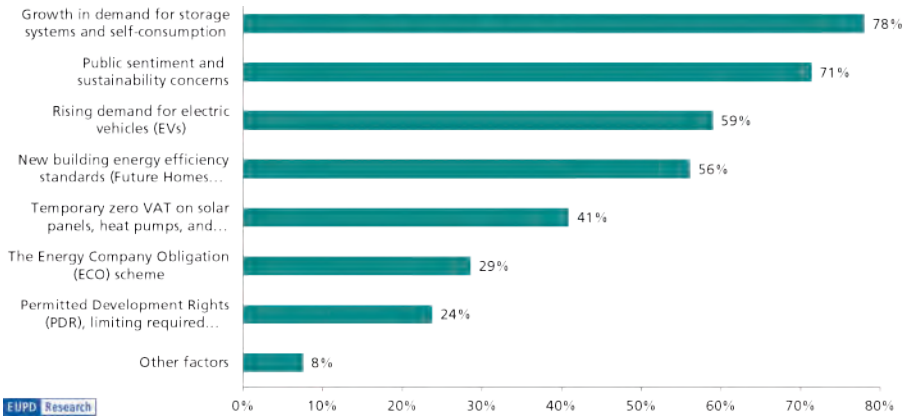
Over the years, UK PV installers have evolved into key enablers of sector coupling—bringing together the core pillars of the energy transition: energy, heat, and mobility. The latest survey results show that 71 % of installers offer electric mobility solutions to their customers. In comparison to the previous year, the share of installers including heat pumps—a crucial link between renewable electricity and sustainable heating—has jumped from 31 % to 45 %. Smart home applications remain at around 30 % and continue to play a role in energy management offerings.

Further technologies in portfolio

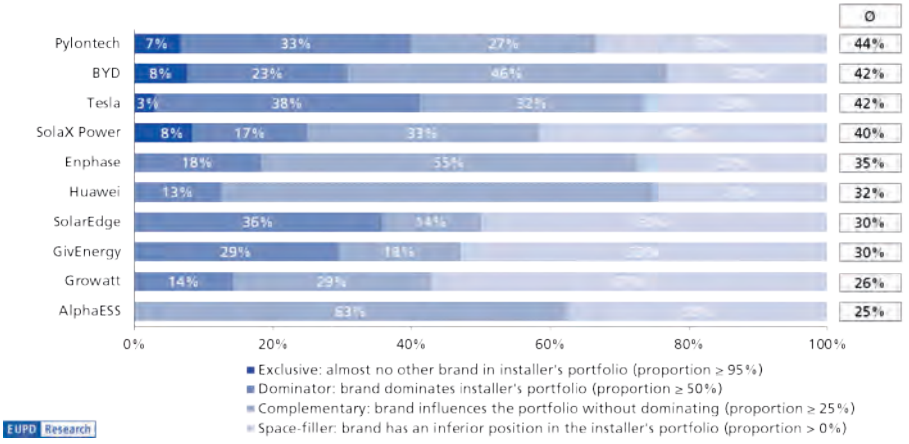


Interestingly, one of the trends visible throughout most of the surveyed markets also applies for the United Kingdom: installers see the growing demand for storage and self-consumption as the main driver of rooftop PV demand. In other words: whilst storage once "piggy-backed" on PV, the roles have now reversed, and underscore the growing role of storage solutions in the energy transition. Installers' portfolios reflect the growing adoption of the storage technology in the UK – particularly in UK homes, as 63% of the surveyed installers already offer storage in their portfolio, and a further 26 % want to include storage by the end of the year, which equals close to 90 % of the UK installers invested in energy storage.

The diversification is a strong indicator that PV installers are broadening their scope to reach out to a larger target group, and even existing PV customers. Due to the tumultuous market developments, installers are facing various challenges. The majority of the British installers benefitted from the price decline for components, stating that they were able to offer more competitive prices for their customers, and thus increased sales. Merely 7% claimed that they felt negative impacts through the price decline, as it led to more competition for their business in the market, and a tougher case to justify higher prices for premium products.



Main drivers for rooftop PV

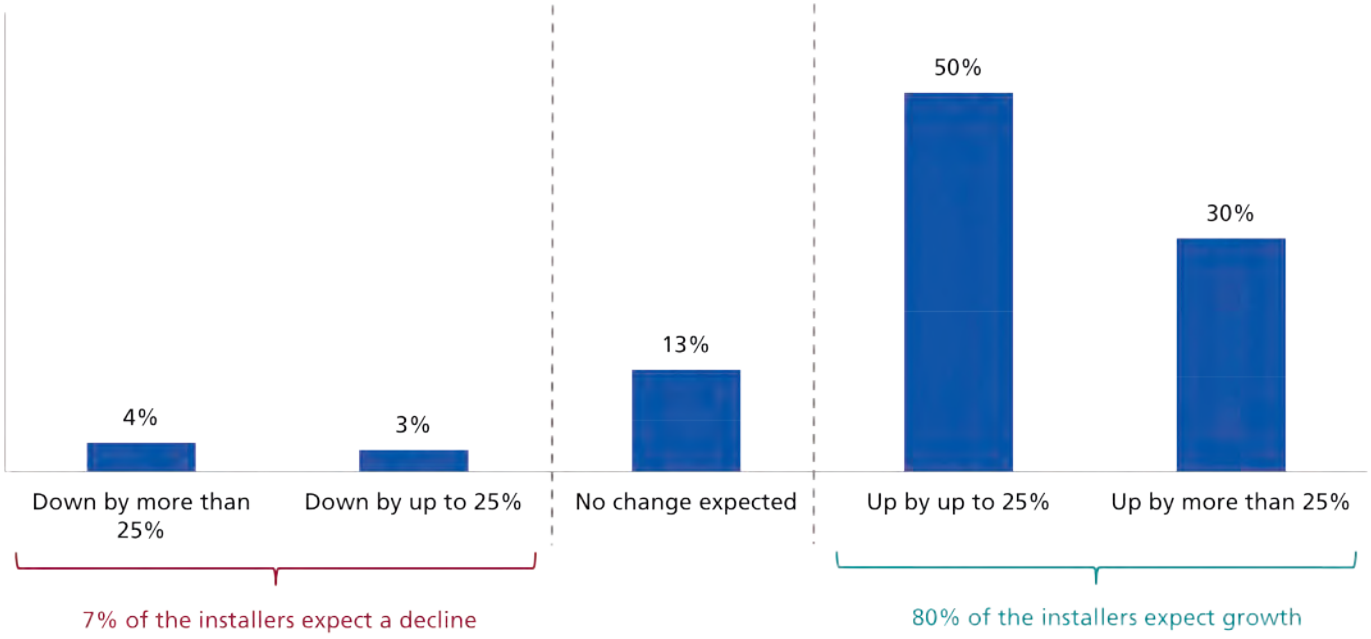


Distribution depth of storage system manufacturers

Procurement Trends – Wholesale Still Dominant and Steering the UK Brand Landscape

Meanwhile, the United Kingdom has always been a strong wholesale market, with the indirect procurement channel playing a dominant role in the supply of modules, inverters, and storage systems. For inverters and storage systems, indirect procurement remains stable at around 80 %. However, the survey results indicate an interesting development in module sourcing: the share of installed capacity procured via wholesalers has fallen from 86 % to 79 % over the past two years, and now stands at 68 %. Segen remains the leading wholesaler by far, and in terms of storage reaches an outstanding 56 % distribution width – meaning that more than half of the British PV installers procure their storage solutions through Britain's most successful wholesaler.

> "Results show that 71 % of installers offer electric mobility solutions"



Brand Landscape – Less Loyalty, More Variety

The United Kingdom has also always been a highly interesting market when it comes to the brand landscape for modules, inverters and storage solutions. While the major Chinese manufacturers dominate the British market similarly to the other markets covered in the study, for inverters and storage solutions some brands have been positioned in the top group (in terms of unaided brand awareness and portfolio presence), that generally are not positioned as favourably in the other countries, e.g. Solis, GivEnergy, Tesla, Enphase and SolaX Power. Given the historical data, it is evident how strong a role British wholesalers play when it comes to brand choice.

However, we have witnessed a waning brand loyalty and a brand diversification among British PV installers. This can be seen by analysing the data over the course of years, and seeing that installers in the UK have been much more prone to include a broad variety of module, inverter and storage brands in their portfolios, and that they do not offer their main brands as exclusively as they used to – the leading brands per technology very rarely reach double digits when it comes to the share of installers offering a brand exclusively (for more than 95 % of their installations). When asked how they incorporate new brands in their portfolio, 69 % of the sample group replied that they do so via their wholesaler and/or distributor.

Looking Ahead

At EUPD Research, we believe that understanding the needs and demands of PV installers, and adapting product and service portfolios to the installers' requirements, is key in improving one's position against the competition. Only if the installers are satisfied with the products and brands they offer, will we be able to take vital steps towards the energy transition, and the PV InstallerMonitor | EES InstallerMonitor is the essential guide to the PV market.

Saif Islam, a Senior Consultant at EUPD Research with over 14 years of experience in building relationships with European PV installers, will be presenting some of these fascinating results on 24 September at Solar & Storage Live in Birmingham. Please go to the website after the show to find out more about the date and location, follow EUPD Research on LinkedIn, connect with the team and go to **https://eupd-group.com/** for further information on how to implement market insights into driving the energy transition.

Roadmap seizes 'once-in-a-generation' opportunity of the solar revolution

By Solar Energy UK

A NEW era of clean energy independence has dawned, with the publication of the long anticipated Solar Roadmap[1].

The government-industry paper describes dozens of practical measures to boost the supply of cheaper power, deliver new industries and create skilled jobs – all while providing significant reductions in greenhouse gas emissions and gains in biodiversity. By addressing issues such as the electricity grid, supply chain, skills and planning, it will play a major role in delivering both the Government's mission for the UK to become a clean energy superpower and December's Clean Power 2030 Action Plan[2].

By that time, we could see around 9m small-scale rooftop installations, up from 1.8m now, with the sector supporting 35,000 jobs – almost twice the number of today. Meanwhile, solar farms will have made a major contribution to pushing expensive natural gas off the grid, bolstering our energy security.

The roadmap was developed over two years and two governments by the Solar Taskforce – led by Secretary of State for Energy Security and Net Zero, Ed Miliband and Solar Energy UK Chief Executive, Chris Hewett, with support from leading figures in the solar industry and related sectors. The taskforce will shortly transition into the Solar Council, set to drive future progress and guide the plan's implementation.

"This is an incredibly exciting time for solar in our country. More than 1.5m homes across Britain now have solar installed, and since this Government came to office my department has consented almost 3GW of nationally significant solar projects – nearly three times as much as the previous 14 years combined. But we know we need to go further to deliver our goals for clean power by 2030 and beyond," said Miliband.

"Solar energy is among the lowest cost and most popular, forms of power generation in the UK and unlocking its potential will increase Britain's energy security, drive down bills as well as be a major contributor to preventing dangerous climate change. The fact that it can be deployed rapidly in so many ways from household rooftops, to warehouses, to reservoirs and large-scale solar farms, is the key ingredient to this potential," said Hewett.

Solar Energy UK thanks the former co-chairs of the taskforce, Andrew Bowie MP, and the Rt Hon Graham Stuart MP, alongside the members of its five sub-groups on networks, skills, supply chain and innovation, rooftop solar and communications. We are also grateful to former MP Chris Skidmore, who suggested the taskforce's formation in his 2023 Review of Net Zero[3].

Rooftop

Despite enormous reductions in cost over recent years, one of the key barriers to more widespread adoption of rooftop photovoltaics remains their upfront cost. So, the government will work with the Green Finance Institute, the finance sector, consumer bodies and the solar sector itself to provide financial solutions for all customers.

The taskforce also identified ongoing lack of awareness of the benefits of both domestic and commercial-scale solar energy as a further obstacle, with potential buyers unaware of trusted sources of information. Accordingly, the Government will update its Energy Efficient Home website to promote solar deployment. Meanwhile, the UK Warehousing Association has agreed to develop a toolkit for the commercial-scale market and to work on resolving barriers such as leasing terms and difficulties connecting to independently-run distribution networks[4].

How solar power is reflected in energy performance certificates will be revised and the Royal Institution of Chartered Surveyors will ensure that the value of solar homes is assessed properly. Incentives to install solar power on social housing will also be considered and retrofit customers will benefit from a review of consumer protections.

Additional commitments embrace helping schools to deploy solar power, further support for community energy from GB Energy and support for local authorities' solar projects from the National Wealth Fund.

A study into the safety of plug-in solar energy systems, which are currently forbidden, will also commence.

Grid

In parallel to existing initiatives, damagingly long waiting times for connecting large-scale rooftop and groundmounted projects to the electricity grid will be addressed through procedural reforms, allowing projects most likely to go ahead to jump the queue.

At the residential scale, a requirement for solar projects above 3.68 kilowatts to be approved

Footnotes

1 www.gov.uk/government/publications/solar-roadmap
2 www.solarenergyuk.org/news/solar-set-to-smash-through-clean-power-plan-targets
3 www.solarenergyuk.org/news/skidmore-review-calls-for-solar-revolution
4 www.ukwa.org.uk/wp-content/uploads/2022/09/Investment-Case-for-Rootop-Solar-Power-in-Warehousing-August-2022.pdf

Stourton Park and Ride, the UK's first fully solar-powered park-and-ride developed by Leeds City Council

by distribution network operators will be reviewed. This red tape can lead to capacity being limited unduly.

Other welcome changes are expected to the inaccurate way that applications for battery energy storage systems are considered and to who pays for new high-voltage transformers – which the roadmap describes as a 'postcode lottery'.

Supply chain

The roadmap represents a 'once-in-a-generation opportunity to grow the solar supply chain and manufacturing capacity in the UK.' While economics preclude the domestic manufacturing of conventional silicon-based panels, there is scope to grow the production of transformers, inverters, switchgear, supporting bracketry, battery storage and cabling, it says, not to mention R&D for lightweight and cutting-edge perovskite technology.

Accordingly, the Government will consider supporting companies looking to scale up production.

The roadmap also details the Government's support for the 'world-leading"' Solar Stewardship Initiative, intended to prevent the procurement of solar panels produced with raw materials tainted by forced labour. This comes after confirming that the system will be used by Great British Energy.

'The UK Government is clear that there should be no procurement of solar panels where there is evidence of forced labour. Government will empower contracting authorities to exclude suppliers from government contracts who have committed labour market misconduct and/or environmental offences in the UK or overseas… The UK solar sector has been proactive in its response to this issue,' notes the roadmap, citing Solar Energy UK's Supply Chain Statement and Responsible Sourcing FAQ[5,6].

Skills

The rapid growth of the UK solar industry – expected to expand by up to 17% this year – 'offers a generational opportunity to create a wealth of high-quality jobs. At this crucial juncture, we must put the structures in place to build the skilled workforce needed now and, in the decades to come,' the roadmap says.

Without action, there is a risk of skilled labour shortages, skills gaps, loss of key skills 'and potentially costly, urgent intervention further into the future,' it warns.

Solving the problem will require intervention from across government. Solar Energy UK has already launched Solar Careers UK, which will provide information and guidance on what skills and competences are needed for jobs in the sector and how to attain them.[7]

The roadmap itself offers no less than 11 actions on skills, including improving the provision and effectiveness of training, mapping the routes to competence for core occupations and connecting colleges and businesses. Solar Energy UK will work with other trade bodies on how to attract and retain newly trained installers and prepare teaching materials for schools.

Planning

Despite reforms to permitted development, the National Planning Policy Framework and other aspects of the planning regime, there is still more to be done to ease the solar sector's growth – including floating solar.

Solar Energy UK has committed to work with the planning profession to ensure that training is fit for purpose. We will also produce factsheets to advise planners and councillors, plugging the gap in the expertise needed to assess solar applications effectively.

Footnotes

5 www.solarenergyuk.org/resource/solar-supply-chains-sustainability-issues-and-action
6 www.solarenergyuk.org/resource/responsible-sourcing-guidance
7 www.solarcareersuk.org

Measurement of the I-V characteristics of PV panels using the Sonel PVM-1530 Max in accordance with IEC 61829

by Rob Barker, Director of Power Quality Expert

THE measurement of current-voltage (I-V) characteristics of photovoltaic panels plays a key role in evaluating system efficiency and detecting potential issues within a PV installation. Learn how to perform accurate measurements in compliance with IEC 61829 using the advanced Sonel PVM-1530 Max meter. Discover the impact of environmental factors such as irradiance and temperature on the measurement results, as well as the importance of correcting these to standard test conditions (STC).

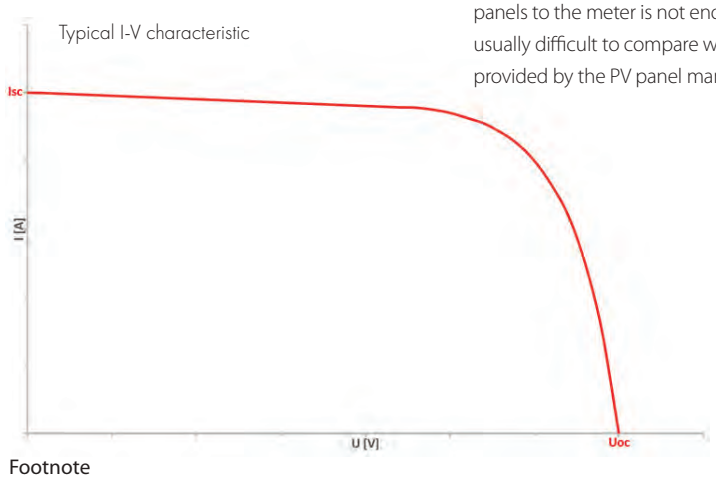
Although seemingly simple, this type of measurement can often yield results that differ significantly from expected values. This article describes how to perform these measurements using the Sonel PVM-1530 Max so that the results accurately reflect the condition of the tested PV panels, based on the IEC standard 61829:2015 Photovoltaic (PV) array – on-site measurement of current-voltage characteristics[1].

I-V characteristic – why is it so important?

One of the core features of the Sonel PVM-1530 meter is the measurement of I-V curves. The I-V characteristic is a graph that presents the panel's power output as a function of current and voltage. According to the IEC 62446-1 standard, this is one of the two measurements defined in the category 2 tests. I-V curves are very useful in evaluating PV installations in terms of performance and potential issues. The meter records the relationship between current and voltage by adjusting the load from open-circuit voltage (Uoc) to short-circuit current (Isc).

To understand what a current-voltage characteristic is, a typical I-V curve is shown below.

Typical I-V characteristic



Sonel PVM-1530 Max meter set Impact of irradiance and temperature on measurement results

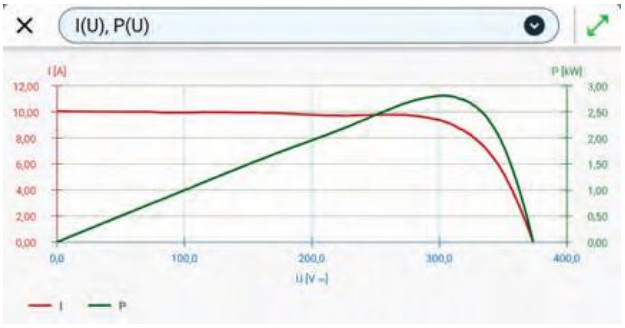
The Sonel PVM-1530 is capable of measuring connected panels and generating an I-V curve within a few seconds. However, just connecting the panels to the meter is not enough, as such a curve is usually difficult to compare with the reference curve provided by the PV panel manufacturer under STC.

STC conditions assume:

- irradiance E = 1000 W/m^2
- PV module temperature TPV = 25°C
- air mass AM = 1.5

In practice, it is rare for field measurements to be conducted under STC conditions. That is why

I-V and P-V curves displayed on the Sonel PVM-1530 meter screen



Footnote

1. IEC 61829:2015 Photovoltaic (PV) array - On-site measurement of current-voltage characteristics

it is necessary to correct measured values to STC to assess whether the I-V curve is correct. This requires recording irradiance and temperature so the meter can recalculate the results accordingly. Only then can the results be reliably compared to the manufacturer's data.

Why irradiance and temperature measurements are so important

Current and voltage values generated by PV panels are highly dependent on these parameters, which, in turn, directly affects power output. Figure 3 shows how irradiance impacts generation. As irradiance increases, current and power increase linearly (assuming constant panel temperature), while voltage changes only slightly. For this reason, irradiance should be measured using the external Sonel IRM-1 sensor at the same tilt angle and orientation as the panel string being tested.

IEC 61829 – the PV measurement standard

IEC 61829 specifies that to perform I-V curve measurements with STC correction, irradiance should be at least E = 700 W/m^2. The Sonel PVM-1530 checks the irradiance value using the primary irradiance sensor (IRM-1) before starting the I-V curve measurement. If the value is too low, the device will display a warning (see figure 4).

Because a string can contain dozens of panels installed over a wide area, it is important that all of the panels are mounted in the same direction, on a level surface and exposed to a uniform level of sunlight. If a PV installation consists of strings with different tilt angles, orientations, technologies or electrical configurations, the measurements should be performed separately for each string.

Two irradiance sensors – the key to compliance

The IEC 61829 standard requires irradiance to be measured in at least two points along the string, and the difference between them should not exceed 2%. This is why the PVM-1530 Max comes equipped with two Sonel IRM-1 irradiance sensors as standard—one main and one auxiliary.

Figure 3: Impact of irradiance on the I-V characteristic

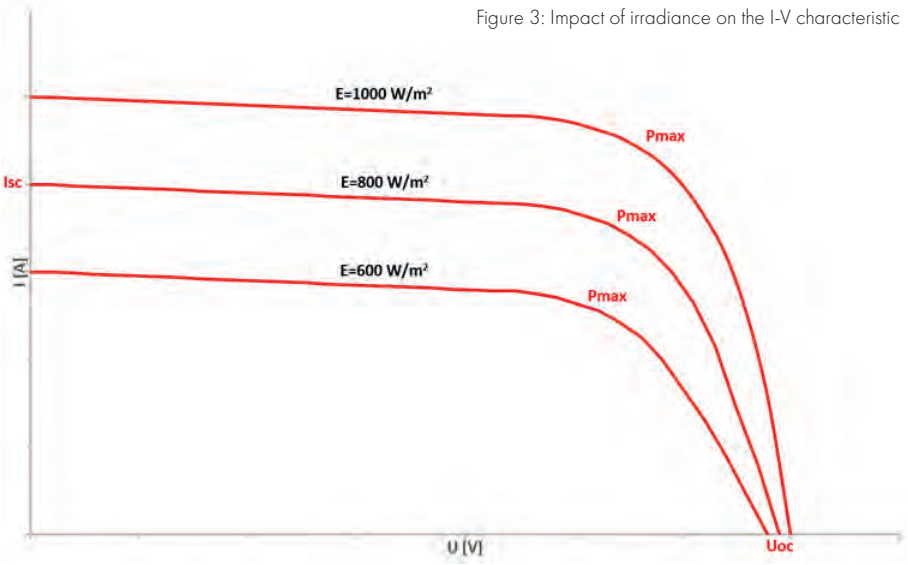
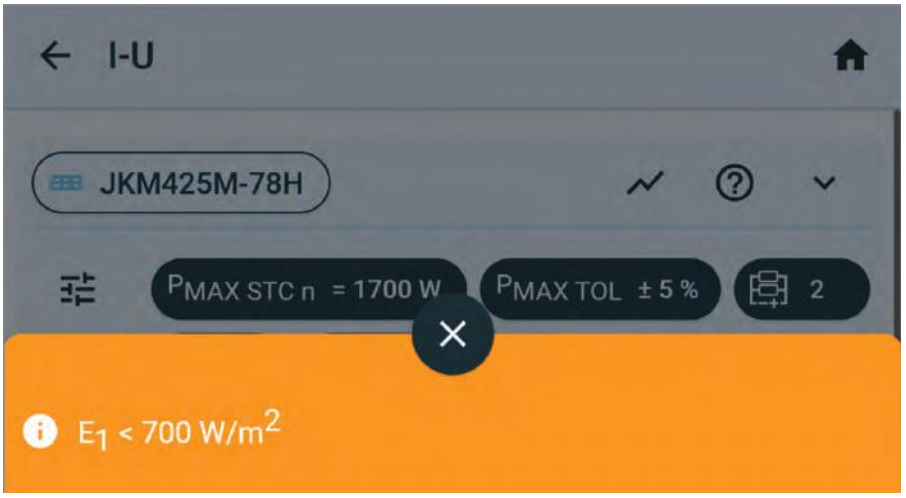


Figure 4: Warning about low irradiance level



Two irradiance sensors at both ends of the PV string

"If a PV installation consists of strings with different tilt angles, orientations, technologies or electrical configurations, the measurements should be performed separately for each string."

Figure 5: Warning about excessive irradiance difference between sensors

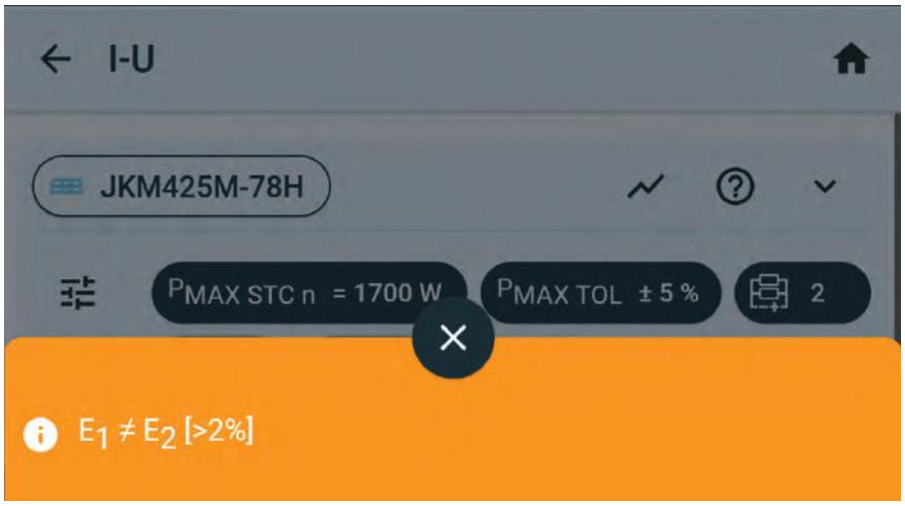
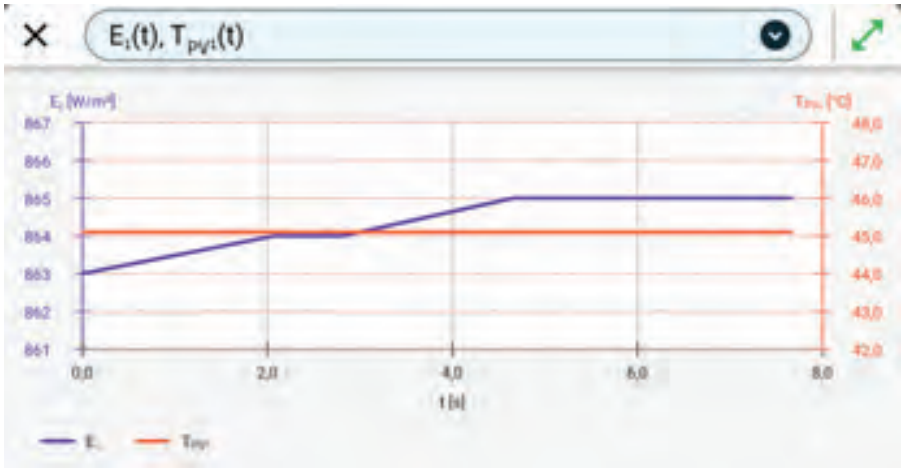


Figure 6A and 6B: Irradiance and temperature graphs during I-V curve measurement using both irradiance sensors



"Controlling irradiance stability is essential – but temperature stability is also important."

To comply with the standard, the irradiance should be checked at both ends of the string. If the PVM-1530 detects a difference greater than 2%, it will display a warning (see figure 5).

It is crucial that the Sonel PVM-1530 measures and records irradiance values from both sensors during the entire I-V curve scan (100 points). These values are displayed as graphs on the screen, allowing the user to verify the stability of lighting conditions during the measurement.

Measurement stability – how to avoid errors

As explained earlier, controlling irradiance stability is essential – but temperature stability is also important. Large differences in panel temperature across the string can cause unreliable I-V results. While temperature does not impact power output as significantly as irradiance, it still must not be ignored. As the panel temperature increases, the current rises slightly while the voltage drops more significantly, resulting in reduced power. These relationships are illustrated in figure 7.

According to IEC 61829, the difference in temperature between panels in the measured string should not exceed 1°C. Once again, the Sonel PVM-1530 uses both sensors to monitor this parameter. If a greater difference than 1°C is detected, the meter displays a warning (see figure 8). During the I-V measurement, temperature from both sensors is recorded and presented in graphical form, just like the irradiance data (see figure 6).

How to ensure the reliability of I-V measurements

In summary, it must always be kept in mind that I-V measurements can produce results that differ from expectations. However, these results should indicate an actual issue within the PV system rather than a mistake in the measurement procedure.

All the functions of the meter described in this article are designed to ensure that the measurements taken with the Sonel PVM-1530 Max and two IRM-1 sensors are reliable and provide the highest possible accuracy, while minimising the risk of user error. The user can then focus on interpreting the results without having to worry about correctly setting up the meter or the weather conditions affecting the I-V curve.

It is also worth mentioning that the Sonel PVM-1530 Max is ready to make measurements according to IEC 61829 immediately straight out the box once paired with the sensors. Other versions of the meter (Sonel PVM-1530 and Sonel PVM-1530 Pro) offer the same functionality once the necessary IRM-1 sensors are added.

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Figure 7: Impact of temperature on the I-V characteristic

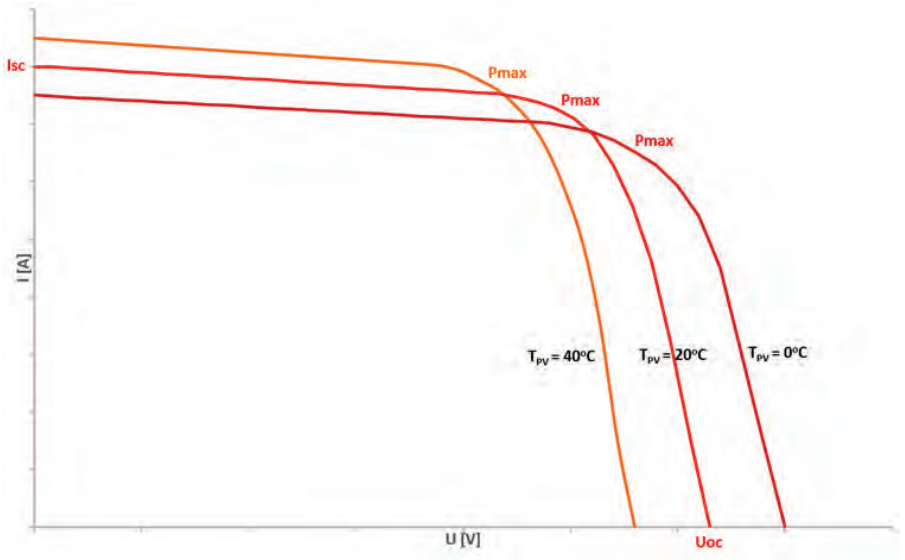
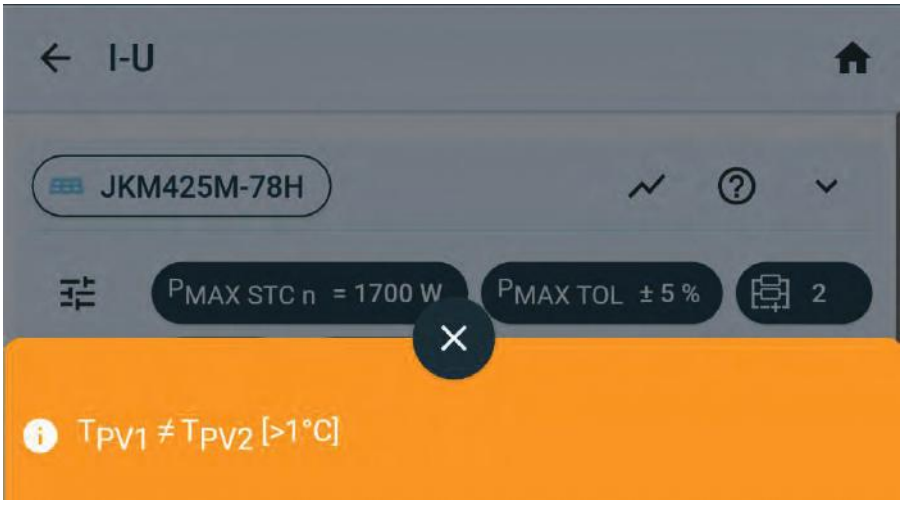


Figure 8: Warning about excessive temperature difference



5 Tips on how Solar Installers

David Humphriss, a former solar installer and now Head of Residential with SolarEdge UK shares his tips on how installers can guide, and provide a smarter customer journey – whilst building a thriving business along the way.

IN today's competitive residential solar installer market, where aggressive pricing, tighter margins and sky-high homeowner expectations prevail, sustainable growth and success won't come from just cutting prices, it comes from adding more value.

1 Building trust from the first interaction

Great selling isn't about you; it's about the person across the table. It's tempting to lead with credentials or jump straight into system specs, but understanding the goals and challenges for each specific customer is key to the rest of your sales process. Whether they're after the fastest payback, safety, smart tech integration or even sleek aesthetics, asking the right questions, especially about what problem they are trying to solve, is key to building trust and closing the sale.

Once you've understood the customer's goals, it's time to educate, not sell. The system with the lowest upfront cost isn't always the best value – highest energy production often means fastest payback. Help homeowners understand how different products meet their insurance needs, address safety concerns, or support smart home integration.

Present options as impartial advice, empowering them to make informed decisions. It's a significant investment, and customers appreciate transparency. For example; when recommending systems with more advanced safety, explain why they matter and how they work. If they're unsure about adding a battery, suggest starting with solar only and revisiting their consumption data after 6–12 months to assess how much they can tangibly benefit from more self-consumption with solar + storage. This phased approach builds trust and gives you a reason to reconnect later with real data in hand.

2 Designing with the customer – engagement equals sales

Why are car dealers so successful? Because they make you sit in the car, adjust the seat, and picture yourself driving it. Solar should be no different. Involve homeowners in the process – walk them around the property, look at their roof and meter, and even let them help measure the site. This hands-on approach builds excitement and gets them invested. Use a quality design tool to visually map the system on their roof and collaborate on adjustments to suit their preferences. More often than not, you'll find the customer working with you to see how you can squeeze a bigger system out of their roof space.

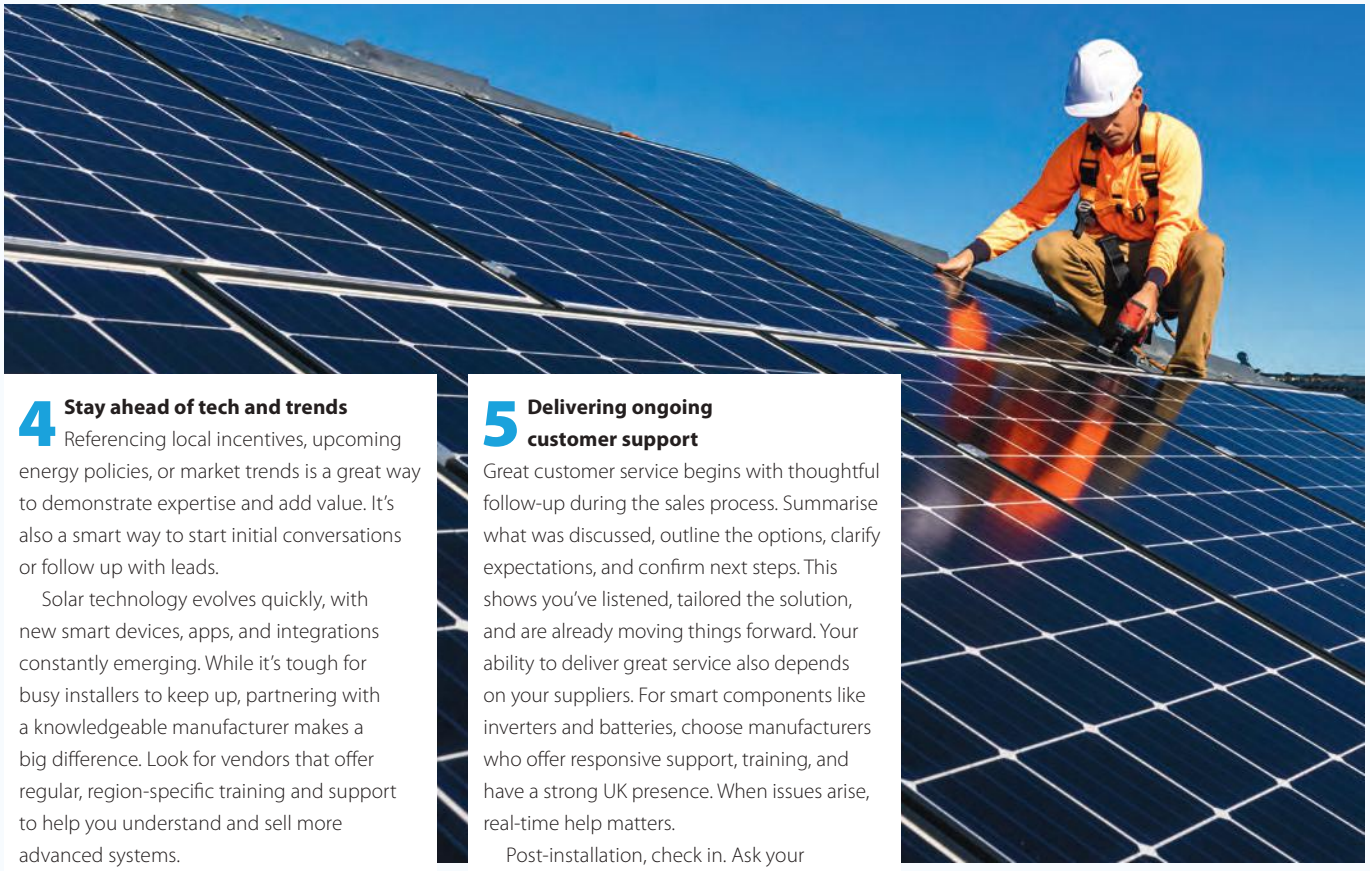
While virtual quotes and desktop surveys are now common, personalisation still matters. If an in-person visit isn't possible, screen share the design tool and walk through it together. Even remote engagement can significantly boost your close rate when it feels tailored and interactive.

3 Value over price

How often do we get presented with a series of options, but the one we can't forget or let go is the bigger, shinier option? Helping homeowners to understand that the best return on investment over the long run often comes from higher-yielding solar systems with smarter software. It's not necessarily the lowest price tag. Educate them on why systems that offer more than just basic safety features and longer warranties are the safe and smart choice to safeguard their investment. When customers see the long-term benefits vs the low low-cost options, they're more likely to invest in quality.

In a competitive market, many installers focus on offering the lowest price, often at the expense of profit margins, installation quality, and long-term customer satisfaction. Rushed installations increase the risk of errors and safety issues, leading to costly site visits and reputational damage. Competing solely on cost is a race to the bottom. I've found that offering differentiation and added value is what sets you apart.

can grow their business



4 Stay ahead of tech and trends

Referencing local incentives, upcoming energy policies, or market trends is a great way to demonstrate expertise and add value. It's also a smart way to start initial conversations or follow up with leads.

Solar technology evolves quickly, with new smart devices, apps, and integrations constantly emerging. While it's tough for busy installers to keep up, partnering with a knowledgeable manufacturer makes a big difference. Look for vendors that offer regular, region-specific training and support to help you understand and sell more advanced systems.

Staying up to date helps you to deliver more value and improve the ROI for customers. In the UK, for example, installers registered with TrustMark and PAS2030:2035 can install PV under ECO4 funding. To deliver these, you can either work directly with energy suppliers or managing agents who assist with compliance and paperwork. Similarly, schemes like the UK Demand Flexibility Service allow smart meter users to shift energy use in return for financial rewards. But only registered providers are eligible, so the PV system you recommend homeowners matters.

Cybersecurity is also increasingly under the spotlight. Regulations like the UK's PSTI and the EU's RED are putting data security in focus and getting the ball rolling on basic PV system requirements. With tighter cybersecurity regulation on PV inverter manufacturers on its way, get ahead by checking where vendors store your customer's data and what protocols they follow to avoid potential future system noncompliance. The last thing you need is to have to rip up and replace installations later on. Being informed builds trust, and trust closes deals.

5 Delivering ongoing customer support

Great customer service begins with thoughtful follow-up during the sales process. Summarise what was discussed, outline the options, clarify expectations, and confirm next steps. This shows you've listened, tailored the solution, and are already moving things forward. Your ability to deliver great service also depends on your suppliers. For smart components like inverters and batteries, choose manufacturers who offer responsive support, training, and have a strong UK presence. When issues arise, real-time help matters.

Post-installation, check in. Ask your customer if they've downloaded the app and walk them through it. This reinforces your commitment and gives the customer confidence to refer you. While you're there, why not ask if they know someone else who might benefit from solar.

Today's customers expect fast, professional service, more so than other industries, as energy bills rise. One minor fault can trigger demands for compensation, even if energy production is barely affected. Setting clear expectations early can help to avoid these issues down the line – define your response times and explain when compensation would be given. Clear terms and conditions save time, avoid disputes, and improve satisfaction. Honesty upfront is better than issues down the line.

There are tools available to help you manage this relationship without adding to your workload. Some installer apps will allow you to set automated alerts on system performance, remotely configure settings, and easily access customer contact information for check-ins. Professional follow-up not only improves satisfaction, it also boosts your reputation and repeat business.

How do I start?

There's no doubt that today's solar market is highly competitive for residential installers. Although it's tempting to get involved in the race to the bottom, your long-term business success won't come from cutting prices. It comes from adding value. Listen to your customer. Engage them in the design process. Offer transparent, tailored advice, and partner with a manufacturer who helps you stay ahead and supports you when it counts. This value-first approach will not only improve your close rate, but it will also build long-term customer relationships, and ultimately, long-term business growth.

www.solaredge.com/uk

Eaton's Buildings as a Grid at

NEC Birmingham | 23–25 September |

Step into the future of energy at Solar & Storage Live 2025, where Eaton unveils its transformative vision, Buildings as a Grid. Positioned right at the entrance of Hall 19, Stand C24A will be the epicentre of innovation, showcasing how buildings can evolve from passive energy consumers into dynamic, self-sufficient energy hubs.

EATON'S stand will be buzzing with activity:

- Interactive demos of Buildings as a Grid
- Expert talks on EV infrastructure and renewables
- Networking with energy transition leaders

Whether you're a developer, installer, or policymaker, Eaton offers a glimpse into the energy landscape of the next decade.

Buildings as a Grid: A New Energy Paradigm

Eaton's Buildings as a Grid approach redefines energy management. By integrating local power generation, energy storage, EV charging, power distribution, and intelligent control systems, buildings become active participants in the energy ecosystem. This model supports decentralisation, electrification, and digitalisation, the three strong pillars of a sustainable energy future.

Eaton has developed a distinctive simulation tool, the Buildings as a Grid Simulator Tool, to advance green energy adoption. This innovative solution delivers customised energy strategies for each site by calculating resources, loads, and costs, while also providing insights into payback periods, self-consumption, and CO_2 reductions to facilitate scalable green transition plans.

Energy Storage: The Backbone of Resilience

At the heart of Eaton's energy strategy lies its battery energy storage systems (BESS). Designed for commercial and industrial applications, the xStorage family range offers capacities up to 1MWh and beyond. These systems enable:

- Peak shaving to reduce demand charges
- Load shifting to optimise off-peak tariffs
- Backup power during outages
- Seamless integration with solar PV and other renewables

Eaton's scalable storage solutions empower facilities to capture surplus renewable energy and deploy it when needed, enhancing both sustainability and cost-efficiency.

Solar & Storage Live 2025

Hall 19, Stand C24A

EV Charging: Driving the Green Revolution

Electric vehicles are reshaping transportation, and Eaton is leading the charge with its advanced EV charging solutions. From workplace and fleet depots to public and highway stations, Eaton's Green Motion AC and DC chargers meet every need.

- AC chargers: 3.7kW up to 22kW, single and dual output
- DC chargers: 22kW to 360kW, high-speed options
- Features: Dynamic load balancing, built-in MID meter, 96% efficiency
- Compliance: UK smart charging regulations, OZEV approved

Eaton provides a future-proof EV charging infrastructure designed for straightforward installation and ease of commissioning with UK-based support. Eaton has additionally implemented application-based monitoring with predictive analytics and maintenance capabilities, which allow real-time updates and timely servicing of chargers to reduce downtime due to failures or repairs. These features align with public charging regulations, aiming for high uptime and reliability.

Experience our live commissioning challenge with ChargePoint—designed to showcase just how straightforward it is to commission our Green Motion building charger. Simply use the ChargePoint backend app on your phone to complete the process. Each day, the participant with the fastest commissioning time will win a £100 Amazon voucher.

See It. Try It. Win It! Visit Our Stand for Rapid Commissioning Demos & Your Chance to Win exciting prizes

Imagine transforming a technical step into a seamless, satisfying moment—Eaton's live commissioning challenge is designed to do exactly that. For installers, this is your opportunity to discover first-hand how quick, simple, and hassle-free it is to bring Eaton's Green Motion chargers online using the intuitive ChargePoint backend app.

By taking part in the challenge, you'll not only test your skills in a real-world scenario but also enjoy the immediate advantage of a commissioning process that's built to eliminate headaches. Eaton's system is engineered so that what used to take hours can now be completed in minutes, with no complicated procedures or surprises along the way. The streamlined workflow means less time on-site, fewer call-backs, and more time to take on new projects or clients.

Each day at the stand, the installer to commission the charger the fastest walks away with a exciting prizes, rewarding speed, accuracy, and the confidence that comes from using a truly installer-friendly solution. Step up, put your expertise to the test, and see for yourself why Eaton and ChargePoint are the choice for those who value efficiency, compliance, and quality in every installation.

Networking Evening: Powering the Future

Tuesday, 23 September 2025 | From 6:00 PM | Flight Club Birmingham

Eaton cordially invites you to an exclusive evening event focused on "Powering the Future: Overcoming EV Deployment Challenges." Join Eaton's senior leadership for networking opportunities, refreshments, and engaging discussions. Attendance is complimentary; however, advance registration is required. Please use the provided QR code to secure your place at this event.

Take advantage of this opportunity to learn more through our special presentation on "Powering the Future," where insights into the latest solutions for EV deployment will be shared. After the session, enjoy an entertaining evening at Flight Club filled with engaging conversation, networking with industry leaders, and a delicious selection of food and drinks.

Eatons Presentation at EV Charge Live: Future of EV charging

Join Eaton's Partner Advantage Program, more details can be found on the stand C24A. If you are interested in joining Eaton's Partner Advantage Program as an installer partner, and want to sell our products, be part of our partner locator, and receive exclusive business opportunities from us, register today! Visit Eaton's Partner Advantage Program to learn more and sign up.

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Final Word

Eaton is here to stay, we are here since 1911 and are committed for long term. With Eaton. we are your trusted partners. The future of energy is being built today. Eaton's Buildings as a Grid integrates energy storage, EV charging, and intelligent management to create resilient, sustainable ecosystems. From the moment you enter Hall 19, you'll witness the transformation.

See you at Stand C24A.

Unlocking Whole-Home Power - Meet the EcoFlow Gateway

FOR households investing in energy independence, reliability is everything. Solar panels and home batteries form the foundation of a self-sustaining system, but without a central command hub, their true potential remains untapped. That's where the EcoFlow Gateway comes in. Designed to deliver seamless whole-home backup, integrate multiple power sources, and make installation faster and easier, Gateway is the missing link that transforms a home energy setup into a complete, flexible, and future-proof system.

Expand Your System, Unlock Whole-Home Power

Gateway acts as the central hub of your energy ecosystem, connecting all components and expanding what's possible. With Gateway, the entire household stays powered, from essential lighting and appliances to high-demand systems like heating, cooling, or EV charging.

Unlike limited backup options that only cover a portion of the home, Gateway delivers uninterrupted, whole-home resilience. It's also scalable. By enabling parallel setups and expanded capacity, it can evolve as your household's energy needs grow - ensuring your investment remains relevant for years to come.

Seamless Backup, Zero Compromise

Power outages are disruptive enough without flickering lights, interrupted Wi-Fi, or rebooting appliances. Gateway ensures that doesn't happen. With uninterrupted switchovers, it guarantees that every circuit continues running seamlessly, without interruption. For households with remote work setups, or simply a need for uninterrupted comfort, this reliability makes all the difference.

By combining high-current support with smooth transitions, Gateway turns the idea of backup power from a contingency plan into a genuine safety net that homeowners can depend on every day.

True Energy Freedom, from Every Source

Modern homes need more than just solar. They need flexibility - because power doesn't always come from a single source. Gateway is designed to provide exactly that.

It integrates with third-party solar inverters, meaning it can slot into existing solar setups with ease. It also connects directly to generators, offering additional resilience for off-grid living or during extended outages. This compatibility creates a system that's adaptable, blending renewable energy with backup options to provide consistent power in any situation.

Whether you're on-grid, off-grid, or somewhere in between, Gateway ensures your home energy system remains versatile and reliable.

Faster Installation, Easier Wiring

Installation has traditionally been one of the biggest hurdles in home energy adoption. Complex wiring, extra components, and extended labour all add to the challenge. Gateway is built to change that.

With direct main-panel connection and a built-in smart meter, it significantly reduces installation time while simplifying the process for professionals and DIY enthusiasts alike. By cutting out unnecessary complexity, Gateway makes transitioning to a smarter, more resilient home energy system smoother from the very start.

Smarter Connections, Smarter Homes

Homeowners are increasingly turning to smart appliances and energy management platforms to fine-tune their energy use. Gateway is built with this in mind.

Equipped with RS485 and SG-ready interfaces, it can integrate seamlessly with third-party ecosystems—from smart home devices to advanced energy management software. This opens the door to greater control, allowing households to decide not only how much energy they use, but also when and where they use it.

With Gateway, the home energy system doesn't just respond to outages - it actively contributes to smarter, more efficient daily living.

See Gateway in Action at Solar & Storage Live

EcoFlow is inviting visitors to experience the future of home energy at Solar & Storage Live Birmingham, where Gateway will be the headline showcase. Alongside it, the full EcoFlow Home Energy Management System will be on display, giving homeowners, installers, and industry professionals the opportunity to see how these technologies integrate into a complete, flexible ecosystem.

Throughout the first two days of the show, EcoFlow experts will host presentations from 11am, offering deeper insight into the system's design, capabilities, and benefits. Attendees will be able to ask questions directly, explore real-world applications, and discover how Gateway can transform any household energy setup into a robust, whole-home solution.

A New Era of Home Energy

The EcoFlow Gateway represents more than just an accessory - it's the central hub that empowers true energy independence. From seamless backup to multi-source flexibility, simplified installation, and smart-home integration, it enables households to unlock the full potential of their systems.

For those looking to future-proof their homes, reduce reliance on the grid, and enjoy uninterrupted power no matter what, Gateway is the answer.

To learn more, visit EcoFlow at stand C8 at Solar & Storage Live Birmingham.

Visit EcoFlow at Solar & Storage Live Birmingham, stand C8

Presentations daily at 11am (first two days). Or head to **https://homebattery.ecoflow.com/uk** REI

Do your slate roof installations involve drilling through roofing material?

Genius Roof Solutions explains how poor roofing practices continue to create persistent challenges within the solar industry.

GENIUS Roof Solutions (GRS) entered the solar industry in 2011, recognizing a significant gap between solar PV installers and the roofing expertise required. At that time, many installers, primarily electricians, lacked proper roofing knowledge, leading to widespread poor practices. GRS aimed to provide products that would help installers maintain roof integrity.

Initially, hangar bolts were commonly used, a practice GRS found concerning. This led to the development of the SolarFlash® concept, which provided a reliable, watertight solution. Since its introduction 14 years ago, SolarFlash® has not failed nor received a single complaint. While solar PV installation standards have improved, substandard work still occurs and poses a risk to industry confidence.

Is there a risk of regression in current solar installation practices?

Yes, there is a risk. Some installers continue to drill through slates, which is widely recognized as poor roofing practice. With the introduction of SpeedFlash® last year, there is no excuse to compromise on slate roof installations. Each bracket can be installed in under 2 minutes whilst negating the need for slate removal or drilling through the roofing material.

Why is drilling through slate a flat no for us?

Every slate or tile that has been drilled through is shaded by a large panel therefore; the roofing material and the bracket are subject to the same wet and damp conditions as a north facing roof. They are breeding grounds for moss spores.

Moss spores are one-celled reproductive units that become airborne and can make their way onto a roof. There they will gather in spaces between the shingles and grow into moss. Once established, it absorbs rainwater like a sponge and can grow and spread across the roof.

For this reason, we do not support drilling through roofing material or relying on silicone, mastic, rubber, or similar products as water seals. These solutions may last for a limited time, but there is a significant risk that moss spores will eventually compromise the seal, allowing water to penetrate the drill hole. Facebook has numerous examples of poor installations that installers have been called to repair the damage caused.

Should you just take our word for it?

We recently asked Stewart Rowles MIor, Managing Director at Master Roofers UK what he thought about the practice of drilling a hangar bolt through slates.

Stewart says;

> "Relying on a rubber washer is a terrible idea
>
> Overtightened bolts will undoubtedly crack slates
>
> If the rafter isn't exactly in the middle of the slate, even with a rubber washer, the underneath slate will leak.
>
> The trouble is, a lot of solar installers are not roofers, and want simple and easy solutions. But they will definitely leak long term.
>
> A rubber washer won't last as long as slates, so it's totally unfit for purpose"

Another important consideration is that installers cannot tell whether the slate underneath has cracked, as it is not visible during installation. Issues such as this will often only become apparent when a homeowner reports a leak.

For tips and advice on how to fit solar the right way visit geniusroofsolutions.com or drop us a message on any of our social media platforms

The following images demonstrate the correct way to install solar using SolarFlash® and SpeedFlash® without requiring slate removal or drilling.

The mages above demonstrate the correct way to install solar using SolarFlash® and SpeedFlash® without requiring slate removal or drilling.

When is the right time to invest in solar?

Ciaran Cotter, Technical Director at Solivus, explains how businesses can identify the optimal time to adopt solar solutions that maximise financial returns and reduce carbon footprints.

FOR commercial and industrial building owners, the decision to invest in solar energy is no longer a question of if, but when. But determining the right time to do so isn't necessarily a one-size-fits-all approach – it requires a comprehensive understanding of a building's energy consumption, financial objectives and environmental commitments.

According to the UK Green Building Council, the built environment – that includes everything from construction and refurbishment through to operational emissions such as heating, cooling and lighting – is responsible for 25% of the UK's greenhouse gas emissions[1]. That is a staggering amount. To put it into context, it's just shy of the 26% contribution from transport – the UK's highest carbon emitting sector[2]. But while electric vehicle sales are soaring, a report by the World Green Building Council found that under 1% of the world's commercial buildings and homes were net zero[3]. A recent analysis also revealed that approximately 80% of all UK commercial property is below EPC 'B'[4]. I could go on throwing out statistics but the bottom line is that there is huge scope for the UK's buildings to become more sustainable and, if we achieve this goal, it could go a long way to solving the climate crisis.

At the same time, energy-intensive commercial and industrial businesses are facing significant challenges due to escalating energy prices, potentially impacting their profitability and competitiveness. Many are struggling to adapt to the high costs, with some even considering relocating production or scaling back operations. This shifts the business case for energy-efficient and sustainable practices from being solely an environmental concern to a crucial commercial imperative.

Enter the growing energy impetus – offering large-scale operators a powerful way to reduce emissions, cut costs, safeguard against unpredictable rate hikes and future-proof. In fact, according to the UK government's new Solar Taskforce, integrating solar power into commercial buildings could revolutionise the nation's renewable energy landscape.

So, why, you may ask, isn't every business making the switch? Though there may be a myriad of reasons, generally one of the biggest hurdles can be as simple as trying to ascertain the right time to invest in solar.

A strategic response to rising costs

In our experience the most common catalyst for solar adoption is rising energy costs. Businesses increasingly need to think tactically about grid usage and cost control. Whether triggered by increased energy demand, tariff changes, or grid constraints, strategic energy management has become a critical concern.

Take, for instance, an automaker that expands its operations with EV charging infrastructure. While a positive step toward electric mobility, it also introduces significant peak energy loads – driving up electricity bills and straining the grid. In another scenario, a company might face new utility contract terms that include higher demand charges – fees tied to peak usage rather than total consumption. These can inflate operating costs for energy-intensive operations.

In both cases, solar power – particularly when paired with battery storage – offers a way to self-generate energy, reduce grid reliance and shield the business from volatile energy prices. It becomes a commercially sound decision, not just an environmental one.

Footnotes

1 https://ukgbc.org/our-work/climate-change-mitigation/
2 https://www.gov.uk/government/statistics/transport-and-environment-statistics-2023/transport-and-environment-statistics-2023
3 https://worldgbc.org/article/every-building-on-the-planet-must-be-net-zero-carbon-by-2050-to-keep-global-warming-below-2c-new-report
4 https://www.building.co.uk/data/what-the-governments-commercial-non-domestic-epc-b-pledge-means-for-real-estate/5122310.article

In fact, by fully utilising the available rooftop space it is estimated that commercial buildings could save £35 billion, with lifetime savings reaching £703 billion. In energy generation terms that translates to 117 TWh of electricity annually. That's enough to power approximately 30 million homes for a year, more than the number of households we currently have in the UK[5].

Place this into the context of an increasingly volatile energy market as prices continue to rise and increasing renewable integration posing challenges for grid stability; self-generation is becoming an increasingly attractive proposition for those commercial operations.

Environmental leadership and business continuity

There's also a proactive dimension to this shift. Many businesses are now looking beyond immediate cost savings and taking decisive steps to reduce their carbon footprint as part of a broader decarbonisation strategy. For these organisations, the move to on-site renewables and smart energy systems is as much about environmental leadership as it is about operational efficiency.

Another compelling case for commercial solar can be found in business climates where an interruptible power supply is paramount. As aged grids become increasingly unreliable, deviations and other disturbances to electrical supply are more common. For a busy factory or manufacturer, the result of even a few minutes downtime can be huge in terms of the loss to productivity and revenue impact. Solar, combined with energy storage, provides a buffer – ensuring continuity of critical systems and reducing dependence on the national grid.

Choosing the right solar solution

Once the case for solar is made, the next step is specifying the right solution. Structural capacity is often the first concern. As many as 40% of commercial buildings in the UK can't support the weight of traditional solar panels. Fortunately, advancements in lightweight, ultra-thin film technology now make solar viable for buildings previously deemed unsuitable.

Scalability is another key factor. As the world moves towards future decarbonisation, it is becoming increasingly difficult for commercial and industrial users to predict what loads they may require a year from now, never mind in five years' time when new electric fleets or new production technologies might have been added to the mix. In this vein, the ability to grow, support commercial objectives and scale up as needs increase is essential.

Digitalisation also plays a pivotal role. From system monitoring and energy optimisation to leveraging data analytics and AI, smart energy systems are transforming how businesses manage consumption and emissions. Energy storage supports this digital shift, enabling informed control of usage based on real-time insights. In this way, any solar solution should complement existing infrastructure while aligning with broader smart building ambitions.

Survival of the greenest

Looking ahead to the not-too-distant future of commercial buildings, solar energy is just the beginning. Eventually, the majority of commercial premises will depend on solar not only to reduce energy costs and meet sustainability targets but also to ensure energy security and actively participate in innovative energy markets. When paired with advanced AI-driven energy management systems, commercial operators will gain unprecedented control – optimising when solar power is generated, stored or drawn from the grid. Combined with energy storage, smart technologies and smart grids, this creates a powerful toolkit for developing ultra-efficient, highly responsive buildings that consume far less energy and resources to operate.

In this way, switching to solar shouldn't be seen as a choice but rather as a positive and inevitable opportunity. The commercial building sector stands on the brink of a major energy transition, as the challenges of climate change, energy market instability and decarbonisation become impossible to ignore. Early adopters who embrace commercial solarisation today will not only reap significant financial and environmental benefits but also blaze the trail toward a future where it truly will be the survival of the greenest.

So, when is the right time to invest? In short: now.

www.solivus.com

Footnotes

5 https://powermarket.ai/buildings-could-save-35bn/#:~:text=A%20groundbreaking%20analysis%20by%20PowerMarket,leaving%20a%20vast%20untapped%20

Understanding RCD Considerations for Solar PV, Battery Storage and EV Chargers

By Steve Donovan, Head of Technical UK & Ireland at renewables distributor Segen

RESIDUAL Current Devices (RCDs) are critical components in electrical installations, providing protection against electric shocks and fire risks caused by earth leakage. However, when it comes to installing renewable technologies like solar PV, battery storage systems and EV chargers, choosing the correct RCD—and knowing whether you need one at all—can be more complicated than it seems.

Do You Really Need an RCD?

RCDs have become so commonplace nowadays that the decision to install RCCBs (residual current circuit breakers) and more recently RCBOs (residual current breakers with overcurrent protection) is almost automatic. However, there are specific circumstances that mean that you don't need an RCD at all. The benefits of not installing an unnecessary RCD include cost and time savings, as well as the prevention of nuisance tripping.

When it comes to renewable energy systems, the decision to install an RCD isn't always straightforward. For example, if the main fuseboard and solar inverter are installed in the same area (like a garage or plant room), and the inverter's supply cabling is fully visible from the origin to the inverter, then it's possible to argue that an RCD isn't necessary. The reasoning is that the risk of the cable being damaged or disturbed is low when it's visibly secured along a wall or inside surface trunking.

> "If an RCD is required, ensure you select the right type"

Interestingly, Section 8.8 of the IET Code of Practice (COP) for Grid Connected Solar PV confirms there is no fundamental requirement to install an RCD on the circuit feeding the inverter(s). In fact, it recommends designing systems so that inverters are not fed by an RCD, as this can prevent unnecessary tripping in the event of minor faults. However, EV chargers are a different case, and an RCD is always required for these installations.

Selecting the Right Type of RCD

Once you've determined that an RCD is necessary for your installation, the next step is choosing the right type. Historically, the most common RCDs were the Type AC devices, which are only suitable for circuits with purely resistive loads (like heating). However, most renewable technologies—such as solar PV and battery storage systems—incorporate DC (direct current) components. This is where problems may arise.

Type AC RCDs can struggle to detect faults in circuits that include DC current, as the RCD can become "blinded" by the DC component. This can either prevent the RCD from tripping when needed or cause it to trip unnecessarily (nuisance tripping). Therefore, Type AC RCDs are no longer suitable for circuits with DC components, which makes them inappropriate for solar PV and battery storage systems.

For renewable technologies, Type A RCDs are the appropriate choice. These devices are designed to handle up to 6mA of pulsed DC current, making them suitable for most systems involving solar inverters and battery storage. However, it's important to always verify the manufacturer's documentation for any specific RCD requirements for the devices you're installing, as there may be specific limits or recommendations to consider. Refer to the selection tables in the IET COP books for more details.

Double Pole vs. Switched Neutral RCDs

Another important consideration is whether the RCD needs to be a double pole or a switched neutral device. According to the Wiring Regulations (BS7671), RCDs serving equipment like solar PV, battery storage, and EV chargers must disconnect all live conductors, including the neutral. This is a key safety feature.

In most cases, a double-pole RCD will meet this requirement, as it will disconnect both the live and neutral conductors. However, it's important to check the specific details of the RCD you're using. RCBOs often have a diagram on the side, indicating whether the device switches both the live and neutral conductors. Many RCBOs are single-pole with a switched neutral. These will disconnect both conductors in the event of a fault, but they will only provide overcurrent protection for the live conductor, not the neutral.

Bidirectional vs. Unidirectional RCDs

Some installations—particularly battery storage systems and EV chargers—can involve bidirectional power flow. In these systems, power may flow in both directions, which is important when considering RCD functionality. Unidirectional RCDs are designed for systems where power flows in only one direction, such as typical household appliances. But for systems that involve bidirectional power flow, like inverters that charge batteries or bidirectional EV chargers, it's essential to use a bidirectional RCD.

Bidirectional RCDs are designed to function correctly regardless of the direction of the power flow, ensuring that the test function operates properly in both directions. In contrast, a unidirectional RCD exposed to bidirectional power may fail to function correctly if the power flow reverses, creating potential safety hazards. For instance, a unidirectional RCD exposed to bidirectional power could become permanently disabled without visibly tripping. This could leave the system user unaware that the RCD is no longer providing protection.

It is worth noting that on July 31, 2024, the IET released Amendment 3:2024 to BS7671:2018 (Requirements for Electrical Installations, IET Wiring Regulations), which provides greater clarity on the selection of unidirectional and bidirectional devices. In particular, Chapter 53 of the amendment (530.3.201) highlights specific product markings that must be included to indicate whether a device is unidirectional. These include directional indicators such as 'In & Out,' 'Line & Load,' 'Supply & Load,' or arrows indicating the power flow direction. If a device lacks any specific directional markings, it should be assumed to be bidirectional.

Summing Up

In conclusion, when installing renewable technologies such as solar PV, battery storage systems, and EV chargers, it's vital to understand the considerations and specifications for RCDs. While it may be tempting to install an RCD by default, it's worth asking whether it's necessary in the first place—especially in cases where the inverter and fuseboard are in the same location and the wiring is fully visible. If an RCD is required, ensure you select the right type, such as a Type A for renewable systems, and verify that the device switches both the live and neutral conductors. Lastly, always ensure that you use a bidirectional RCD for systems involving reverse power flow, like battery storage and EV chargers.

By taking these factors into account, you can ensure that your installations are both safe and compliant with the latest regulations.

www.segen.co.uk

Are Smart Export Guarantee rates fair?

Ben Brading, Managing Director of Business Energy Deals, analyses whether SEG prices are fair.

THE Smart Export Guarantee (SEG) enables small-scale solar generators to earn money by exporting excess solar power to the grid. However, the best SEG rates are significantly lower than the energy price cap. The SEG is a government-backed scheme designed to incentivise small-scale renewable energy generation. The scheme enables homes and businesses with solar panels to earn income by exporting surplus electricity to the local grid.

All licensed energy suppliers with more than 150,000 customers operating in Britain must offer at least one SEG tariff to any eligible generator. Under an SEG tariff, suppliers pay a set price per kilowatt-hour (kWh) of electricity exported to the grid, as measured by a smart meter.

Smart Export Guarantee tariffs

Although the largest energy suppliers must offer a Smart Export Guarantee tariff, they are free to choose the rates they offer to their customers. As of July 2025, the SEG rates available in the market range from a low of 3p/kWh to a high of 16.5p/kWh.

Although there is a wide range in SEG rates, even the most competitive tariff currently available is significantly lower than the energy price cap rate of 25.7p.

While the largest energy suppliers are required to pay for surplus solar electricity, the rates they offer are often a fraction of what those same customers must pay to buy electricity from the grid. This disparity raises questions about whether solar generators are being fairly rewarded for the energy they contribute.

There are three important reasons for the difference between export and import rates available to solar panel owners.

Network charges

When an energy supplier delivers a kilowatt-hour (kWh) of electricity to a customer, it must pay for the distribution of that power from its point of generation to the customer's address.

The distribution of electricity in Britain involves both national and regional electricity networks. Energy suppliers incur three distinct and significant costs charged by network operators for the use of their infrastructure.

Firstly, each supplier must pay Transmission Network Use of System (TNUoS) charges when delivering electricity to customers via the grid. TNUoS charges account for approximately 10% of business and domestic electricity bills and cover the cost of operating, maintaining and developing Britain's high-voltage National Grid. These charges are rising each year as the grid is upgraded and expanded to accommodate power from new wind farms, particularly in Scotland.

A second charge related to the power infrastructure is the Distribution Use of System (DUoS) charge, which accounts for approximately 15% of electricity bills. Britain is divided into 14 regional electricity grids, which serve as the connection between the National Grid and individual customers within each region. When an energy supplier delivers power to a customer, it must pay DUoS charges to the customer's local grid operator.

Finally, suppliers must pay Balancing Services Use of System (BSUoS) charges to the National Energy System Operator (NESO). NESO is responsible for maintaining the voltage and frequency stability of the grid to prevent infrastructure damage and blackouts. It balances

the grid by compensating generators for adjusting their power output to match demand. BSUoS charges paid to NESO account for approximately 3% of electricity bills.

In total, the cost that energy suppliers must pay for using electricity infrastructure in Britain makes up approximately a quarter of all electricity bills.

When a customer of one of these energy suppliers uses the SEG scheme to export power into the grid at a local level, there is no mechanism in place for the supplier to receive a reduction or rebate on these charges.

Environmental levies

There are two important environmental levies that energy suppliers must pay when supplying power from the grid to a domestic or business property. Both of these levies subsidise large-scale renewable energy generation.

The first environmental levy is the Renewables Obligation scheme, which subsidised renewable energy projects built between 2002 and 2017. The scheme issues Renewable Obligation Certificates for each megawatt-hour (MWh) of power produced by participating projects, which licensed energy suppliers must then purchase to offset their supply to customers.

The latest Ofgem publications show that the Renewables Obligation is expected to add 3p/kWh to the cost of electricity in the 2025/26 year.

The second environmental levy is the Contracts for Difference (CfD) scheme, which replaces the Renewables Obligation. It guarantees the price that more recently constructed wind farms receive for their power through a government top-up.

This government top-up is funded through a CfD levy, which suppliers pay at a current rate of 0.6p/kWh.

It is government policy to fund these renewable energy subsidies through the electricity bills of British consumers. Unfortunately, there is no way for small-scale renewable energy owners to earn or benefit from these subsidies when feeding power back into the grid under the Smart Export Guarantee scheme.

Timing mismatch

British energy suppliers must purchase power on the wholesale electricity market to meet the demand of their customers.

The wholesale market is divided into 48 separate half-hour periods of power delivery each day. In this market, the price per kilowatt-hour (kWh) for each delivery period is determined by the forces of supply and demand.

Electricity on the grid is most expensive during the peak evening period between 4 p.m. and 7 p.m., when power demand is at its highest. Receiving power from customers through the SEG scheme provides an alternative to purchasing electricity on the wholesale market.

Unfortunately, maximum solar generation occurs around midday, a lower demand period, when electricity is cheaper. When suppliers design their SEG tariffs, they take into account the fact that the electricity they receive from customers will typically be generated at a time when wholesale prices are lower.

Are Smart Export Guarantee rates fair?

When the government launched the Smart Export Guarantee in 2020, it deliberately chose not to set a minimum export rate. This marked a departure from the older Feed-in Tariff scheme, which had fixed rates.

This hands-off approach may seem unfair at first glance, but it encourages healthy market competition. Several of the larger suppliers actively use the rates they offer on their SEG tariffs to attract new customers.

Without an imposed rate per kilowatt-hour (kWh), the export prices offered by suppliers become a true reflection of the value added by small-scale solar owners who export power to the grid at a local level.

The reason that the best rates available under the Smart Export Guarantee are lower than the cost of purchasing electricity is simply a reflection of the market structure.

Energy suppliers must pay network charges, environmental levies and peak electricity prices when delivering power to their customers, none of which are recouped when those same customers export power to the grid.

While SEG rates may seem low compared to the unit prices charged on electricity bills, they reflect the underlying economics of the market. However, a broader question of fairness remains: is it right for government policy to continue supporting large-scale generators, while offering no equivalent support to small-scale solar producers?

www.businessenergydeals.co.uk

Why Flexibility Trading is the future for Solar Energy

By Iván Castro, Operations Director at Levelise

THE solar sector in the UK has witnessed remarkable progress over the past decade - costs have plummeted, adoption has surged, and technology has advanced. But as we look ahead, it's clear that simply generating clean energy isn't enough. The next frontier is flexibility.

Recent policy announcements, particularly the Future Homes Standard, reinforce this direction and place a strong emphasis on low-carbon heating and onsite renewable energy - including solar PV. But the key evolution isn't just in how homes produce energy; it's in how they use and trade it.

With solar adoption continuing to grow, the challenge lies in managing when and where energy is used. A sunny afternoon may generate surplus electricity, but excess energy often goes to waste or is undervalued. Flexibility unlocks the true value of solar by aligning supply with demand more intelligently.

Smart Meter rollout

The UK's smart meter rollout, combined with advances in battery storage and grid digitalisation, is enabling households and businesses to become active energy participants - shifting consumption, storing excess generation, or trading it in real-time markets. The result? A more resilient, efficient, and lower-cost energy system.

As an example; this is where independent aggregators such as Levelise come in. They allow domestic customers to trade flexibility services in energy markets. Their success has translated directly into financial results for households, having paid over £2 million to its domestic customers with batteries to date, with 94% exceeding their projected flexibility payments since 2019. On average, each customer has earned over £154 per year simply by allowing Levelise to optimise their battery. This continues to prove that residential flexibility isn't just technically possible - it's commercially powerful.

Achieving the government's net zero goals will also require a power system that is not only clean but also smart and capable of adapting to fluctuations in supply and demand. One example of this adaptability is directly curtailing solar generation - intentionally reducing output to balance the grid or prevent oversupply without requiring any co-located battery. Independent aggregators can enable this by coordinating distributed energy resources and making real-time decisions to maximise value for asset owners while supporting grid stability.

The benefits stretch far and wide, including:

Supporting the local grid

Local grid operators (DSOs) need help managing supply and demand - especially in areas with congestion or limited capacity. By reducing solar output on request, independent aggregators can unlock payments through DSO flexibility tenders, helping homes support their communities while being rewarded for it.

Beating the tariff trap

Some smart export tariffs, like Octopus Agile Outgoing, drop to zero when energy prices go negative. That means no payment for exported solar, no matter how green it is. But with flexibility trading, that same exported energy can be pulled into the market and earn money - even when the standard tariff pays nothing.

This shift from tariff-based earnings to market-based trading is the future. It's more responsive, more profitable, and more sustainable.

Smarter solar and storage

For homes with solar and battery storage, curtailment plays an even bigger role. It can help avoid overcharging, free up space for high-value grid services like Dynamic Containment, and ensure systems are ready to respond when prices peak.

A major industry update - Modification P444 - is currently in the pipeline. Once approved, it will make sure households are fairly compensated when their solar is curtailed as part of a flexibility service. This would remove the final barrier to wide-scale adoption and make flexibility trading even more attractive.

The bottom line is flexibility trading helps solar homes do more with less - less export, but more value. It supports the grid, boosts household earnings, and helps the UK build a smarter, greener energy system.

Levelise has recently launched its next-generation home energy device, Levelise Hub 2. It intelligently optimises homeowners' energy usage for lower bills and pays users directly for supporting a greener grid through flexibility – all while keeping the freedom to choose their own energy supplier. It is installed and commissioned in 20 minutes with a simple three-step app-based commissioning.

www.levelise.com

The guide to what's new for Renewable Energy Installer & Specifier readers, offering vital industry news.

To advertise your product in 'The Innovation Zone' section please contact **victoria.liddington@warnersgroup.co.uk**

Sync Energy powers the future of fleet transport for Blue Flame Employees

As part of their ongoing commitment to sustainable practices and innovation in energy solutions, Blue Flame, has invested in Sync Energy EV charging at the homes of its employees.

Blue Flame is an employee-owned heating, renewable and electrical business, specialising in the installation, maintenance and repair of heating & electrical systems across Cornwall.

Sync Energy's Wall Charger 2 has been installed at the homes of 21 Blue Flame employees, providing them with an easy-to-use, fast and efficient EV charging solution, as well as integrated energy payments direct to their energy providers.

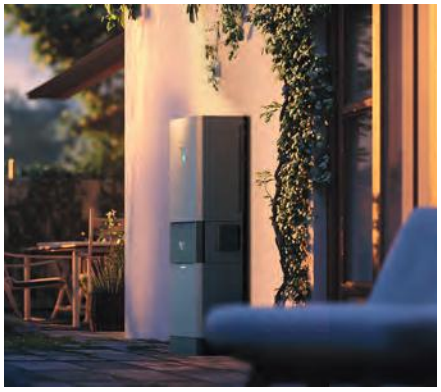
Full Smart functionality via the intuitive, Sync Energy App allows for personalised settings, such as scheduled charging and optimised cut-off points, meaning users can charge dynamically and maximise cheaper rates of electricity.

www.blueflamecornwall.co.uk
https://sync.energy/lnk

Sync Energy unveils 'flow' – the complete home energy management system for smarter, sustainable living

Sync Energy has launched 'Flow', a next-generation, fully integrated home energy system that unites hybrid inverters, modular battery storage, solar power diverters, and EV chargers, all intelligently connected via the intuitive Sync Energy app.

One connected System, total control
At the heart of the Sync Energy Flow range is a modular platform built for scalability and simplicity, available as individual components or in pre-bundled all-in-one kits for ease, all brought together in one easy to use app.



Key System Components:
- Hybrid Inverters
- Modular Battery Storage
- Solar Power Diverters

Combined with EV Chargers for the full package, including the ultra-slim, wall-integrated Link Charger for discreet, socketed charging, or the customisable Wall Charger 2, available in socketed or tethered, both offering dynamic 7.4kW charging with OCPP 1.6J compatibility and no earth rod required.

https://sync.energy/flow

Sync Energy launches 'LINK' The Ultra-Slim, Design-Led EV Charger Built for Modern Living

Sync Energy has officially launched Sync Energy Link, it's smallest, most design-forward EV charger to date. Engineered to blend seamlessly into modern living environments, Link features a unique, patent-approved two-part design, combining smart connectivity, ease of installation, and sleek aesthetics into one intelligent charging solution.

With the continued shift toward home EV charging and increased demand for discreet, high-performance solutions, Sync Energy Link arrives as a game-changing addition to the installer's toolkit.

Design-Led Aesthetics. Installer-Focused Engineering.
Available in both Wi-Fi and 4G variants, Link is engineered for durability with IP65 and IK10 ratings ideal for exposed installations. At just 37mm deep when recessed, it delivers a clean, low-profile finish perfect for new builds and design-conscious retrofits.

Its modular, two-part design allows the socket outlet and control unit to be installed separately yet supplied together as one complete kit.

Smart, Safe and Seamlessly Connected
Sync Energy Link delivers on more than just looks; it's packed with features to meet today's technical expectations. Delivering 7.4kW dynamic charging via a Type 2 socket, Link is fully compatible with the Sync Energy App and supports OCPP 1.6J for seamless monitoring and control.

https://sync.energy/lnk

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POWERQUALITY EXPERT

EXPERT IN THE MEASUREMENT AND ANALYSIS OF POWER QUALITY

MZC-340-PV

High Current Fault Loop Impedance Meter for 800V solar photovoltaic systems

Sonel®

FEATURES

- Suitable for systems up to 900VAC
- Category IV 1000V
- Remote wireless control
- IP67
- 220/380V, 230/400V, 240/415V, 290/500V, 400/690V, 460/800V

MEASUREMENT RANGES

- 230V AC - measurement current 130A
- 550V AC - measurement current 305A
- 900V AC - measurement current 250A
- 0.1mΩ resolution
- 4p method high current measurement
- SCC range 400A...111.1kA

30 YEARS TOGETHER WE MEASURE GLOBALLY

For 30 years Sonel has been producing innovative and professional test and measurement equipment, supported by a global network of specialist distributors.

Their latest products include the worlds first earth fault loop impedance meter capable of testing on voltages up to 900V and solar installation meters for testing 1500V photovoltaic systems.

PVM-1530

Sonel®

Solar installation kit: Professional meter for solar photovoltaic installations of 1500V

KEY FEATURES

- Category 1 measurements according to IEC 62446-1
- I-V curve for category 2 measurements according to IEC 62446-1
- Measurement of STC conditions according to IEC 60891

FEATURES

- Open circuit voltage up to 1500V DC
- Touch Screen Control
- Short circuit current test up to 40A DC
- Insulation resistance up to 1500V
- LoRa radio for long distance communication
- reSYNC automatic synchronisation of STC parameters with IRM-1

IRM-1 FEATURES

- Solar radiation intensity (irradiance) in W/m² or BTU/ft²h
- PV panel temperature in °C or °F
- Ambient temperature in °C or °F
- Inclination angle of panels
- Orientation of the panels with the built-in compass

POWER QUALITY EXPERT is the specialist provider of Power Quality and Harmonic Surveys, EN50160 Compliance Reports, Load Profiling, Power Quality Training and the developer of Harmographic Analysis.

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