Corporate buyers' guide

The benefits of onsite commercial solar power projects

Solar Energy UK

About Us

As an established trade association working for and representing the entire solar and energy storage value chain, Solar Energy UK represents a thriving member-led community of over 276 businesses and associates, including installers, manufacturers, distributors, large-scale developers, investors, and law firms

Our underlying ethos has remained the same since our foundation in 1978 – to be a powerful voice for our members by catalysing their collective strengths to build a clean energy system for everyone's benefit

Our mission is to empower the UK solar transformation. Together with our members, we are paving the way for solar to deliver 40GW by 2030 by enabling a bigger and better solar industry.

Acknowledgements

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Thank you also to Solar Energy UK members EDF Renewables, HBS New Energies, Photon Energy, Weightmans, and Zestec Asset Management.

Please note that the contents of this report do not necessarily represent the views of any of these organisations.

Foreword

Jonathan Bates, Chair, Solar Energy UK Commercial Working Group and Managing Director, Photon Energy

The UK solar sector is flying, and this Solar Energy UK guide is a timely reminder of the benefits for businesses who choose to invest in onsite solar power generation. Investing in onsite solar can help companies save money and reduce their climate impact. Producing electricity onsite also reduces exposure to volatile energy prices, meaning businesses can have greater certainty about the future.

Of course, as with any investment, there are practical questions to address. How quickly will a solar system start saving money? Does it take a long time to install? What are the financing options available?

This guide answers those questions and more. Solar is a simple, reliable, and flexible way to reduce costs and carbon emissions, which is why the technology is a popular one. But there is still a huge amount of untapped UK solar potential. Solar Energy UK hopes this buyers' guide will help companies around the country who are considering onsite power generation to understand more about how it works.

The guide also includes a directory of Solar Energy UK members and other solar companies. These leading manufacturers, designers, distributors and installers can help guide any firm considering installing an onsite solar system through the process from start to finish

The guide sets out what corporate buyers need to know about solar. Now, more than ever, is the time to invest.

Glossary

Battery storage – A type of rechargeable energy storage. Batteries are used to store surplus electricity produced by a solar energy system for later use

Electrification – The use of electricity instead of fuel and gas to provide energy for heat and transport. The source of electricity should be renewable (such as solar power) and not a fossil fuel (such as coal or gas) to ensure the climate benefits of electrification are realis

Electric vehicle – A car or van that uses an electric motor rather than an internal combustion engine, which uses fossil fuels such as petrol and diesel, for propulsion

The grid – The interconnected network of cabling and other equipment which transports electricity around the country

Heat pump – a form of heating that works by transferring thermal energy from a cooler to a warmer space

kW – kilowatt. A measure of electric power equivalent to 1,000 Watts

kWh – kilowatt hour. The provision of one kilowatt of electric power for an hour. A typical home in the UK uses around 10 kWh of electricity per day

MW - megawatt. A measure of electric power equivalent to 1,000 kilowatts

MWh - megawatt hour. The provision of one megawatt of electric power for an hour

Net zero - this means that any carbon or other emissions produced by an economy are balanced by the equivalent amount of emissions being taken out of the atmosphere. Achieving net zero requires both reducing absolute emissions, and offsetting any that remain

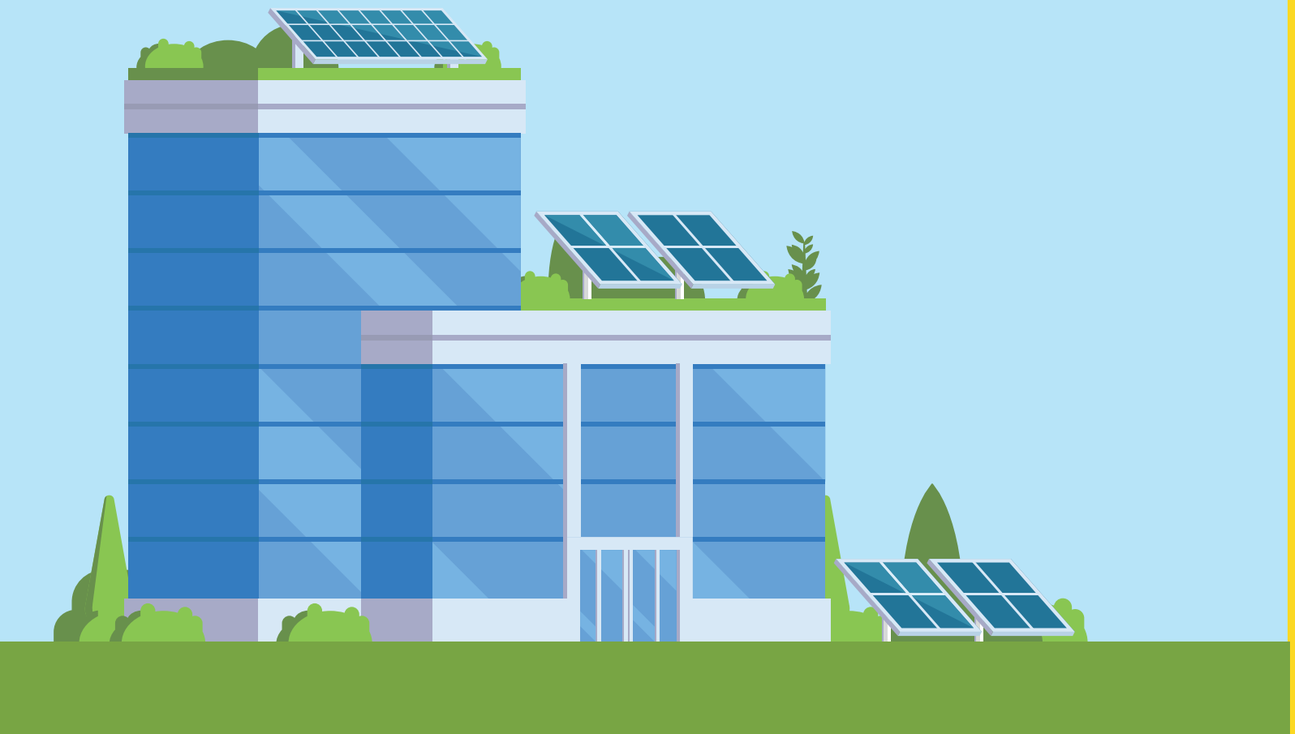
Offtaker - this refers to a business which has agreed a contract to buy electricity as part of an energy project

Self-consumption – this refers to electricity produced by a solar power system that is used on the premises by a business itself (as opposed to being sent to the grid)

Solar PV – photovoltaic. A type of solar energy system which converts light into electricity

Solar PVT – photovoltaic thermal. A type of solar energy system which produces electricity and heat

Solar thermal – a type of solar energy system which produces heat



Contents

Summary

This guide provides an introduction for corporate energy buyers interested in onsite solar photovoltaic (PV) power and solar heat generation. It includes an explanation of how solar systems work, the key steps needed to set up a solar project, and information on the commercial considerations corporate buyers should take into account. It also includes a directory of Solar Energy UK members who design, install, finance, and manage onsite solar projects.

The guide answers common questions that explain why commercial solar systems are experiencing record growth in the UK. This should not be surprising: solar power is low-risk and high-benefit, and can come at zero cost. Installing a solar system is therefore a powerful way for a business to improve its financial and sustainability position at the same time

Solar Energy UK's advice for companies considering installing solar power is to read this guide and then contact one of the Solar Energy UK member companies in the directory included. They will provide you with clear advice on how to proceed with your solar power project.

Context – the UK solar industry

The commercial solar power industry is a major economic success story, and 2021 saw record growth in the subsidy-free market. Commercial and industrial customers are installing solar around the country, and new sectors are committing to major renewable energy generation, such as the water industry, which has a target of deploying 3GW of onshore renewable capacity by 2030.[1] Businesses are installing solar in multiple locations: on their rooftops, on adjacent land, and on other parts of their premises, such as car parks, where solar carports are being installed to provide clean electricity to charge cars and power buildings.

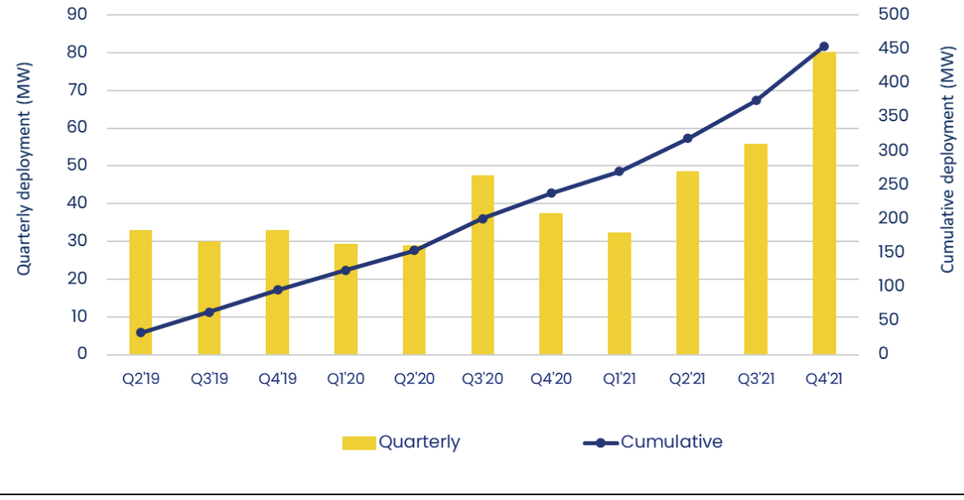
Solar is a popular commercial power generation technology for several reasons:

- It is affordable. Solar panel costs have declined by as much as 60% since 2010,[2] and the payback period on a commercial solar project can be less than five years. The system then effectively produces free electricity for a further 25 years or more, with any increase in other energy prices making solar an even more compelling proposition. Under some forms of financing, external investors will fund the solar system, meaning companies can save money without spending any of their own capital. .
- It is reliable. Solar projects generate power all year round. Because there is extensive data on levels of irradiation – light – it is possible to produce a highly accurate forecast of annual power generation. This means that solar projects deliver stable returns. It also means businesses can reduce their exposure to electricity price volatility.
- It is simple and quick to deploy. It can take less than 12 months to deploy a rooftop solar project from concept to completion. Installing a solar system is therefore an effective way for businesses to make swift progress on their cost and carbon emission reductions.
- It delivers proven environmental benefits. Solar power is zero-carbon at the point of use, enabling businesses to improve their sustainability and help address climate change.

Graph 1 below shows the deployment of commercial rooftop solar projects since the end of subsidised solar systems in the UK. This shows the rapid growth in the commercial rooftop solar market in the UK.

Post-subsidy commercial scale PV deployment

Source: Solar Media Ltd., 2022. Release date: February 2022



This growth is particularly welcome given the UK's goal of achieving a net zero economy by 2050. To do so, 40GW of solar capacity must be installed by 2030. Solar Energy UK's Lighting the Way report provides further information on how the UK can achieve this target, including government policies that would support the deployment of around 7GW of commercial scale solar power. This is nearly double the generation capacity of the planned nuclear power plant at Hinkley Point, showing just how much solar potential there is in the UK.

Onsite generation – why invest?

There are multiple benefits to installing an onsite solar project for commercial organisations.

First, solar power projects generate robust financial returns. This is because producing power onsite is much more affordable than buying it from the grid. Current government policy also means, for example, that companies can reduce their tax liabilities for investments they make in solar systems.

Second, solar projects reduce risk. As the UK energy crisis of 2021/2022 showed, market rates for electricity and gas can change rapidly. Producing power onsite at a fixed cost means businesses can avoid exposure to this volatility.

Third, solar projects reduce greenhouse gas emissions. Solar power is zero-carbon at the point of generation. This improves the environmental performance of any building on which it is installed.

Finally, these benefits will only increase as time passes. Businesses which install onsite solar power generation are helping to protect themselves against future risks – for example, from further increases in energy bills, or the introduction of policies which impose carbon taxes. Developing onsite generation capacity now also means they have a source of clean, affordable energy for other low carbon technologies, such as electric vehicles and heat pumps, which are rapidly being installed.

These benefits are widely recognised by businesses around the UK, which is why the UK's commercial scale solar sector is going from strength to strength.

How does a solar power system save money?

Solar systems save money because they reduce the amount of electricity which a business needs to buy from the national grid. This is because the building on which a solar system is installed directly produces some of the electricity consumed in the building itself. The cost of this, net of the cost of installing the system, is much more affordable than buying electricity from the national grid.

For example, if the net cost of producing electricity from an onsite solar project is 10p / kWh, and the cost of buying electricity from the grid is 20p / kWh, then a company would save 50% on the proportion of electricity it uses which is directly produced on site (by the solar system). This is why a key aspect of solar project design is to ensure that this 'self-consumption' matches a building's demand for electricity as closely as possible. Any surplus electricity produced can also be sold back to the grid.

How solar works

Solar PV systems convert sunlight into electricity. These connect directly to the building's electrical system, feeding its lighting, computers, servers and other power demands. Any electricity not used onsite can be exported to the national grid, receiving payment for doing so. The system can also be installed with energy storage, such as a battery. This means that surplus power can be stored and used later – for example, to support night-time operations.

A commercial scale solar system is any non-domestic system, although generally excluding large scale solar farms which connect directly to the national grid. In other words, commercial scale systems are those designed and financed to provide power to the premises of the site on which it is installed.

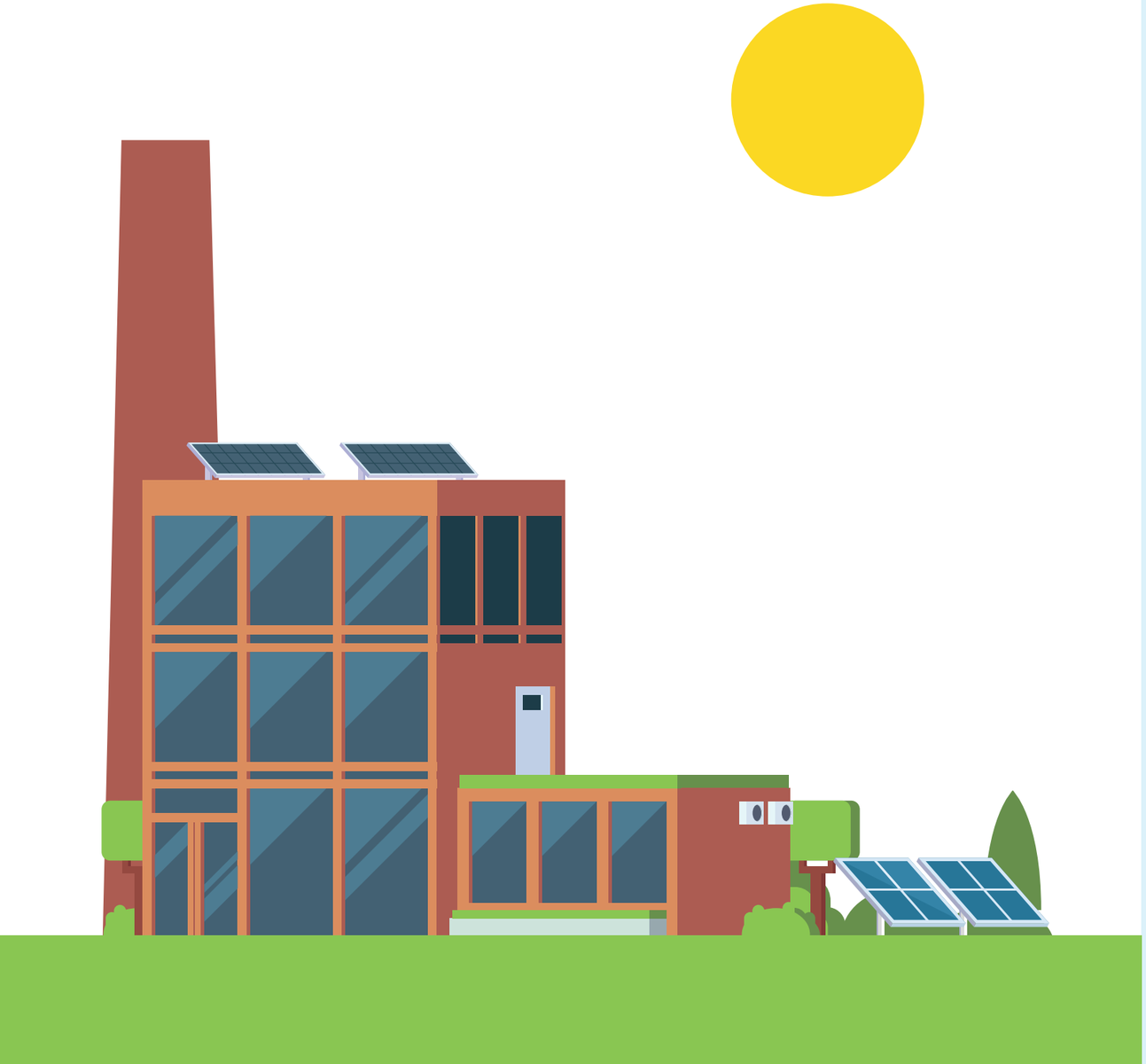
For practical purposes, the government defines microgeneration as the generation of electricity by systems with a capacity of up to 50kW. Commercial scale solar PV projects can range from small systems of this size, which would require around 125 solar panels, to very large projects on industrial premises of up to 5MW, or even larger. Examples of the size of typical onsite solar projects are included in the table below.

Table 1: example onsite solar projects

Size (kW / MW, panels)[3]	Example site	Potential roof, land or water[4] area needed (panels only)[5]
50kW / 125 panels	Business or retail unit	180m²
100kW / 250 panels	School, council building, swimming pool	360m²
500kW / 1250 panels	Hospital, cinema, leisure centre	1,800m²
1MW / 2,500 panels	Warehouse, university, manufacturing facility	3,600m²
5MW / 12,500 panels	Large distribution centre (multiple buildings), port, reservoir	18,000m²

Solar systems can be installed on flat or sloping roofs, which do not necessarily need to be south facing. Panels can be installed with ballast, on a mounting rack, or integrated as part of the roof itself, by replacing roof tiles. Businesses with adjacent land can also install a ground-mounted system. Installing solar panels above a car park is also an option, although it is more expensive. There are now many 'carports' around the UK, where this type of system can be used, for example, to provide the power for electric vehicle charging, or the building itself.

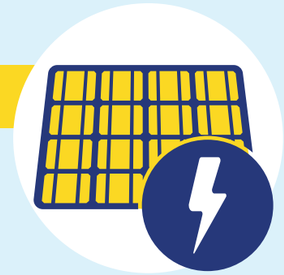
As with any electrical or mechanical installation, solar systems should be regularly inspected and maintained by qualified professionals. However, properly installed and maintained systems should last for at least 30 years. Operational and maintenance (O&M) requirements include monitoring a system to check that it is producing the intended amount of electricity, and cleaning the panels if they become dirty. Solar Energy UK has published guidelines on rooftop O&M best practice.[6]



Solar system components

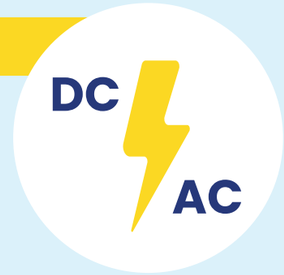
Panels

These convert sunlight into electricity.



Inverter

This converts the direct current (DC) electricity which solar panels produce into the Alternating Current (AC) electricity that buildings and appliances use. Inverters can be installed where convenient.

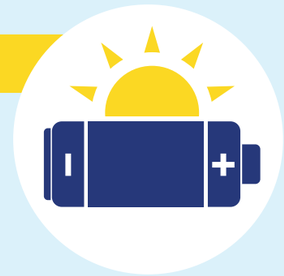


Meter

This measures how much electricity is generated by a solar system, how much is consumed on site, and how much is exported to the grid. Solar system monitoring software can use this information to help ensure maximum performance by identifying any faults which arise. These may be indicated, for example, by a system producing less power than expected.

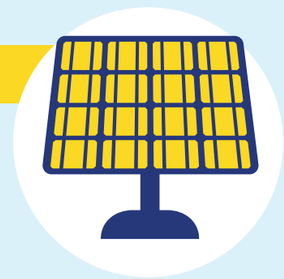
Energy storage

Batteries can help store surplus electricity – when more electricity is being generated than is being consumed – for later use. Small batteries can be installed where convenient. Large batteries may need external space – for example, enough to accommodate a shipping container.



Mounting system

This is used to fix solar panels to a roof or other structure (solar panels can also be installed as part of the roof itself, or on ground-mounted sites).



Case study – Lynx, Next, Aviva

Type of project: Rooftop solar PV

Installed capacity: 2.4 MWp

Annual carbon savings: 447,300 kg

Location: Yorkshire

In 2021, Lynx completed a 2.4MW PV system on the roof of a distribution centre run by retailer Next in Yorkshire. The project was self-funded by the property owner, Aviva.

The system will reduce carbon emissions by nearly half a million tonnes each year. The project also included refurbishing the membrane on the roof, which, with a new 25 year warranty, will provide peace of mind that the system will last. The system will provide estimated annual energy cost savings of at least £351,000 per year for the building.

The project was successfully completed around a number of challenges:

- Interacting with a main contractor on the new build extension while being self-sufficient on the re-membrane of the existing roof.
- Causing zero disruption to the day-to-day activities of one of the busiest distribution centres in the country
- All cabling had to be external to the building, so a cable riser to match the building envelope was designed and installed.
- All inverters were to be external, so two separate inverter housings were designed and built. These match the building envelope and hold all required distribution and inverter equipment.
- The 14,000m2 high bay had to have a full re-membrane in order to facilitate the PV, all while not affecting the new build extension or site activities

Kris McPhail, Fund Manager at Aviva Investors, said: “We are pleased to report the completion of the solar PV installation at Next’s distribution site. This project showcases our commitment to renewable and clean energy solutions in alignment with our net-zero strategy. Financing clean energy initiatives not only provides effective engagement with tenants on net zero initiatives, but also further enhances the environmental resilience of the asset and provides stable and tangible financial returns.

Darren Walsh, Managing Director at Lynx, said: “We are once again delighted to have supported Next with the delivery of this landmark project, it clearly demonstrates their ongoing Net Zero ambition.”

Investment considerations

There are a number of factors relating to their business which prospective buyers should take into account as part of their consideration of a solar project. These are discussed below. Solar Energy UK member companies will be able to advise you on the best course of action relating to each.

Business case

- What is the principal motivation for installing the project? Solar power systems can be optimised to deliver different benefits: the highest absolute financi return possible, the best unit price for electricity, or the biggest environmental impact. The system will be designed differently to reflect this
- Related to this is the inverse: what risk, if any, is the business trying to minimise? Onsite power generation can lower current energy costs, because it enables businesses to produce a proportion of their own power demand. It can reduce exposure to price volatility, because companies can ensure a fixed price fo their electricity for several years. And it can help futureproof a business, by ensuring that the environmental performance of its assets is upgraded in advance of any future regulation imposed to reduce carbon emissions.

Financing

- If the business intends to pay for the solar project itself, does it have the cash, credit or balance sheet for the capital investment?
- If the business intends to work with an external funder and agree a fixed price fo its power, how long will it be fixed for, an what if any model will be used to account for (known) cost escalation? For example, the price could be linked to the Retail Price Index, the Consumer Price Index, or the cost of grid electricity.
- The returns on a solar system vary according to many factors: in particular, how large it is, and how much power is self-consumed on site. This is significan because, for example, a large project that is more expensive in absolute terms may actually deliver a stronger financial performance over the life o the investment. This should be taken into account as part of the appraisal process.
- The investment model for the project should ensure that the cost of operation and maintenance (such as the monitoring of system performance, and cleaning of the solar panels) is factored in.

Product and system design

- As with any capital project, there is a variety of solar equipment and products available which have different performance and cost implications. These should be considered as part of the design of the project.
- If the business operates across multiple sites, it may be possible to install solar projects across several of these at once, benefiting from the economies of scal which apply across a portfolio of projects. As such, the full extent of a company's premises should be mentioned to any prospective solar company the business is considering working with.
- Where is it physically possible for the business to install a solar system? Onsite solar can most obviously be installed on the roof of relevant property. But it can also be installed on or above a car park, or any adjacent land available.
- A key question is whether to include an energy storage system, such as a battery. Installing a battery means that instead of selling any surplus energy produced by a solar system, it can be stored and used onsite. This could enable the use of zero-carbon electricity for night-time operations, and potentially mean the installation of a larger number of solar panels in the first place, to maximise th onsite generation. However, the project will cost more initially.
- Businesses with high heat demand, in particular – such as hotels, schools or leisure centres – could consider installing solar thermal technologies.
- Technologies such as thin-film sola PV offer flexibility in product an installation types.

Business growth and climate policy

- One of the important design questions for a solar system designer is to aim to match the quantity of electricity the system produces with the amount needed by the business. This can be done very accurately with 12 months of half-hourly electricity consumption data. Businesses need to understand their current and likely future electricity demand, which needs to be sufficient to justify the size of th installation.
- However, if the business expects to grow, it may be worth building a bigger system, to meet the increase in electricity this will entail. In addition, the government's strategy to address climate change is to electrify both heat and transport. This means using electricity generated from renewable sources, such as solar, to supply electric heat pumps and vehicles. This may imply a big increase in onsite electricity demand – for example, for employees who wish to charge electric vehicles at work. If a company would like to provide the opportunity for them to do so, then it may be worth building a bigger system to enable this to take place.
- For rooftop projects, the roof itself needs to be of adequate size and condition, and there should be no other projects in waiting. For example, if there is a medium-term intention to replace a roof, installing a solar project should be done as part of this (or after), not before. The suitability of any land intended for a solar system should also be assessed.

Project management and legal issues

- It is important to understand what if any solar-relevant assets the business owns – land, buildings, or other property. It should be noted that not owning these is not a problem, as lease agreements can be set up where necessary, and landlords are unlikely to turn down projects that improve the attractiveness of their property.

How much does a solar project cost?

The capital expenditure required to install commercial solar project itself includes the following costs:

Pre-development costs. These could include feasibility assessments, surveys, and planning. Businesses considering installing solar should make sure their project is discussed with relevant partners, such as the local distribution network operator (DNO) and their insurers.

Legal and professional costs incurred by partners in the project, particularly for a Power Purchase Agreement.

The relevant equipment costs – such as solar panels and their mounting racks, inverters, and cables.

Engineering and construction costs, including for services such as the erection of scaffolding or use of lifting equipment.

Grid costs. This relates to the work involved to connect a solar power generation system to the electricity network.

Any certification and processing fees required.

The cost of solar panels in the UK has declined by around 60% since 2010, which is one of the reasons why solar is such an affordable improvement a business can make to its assets. Solar Energy UK carries out detailed research on solar installation costs, and as of 2021 this indicated that the total cost of installation for commercial scale projects at the time of writing was approximately £615 / kW. This means, for example, that a 100kW solar system would cost approximately £61,500 to install. Note that the effective cost of electricity produced from a system will vary based on the factors described in this guide.

The operating expenditure required to run a commercial solar project includes the following costs:

The ongoing staff time needed to oversee the good running of the system

Operational and maintenance work

Insurance

Dismantle and recycle the system at the end of its lifespan

Note that under a Power Purchase Agreement (PPA) model, it is possible for businesses wishing to install an onsite solar project to secure third party financing for the package of costs outlined above. This means that they can benefit from clean power, while still saving on their energy bills, for zero capital outlay. See the *Solar financing* section below.

Business rates

Major progress has been made on the tax treatment for solar systems. A historic challenge with this was the unfair penalisation of solar power compared with other types of onsite power generation, which could increase business rates liabilities for companies, unless they set up a special legal structure to mitigate these.

However, in the Autumn 2021 Budget, the government announced that solar and energy storage projects in England would in future be excepted technologies. This was a major victory for Solar Energy UK, which has called for the change for a long time. It will also provide a significant boost to the already favourable economics of solar projects, and so should help increase deployment further.

Solar Energy UK continues to engage on business rates in other parts of the UK.

Case study – Photon Energy and Crown Paints

Type of project: Rooftop

Installed capacity: 185kW

Location: Crown Paints Ltd – Hull

Crown Paints is one of the UK's largest and most successful paint manufacturers and in January 2022, opened a new state-of-the-art raw material and packaging warehouse facility at its manufacturing base in Hull. The warehouse is the result of a £4.4 million investment by Crown Paints and creates an additional 4,265m^2 of storage space for raw materials and packaging. The new facility enables the company to consolidate its operations from several older buildings into one modern facility – and in doing so allows Crown to repurpose the existing buildings to accommodate future growth. As a part of the project, a decision was taken to install solar PV on the new facility as part of the company's sustainability strategy. Following a competitive tender process, Photon Energy were appointed to design, supply and install the solar PV system.

The 185 kW solar PV system is installed across the two southerly pitches of the new warehouse building and is connected to Crown Paints' factory power network via a dedicated spur and is fully integrated with the factory's power management system. The system will generate some 152 MWh of clean electricity each year saving over 35 tonnes of CO^2 annually. The solar panels were manufactured by Trina Solar, the mounting system by K2 Mounting Systems and the inverters and Power Optimizers by SolarEdge.

After detailed discussions between Crown Paints and the Photon Energy team, it was decided to install the systems using SolarEdge's DC-optimised technology. This provides a number of benefits including module-level monitoring; enhanced safety; full integration with the site's fir alarms through the SolarEdge Firefighter Gateway, and greater energy generation from each solar module. SolarEdge Monitoring delivers detailed, real-time analysis of the PV system's technical and financial performance as well as the potential to monitor additional PV sites across Crown Paints' facilities in the future. Its enhanced safety features include SafeDC™ - which de-energises the solar array to a touch-safe voltage whenever the inverter or AC power is shut down, protecting personnel and property.

In 2020 as a part of Hempel Group, Crown Paints launched their new strategic growth plan, Double Impact. Becoming a sustainability leader is one of three key principles within the strategy. The use of renewable energy within manufacturing operations was identified as an opportunity to support the strategy and was the reason for making this investment. The system was financed directly by Crown Paints as part of its 2021 Project Portfolio

Crown Paints had to gain approval from the Hempel Group fire safety officer as solar P installations are regarded as a potential risk by their insurers, but he was wholly satisfied with the suggested design and the safety features incorporated within it.

The project was a direct engagement between Crown Paints and Photon Energy which allowed Crown Paint's technical team to work closely with the team at Photon Energy. This meant the system was well aligned with the Crown Paint's specific requirements as well as enabling any site issues to be addressed quickly and easily and the installation went extremely smoothly with no disruption to the site's operations.

As a manufacturing site, a strict health and safety protocol is in place. Each member of the Photon Energy installation team had to complete a thorough site induction before being allowed on the site and a daily permit to work system was in force for both general works and additionally for roof works. The final connection of the PV system to the main electrical panel board was done out of hours on a Saturday as the main board had to be shutdown for safety reasons.

Tim Hewitt, Senior Project Engineer at Photon Energy said: "The project at Crown Paints Hull was particularly rewarding project to work on. It is a well engineered system, that makes good use of the roof space available and will contribute meaningfully to the facilities' energy consumption and to Crown's environmental goals. We look forward to working with Crown Paints on their PV portfolio in the future."

Adam Sellars (Hull Site Engineering Manager) said: "Photon Energy have been a great partner to work with for this project, from the initial enquiry to completion of the works. The installation allows our new warehouse to be self-sufficient in electrical energy consumption and the visualisation tools offered by SolarEdge's monitoring portal allow me to continuously monitor the system's health and check the levels of power we are generating. I would happily recommend Photon Energy to others considering such a project."

Solar financing

One of the main considerations for a solar project is how to pay for it. A summary of solar financing options is included below, outlining the different benefits. Note that a solar company will lead on solar project design, installation and management, the procurement and legal work involved, the operation and maintenance of the system for its lifespan (which can include 30 years or more of zero-carbon, low-cost electricity), and any decommissioning required at project end.

Description	Suitable for	Capex	Opex	Benefits
Self-funded	Private companies	System owner	System owner	Higher absolute returns
Self-funded (public sector)	Public sector organisations	System owner / govern-ment, via grant or other scheme	System owner	Higher absolute returns
Asset finance (lease or hire purchase)	Public and private sector	System owner / external investor (as part of lease or hire purchase agreement)	System owner / external investor (as part of lease or hire purchase agreement)	Lease payments can be covered by savings Well understood finance model
Power Purchase Agreement	Private companies, public sector organisations	External investor	External investor	Zero capital outlay

Self-funded

Solar system buyers can fund the project themselves, paying for the equipment and installation, and receiving the full financial benefit of the power produced on site. The major advantage of a self-funded project is that the company owns its solar assets, and will generate better returns.

Prospective solar system users could set up a lease or hire-purchase agreement, as for other assets. An external investor will buy the solar equipment and either lease it, or sell it through instalments on credit, to the system owner. This can be structured so that it is cash flow neutral: in other words, that the payments on the lease are covered by the savings on electricity.

For non-profit and public sector organisations, such as schools, hospitals, and government departments, support is available for capital expenditure. The Westminster and devolved governments have a range of grant financing schemes (run through organisations such as Salix), which are intended to support the decarbonisation of the UK's buildings. These provide financing to cover capital expenditure on projects such as solar power systems. Contact Solar Energy UK, which monitors the availability of such grant schemes, for more information.

Power Purchase Agreements

Prospective corporate buyers can also secure funding from external investors under a Power Purchase Agreement (PPA), whereby the electricity user, or offtaker (the building owner or user), agrees to buy the power generated by the solar system – which is paid for and owned by the investor – from that investor for a given period of time. This is typically 10 – 15 years.

There are several different forms of PPAs, but this guide relates to those known as a 'private wire', where the power a solar system produces is consumed onsite by the business premises, to which the system is directly connected through an electrical connection (hence 'private wire'). In this model, third party capital covers the entire cost of the project. The investor receives a share of the savings the business makes on its power costs. This revenue streams covers the cost of installation and provides a return.

Saving and investment

The cost of a solar power project is paid back through the electricity on savings it produces. For example, a project might generate a gross saving of £100,000 a year on the energy bills of the business which installs it. In the case of a self-funded installation, the system owner will receive the full saving of £100,000, although it will also have paid for the equipment and installation. This will be factored into its financial model.

In the case of a PPA, the external investor might receive £40,000 from the annual £100,000 saving, for the duration of the PPA. This will cover the cost of the capital it invested in the project, and provide a return. The net saving for the business which benefits from the solar system would still be £60,000 per year, without having to spend any of its own capital.

However a solar system is financed, because the price of electricity which it generates is effectively fixed (subject to known cost escalation models), this also means that for at least a proportion of its energy costs, the business which has installed it can eliminate exposure to price volatility. Solar systems cap the maximum expenditure a business will pay for part of its electricity costs. The inverse is also true, which is why solar systems are an attractive option for external investors looking for stable returns: they guarantee a minimum return on the project, which is the price of electricity agreed for the duration of the project, under, for example, a PPA.

There are also fiscal incentives which support solar power. For example, the March 2021 budget included the welcome announcement that companies would be able to reduce their tax liabilities for investments they make in certain low-carbon assets, including solar.[7] This policy is currently planned to last until April 2023, and Solar Energy UK has called on the government to extend it until at least 2030, to support its 40GW by 2030 deployment target. See Solar Energy UK's Lighting the Way report for more detail.

Frequently asked questions

This section answers common questions relating to the installation and management of commercial solar projects.

We don't own our building. Can we still put solar on the roof?

Yes. Establishing a roof-lease agreement with the landlord means you will be able to use the roof for a solar installation. The same framework can be used for other siting arrangements (for example, if there is land adjacent to the property on which the system could be installed).

What if our business grows and we need to move premises?

The presence of on onsite solar system should be a major draw for prospective building owners or tenants. This is because they will occupy a higher-quality asset than they otherwise would, one that will reduce their energy costs and carbon emissions compared with non-solar premises. No business can function without an energy supply, so there is guaranteed demand for the benefits of the solar system. Note that if the system has been financed through a PPA, prospective buyers or tenants may wish to take on the agreement, or be subject to a buy-out clause.

Can a solar system be adapted if our energy needs change?

Yes. Solar systems are flexible and can often be increased in size to accommodate changes in energy needs. This might be, for example, if a company decides to electrify its fleet and has higher electricity usage as a result, or if it wishes to install an energy storage system. The company should contact its original project partner or another solar company to explain the change in its circumstances, and learn more about how its solar system could help address these.

How quickly can a solar project be installed?

It can take less than 12 months from making initial inquiries with a solar installation company or project developer to having a system installed, operational, and producing carbon and cost savings. Note that one of the major variables in project development is the time required by Distribution Network Operators (DNOs) to consider applications to connect to the grid, as well as other planning work. DNOs will require a minimum of 45 working days to consider an application to connect a solar PV system to the grid and any connection offer may have conditions attached. In most circumstances, for systems larger than 1MW, it will be necessary to obtain planning permission. This can take up to three months.

I am a landlord. Why should I install a solar project if my tenants receive the benefit?

In this scenario there are still major benefits to installing onsite solar. Rigorous Solar Energy UK research demonstrates that installing solar PV increases the value of residential property.[11] Although no comparable research currently exists for commercial property, installing solar may also increase its value, and increase the speed at which it can be let, given the advantages for tenants. Installing solar should also enable landlords to generate a return from any leasing agreement, for example for the roof space used to install a solar system.

Solar Energy UK intends to conduct further research on the value of commercial solar property.

What are the biggest risks?

As with any project, solar systems are not entirely risk free. The major risk for a solar project is not employing a high-quality installation company to carry out the work, and going for the cheapest quote available.

Businesses which wish to install onsite solar power should make sure they carry out due diligence, and employ a solar company with a proven track record in installations of the scale under consideration.

Once operational, another key risk is failing to monitor and maintain the system correctly. Not doing so means possible faults could go undetected, therefore reducing system performance.

Another possible risk is energy usage dropping below the point at which the project delivers expected returns. This means that the savings produced by a system will not be as high as intended. This is why it is important to have a clear understanding of current and projected future energy demand as part of the project appraisal process. Energy demand may reduce as other business processes are improved and become more efficient, or as less energy-intensive equipment is installed onsite.

However, these factors can be taken into account in project planning, and as noted elsewhere, energy demand is in general expected to increase very rapidly in the next 10 years. This is because of the electrification of heat and transport which government policy will drive. For example, from 2030 it will not be possible to buy a new petrol or diesel car or van. This may also increase demand for electricity at business premises, because, for example, employees may wish to charge their electric vehicles at work.

The failsafe in this regard is the financial return that the project will deliver purely from selling electricity to the grid. If a solar project breaks even based on exporting a hundred percent of the electricity it produces to the grid, then there is minimal financial risk

What is a typical process for installing a solar system?

An outline of a solar system installation process is included in section nine of this guide. The first and most important step is to contact a Solar Energy UK member company for advice on how to proceed with your interest in a solar power system. A directory of leading commercial solar companies in the UK is included in this guide.

Solar steps

The following process includes key steps needed to set up a commercial scale solar project. Note that there are specialist project management and consultancy firms who can assist where necessary, for example with feasibility studies.

1

Contact a solar company with an idea of what you would like to achieve with your solar project, your energy usage, the legal status of your property and assets, and a description of these.

2

The solar company will discuss your objectives with you, in order to provide an initial indication of the feasibility of your project.

3

A more detailed assessment will then need to take place, including a survey of the site, and energy and financial modelling relating to your business needs. As part of this any planning permission and grid connection permits may also be obtained. All planning and other consenting work should be carefully managed to prevent delays.

4

Any legal or other agreements, such as a roof lease or Power Purchase Agreement, will be negotiated and signed. Businesses should also make sure they discuss their project with their insurance companies.

5

The solar system itself will be installed, involving electricians and engineers working on site. Note that this can be disruption free, if necessary – power does not necessarily need to be shut off, and businesses can operate as usual.

6

Once the project is switched on, it will begin producing onsite electricity for the business, and will continue to do so for the lifetime of the project. This may be over 30 years.

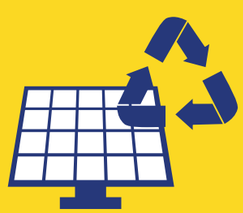
7

Regular performance monitoring and maintenance, such as cleaning, will help ensure the system operates as effectively as possible.

8

Companies may wish to highlight the improved sustainability of their operations delivered by their solar system. One common example of how do to this is by displaying power generation and carbon reductions on a company's website, or in public areas of their premises, such as reception.

9



At the end of the project, the solar system can be dismantled and recycled.

Directory

The directory below provides contact and other information on commercial UK solar companies. All of the companies are members of Solar Energy UK. These companies will be able to advise you on the most effective onsite solar power system for your business.

Company	Description	Address	Contact
Conrad Energy	Conrad Energy's generation portfolio powers the equivalent of over a million homes from embedded, flexible generation projects, solar and battery storage. Conrad Energy has over 150 experts dedicated to supporting critical national infrastructure, enabling the UK's energy transition to net zero by 2050. Our growing energy services business supports the delivery of energy solutions to commercial and industrial businesses which optimise energy use for our customers, network operators and the national grid.	**Windrush Court, Units D and E, Blacklands Way, Abingdon OX14 1SY**	**01235 427 290** **conradenergy.co.uk**
Segen	Wholesale distributor of solar PV (photovoltaic), energy storage systems, electric vehicle charging and associated components. There are many benefits to working with Segen for solar energy supplies. Segen can offer attractive prices on solar solutions, energy storage systems and electric vehicle chargers, with high product availability as well as excellent customer service. Segen offers a unique customer portal, allowing customers to browse, design a complete system and order, 24/7.	**Segen Ltd, Suite 2, Wesley Hall, Barrack Rd, Aldershot GU11 3NP**	**0330 9000 141** **segen.co.uk**
UPOWA	UPOWA provide all-in-one sustainable technology products and specialist services, accelerating the transition to net-zero for the housebuilding, construction and commercial industries.	**Unit 9 Fulcrum 1, Solent Way, Whiteley, United Kingdom PO15 7FE**	**02380 987499** **upowa.co.uk**
SolarEdge	Manufacturer and energy solutions. SolarEdge has helped companies of all sizes move to profitable and clean renewable energy. SolarEdge's commercial solar solutions have been proven to bring value to a broad range of applications such as: • Commercial rooftops including carports, gas stations, shopping centres, and hotels • Industrial rooftops including manufacturing sites, factories, and cold storage facilities • Public premises including schools and universities, municipal buildings and hospitals. • Agriculture (agrivoltaics) • Floating systems	**15 Chester Road, Colmworth Business Park, Eaton Socon, Cambridgeshire, PE19 8YT**	**0800 281 183** **solaredge.com/uk**

Company	Description	Address	Contact
Absolute Solar and Wind	Renewable Energy Solutions. Energy savings consultancy, design, installation and maintenance. Renewable enegy solutions specialists. We help businesses to install contemporary low carbon technologies in solar, wind, biomass and energy efficiency solutions.	**Estuary House Peninsula Park Rydon Lane Exeter` EX2 7XE**	**03330 433 233** **bcrassociates.co.uk**
AES Solar	Design, manufacture and install solar energy solutions. We dedicated ourselves to being true solar experts, focusing on nothing other than improving the ways in which we can harness the power of the sun as a sustainable energy source for our customers.	**AES Solar, AES Building, Lea Road, Forres, Moray, IV36 1AU**	**01309 676 911** **info@aessolar.co.uk** **aessolar.co.uk**
Aceon Battery Solar Tech Ltd	Energy Storage Systems. Battery energy storage systems. Residential and Industrial battery storage. PV Panels, inverters & renewable energy. AceOn are a pioneering energy storage and battery company. We are a Telford-based company who work across the UK.	**Unit 9B, Stafford Park 12, Telford TF3 3BJ**	**+44 (0)1952 293 388** **aceongroup.com**
Anesco	Solar and renewable technologies supply and installation. Fueled by the sun – Powered by Anesco. With over 2 million solar panels for business and commercial applications installed across the UK, Anesco is leading the way in the supply and installation of solar schemes and other renewable technologies. Find out how we help companies cut costs, minimize exposure to fluctuating energy prices and reduce carbon emissions as part of the transition to net zero.	**Anesco Ltd, The Green, Easter Park, Benyon Rd, Reading, Berkshire RG7 2PQ**	**+44 (0)845 894 4444** **anesco.co.uk**

Company	Description	Address	Contact
Atrato Onsite Energy plc (ROOF)	Atrato Onsite Energy (ROOF) provides complete renewable energy PPA solutions for corporates, landlords and other industrial energy consumers which require zero capex upfront investment. From the development stage to decommissioning, ROOF manages the whole life cycle of the asset. ROOF is one of the largest funders of commercial rooftop solar in the UK and is listed on the London Stock Exchange. Our experts will provide a tailored solution for you, future proofing your business and taking you on a journey to net zero.	**4th Floor, 36 Queen Street, London, EC4R 1BN**	**+44 (0) 20 7332 0973** **enquiries@atratopartners.com** **atratoroof.com**
Barilla	Large Scale Solar Heating. A new generation of energy and carbon savings. For many organisations, Larger Scale Solar Heating (LSSH) offers the best opportunity to reduce fossil fuel consumption and lower their green house gas emissions whilst benefitting from the Renewable Heat Incentive (RHI)	**2, Dell Buildings, Milford Rd, Everton, Lymington SO41 0ED**	**01590 671997** **barillasolar.co.uk**
Bauder	The BauderSOLAR photovoltaic (PV) solution for flat roofs. Features the integrated system in which the solar PV module and the substructure are combined to form a single unit, which is secured to the roof without any penetration of the waterproofing or roof deck. This ensures that the integrity of the roof is upheld throughout the installation of the PV array.	**70 Landseer Rd, Ipswich IP3 0DH**	**01473 257671** **bauder.co.uk**
Beba Energy	BeBa Energy UK specialise in three key areas – solar PV, energy storage and EV charging infrastructure. Our engineers have unrivalled experience to take your project from conception to completion to management. BeBa are also proud to offer a range of solar panel maintenance services that are available to both BeBa and non-BeBa clients.	**Head Office Unit 11 Sovereign Park, Cleveland Way, Hemel Hempstead, Hertfordshire HP2 7DA**	**01442 220 100** **beba-energy.co.uk**

Company	Description	Address	Contact
Business Cost Reduction Associates Limited	Specialist procurement consultancy. Our aim is to help businesses drive efficiency through the implementation of a robust energy strategy which focusses on the need to reduce carbon emissions, cut energy consumption and ensure sustainability.	**Estuary House Peninsula Park Rydon Lane Exeter` EX2 7XE**	**03330 433 233** **bcrassociates.co.uk**
Burges Salmon	Independent law firm with expertise in energy, utilities and the environment. The energy sector moves quickly. Our clients need advisers who understand not only where the sector is today, but also where it will be tomorrow. Our award-winning energy lawyers innovate and deliver creative solutions. From groundbreaking projects to unparalleled regulatory insight, we provide the very best advice on all aspects of energy law.	**(London office): 6 New Street Square London EC4A 3BF**	**0117 939 2000** **burges-salmon.com**
Caplor	Agricultural, commercial, domestic and community design, installations and maintenance. Our aim is to support all our customers through knowledgeable, unbiased advice, quality products and reliable service in our quest for a greener, more sustainable economy that will provide a better environment for our future generations.	**Caplor Farm, Fownhope, Herefordshire HR1 4PT**	**01432 860644** **caplor.co.uk**
Centrica	Innovative energy and services solutions. We provide integrated energy solutions to help you analyse, finance, install, operate and maintain energy. Control costs, keep your organisation running without power interruptions, and become more sustainable with our portfolio of integrated energy solutions. We combine the right technologies with full lifecycle support, to help you drive the most value from your solutions.	**Millstream, Maidenhead Road, Windsor SL4 5GD**	**01753 494000** **centrica business solutions.com**

Company	Description	Address	Contact
Cero Generation	Early-stage feasibility analysis / securing of key permits and commercial contracts, design, project financing, construction management, commissioning, and technical and financial asset management. At Cero Generation, we're dedicated to delivering world-class solar assets and providing our clients with solutions to accelerate their net-zero future. From origination to operations, our team works across the project lifecycle, bringing market-leading industrial, commercial and technical expertise to our assets and clients.	**2nd floor 43 Worship Street London EC2A 2DU**	**cerogeneration.com**
Clean Energy Associates	Solar and Energy Storage Expertise for Your Full Project Lifecycle. Comprehensive Engineering and Technical Support Services for PV and Energy Storage. Clean Energy Associates' end-to-end comprehensive support from project ideation to post-installation helps optimize performance and profitability while reducing risk at every stage.		
Clean Solar Solutions	Clean Solar Solutions are an international, award-winning solar maintenance company. We bring our expertise with a wider range of solar maintenance services as a preferred Operations & Maintenance (O&M) partner and service provider for solar array owners in the UK, as well as solar panel cleaning across the whole of Europe and Ireland.	**Woodland Villas, Wrockwardine Wood, Telford, Shropshire, TF2 6LS**	**+44 (0) 20 3397 9934** **cleansolar.solutions**
Conrad Energy	Conrad Energy's generation portfolio powers the equivalent of over a million homes from embedded, flexible generation projects, solar and battery storage. Our growing energy services business supports the delivery of energy solutions to commercial and industrial businesses which optimise energy use for our customers, network operators and the national grid.	**Windrush Court, Units D and E, Blacklands Way, Abingdon OX14 1SY**	**01235 427 290** **conradenergy.co.uk**

Company	Description	Address	Contact
Custom Solar	Surveying, design, installation and maintenance of solar and renewable energy projects. Custom Solars track record of tailoring projects for large-scale commercial clients relies on our creativity, our expertise in engineering and an industry leading attitude to health & safety. We value the trust placed in us to provide the correct solar solution and investment plan for each unique scenario.	**Sunbeam House, Broombank Road Chesterfield S41 9QJ**	**01246 488488** **customsolar.co.uk**
Dynamic Energy Solutions	Reliable, technologically advanced electrical contracting services and installations for all kinds of residential, commercial, and industrial business. We are one of the leading electrical contracting specialists with extensive experience in prominent electrical and renewable energy projects. We are committed to providing unmatched services to all of our clients, meeting each project's timelines and performance milestones.	**Swindon, SN1 4GB**	**01793 200163** **dynamicenergysolutions.co.uk**
East Green Energy	Design, supply and install bespoke systems for Commercial, Domestic properties and Agricultural businesses. East Green Energy is a renowned and well respected provider of commercial energy solutions in the Biomass Boilers, Solar PV, Heat Pumps and Battery Storage. Our service and skill set ranges from initial discussion and feasibility study right through to build, operation and maintenance.	**Building 5, Bentwaters Parks, Rendlesham, Suffolk. IP12 2TW**	**01394 380 557** **eastgreenenergy.co.uk**
Eco Partners	Creating and storing renewable energy. UK's largest system maintainer of Enphase products. Born from a desire to provide the most suitable energy saving products to consumers on a truly individual basis.	**Eco Partners Limited, Unit 2 Royds Enterprise Park BD6 3EW Future Fields Bradford**	**01484 810350** **ecopartnersuk.com**

Company	Description	Address	Contact
Eco2Solar	Electrical technologies – particularly solar PV, energy storage and EV chargers, for new build housing, social housing and commercial scale buildings. At Eco2Solar we install solar PV to new build and commercial properties across the UK. As an award-winning solar PV installation company, we have the knowledge and experience to install quality solar PV systems tailored to our clients' requirements.	**Eco2 Solar Ltd 1C Langlands Square East Kilbride G75 0YY**	**01562 977 977** **eco2solar.co.uk**
Ecolution Group	Design, installation, maintenance, monitoring and energy asset management. As an award-winning leader in maintenance and installation of renewable and energy efficient technologies, we are one of the most experienced and fastest growing organisations of the kind in the UK. We want to give every business owner the choice to generate and store their own green power at a highly affordable price.	**The Nursery, Taylors Lane, Trottiscliffe, West Malling, Kent, ME19 5ES**	**0330 324 7777** **ecolutiongroup.com**
Ecovision Asset Management	Design and installation of renewable energy solutions for commercial projects. The original business was the first company in the UK to design and install ground source heat pumps, before diversifying to offer additional energy efficient solutions including air source heat pumps, water source heat pumps, solar photovoltaic, solar thermal, biomass and underfloor heating.	**First Floor, Kestrel Court, Waterwells Dr, Quedgeley, Gloucester GL2 2AT**	**01453 796790** **eams@ecovision.co.uk** **ecovisionam.com**
Eden Sustainable	Commercial solar, providing renewable energy, energy efficiency, storage and electric vehicle infrastructure solutions. Eden Sustainable develops, constructs, funds and operates solar PV across various sectors which include multi-nationals, multi-academy trusts, schools and SMEs. The core team has over 100 years' collective experience in renewable energy and property.	**Eden Sustainable Ltd, 28 Queen Street, London, EC4R 1BB**	**0203 405 4896** **edensustainable.co.uk**

Company	Description	Address	Contact
EDF Renewables	Turnkey delivery, financing and operation of solar projects throughout the UK and Ireland. EDF offers a complete solution that is tailor-made for corporate purchasers. EDF Renewables UK supports each stage of the project: development, construction, operation & maintenance and decommissioning.	**Cardinal Place 80 Victoria Street London, SW1E 5JL**	**0800 056 6650** **edf-re.uk**
Electricity Northwest Construction and Maintenance	Control Operation and Maintenance Agreements (COMA). Advice, specification, design sourcing and installation of assets in the private and public sectors. We are one of 14 distribution network operators in the UK regulated by Ofgem and the majority of electricity enters our network from the National Grid. We are responsible for maintaining and upgrading 13,000 km of overhead power lines and more than 44,000 km of underground electricity cables and much more.	**Electricity North West (Construction & Maintenance) Ltd, Borron Street, Portwood, Stockport, Cheshire, SK1 2JD**	**0845 0702520** **enwl.co.uk**
Emtec Group	Building services contracting with full building services solution. Emtec Energy offer a turnkey solution for the delivery of renewable energy projects throughout the UK. Our specialist work with High Energy Users includes the conception, design, installation & commissioning of bespoke Solar PV, Battery Storage and Electric Vehicle Charging systems.	**Ellismuir Way, Tannochside Park, Uddingston G71 5PW**	**01698 808 030** **emtecgroup.co.uk**
Eneco	Renewable energy for business. Buy renewable energy. Do you want reliable, affordable and sustainable energy supplies? You can count on us to do everything to make that a reality. At Eneco we provide tailor made solutions and together we decide which contract suits your purchasing strategy best. We offer both fixed and flexible pricing and ar always open to alternative pricing methods.		**+44 (0) 1463 861 320** **eneco.co.uk/renewable-energy-for-business**

Company	Description	Address	Contact
Esdec	Esdec has supplied universal mounting systems for roof-mounted PV installations on flat and pitched roofs since 2004. With over 15 years of experience and over 7GW of solar panels installed, we have developed into an international market leader.	**Londenstraat 16 7418EE Deventer Netherlands**	**eu.esdec.com/en/home**
eSmart Networks Ltd	eSmart Networks are passionate about delivering the decarbonisation of the UK transport and energy systems. We are enabling the biggest change in how we use energy since the industrial revolution by; • connecting solar, wind and other renewable energy sources to the electricity network • designing and building the 'on site' extra high voltage electrical infrastructure needed to get this renewable energy to the grid. • We also design, supply and install large scale electric vehicle charging infrastructure – including grid connections, charger installation, civil engineering components and battery storage solution	**Nexus Park, Avenue East, Skyline 120, Great Notley, Braintree, Essex, CM77 7AL**	**+44 (0)1376 332 689** **esmart networks.co.uk**
Eden Renewables LLC	Eden Renewables is a UK based international developer of renewable energy and storage projects, spanning commercial & industrial rooftop solar, community solar, utility scale ground-mount solar, wind and battery storage projects. Eden Renewables is focussed on delivering excellent projects, leading the way in enhancing biodiversity and community benefits across our sites. With a combined industry experience of over 75 years in the core UK team, Eden is experienced across the project lifecycle, not just in development but also in overseeing the construction and asset management of projects for our investors and partners.	**Wiltshire Office, The Barn, Ford Farm, Aldbourne, Marlborough SN8 2DP** **London Offic Office 3.01 53 Duke Street, London, W1C 2PE**	**+44 (0)1672 550565** **admin@edenrenewables.com**

Company	Description	Address	Contact
EvoEnergy	Full range of services to help businesses save money, reduce emissions, and secure a reliable source of future energy generation. We are the UK's leading renewable energy company. We offer a range of complementary services and technologies to secure our client's energy future and carbon targets. We consult, develop, design, construct, monitor and maintain projects to deliver financial savings and renewable energy for leading brands all over the country.	**27 Eldon Business Park, Nottingham, NG9 6DZ**	**08448 150 200** **evoenergy.co.uk**
FES	Independent technical services company. Building and support services and facilities management. FES quickly established a solid reputation for being highly efficient and delivering a quality product on time and in a profitable manner. It is these core values of efficiency, quality and profit that have developed the Group into the organisation that exists today. A major UK building services company with significant investment and success in education and healthcare PFI/ PPP contracts.	**Suite 22, Basepoint, Dartford Business Park, Victoria Road, Dartford, Kent DA1 5FS**	**01786 819600** **fes-group.co.uk/energy**
GoodWe	GOODWE C&I SOLUTIONS GoodWe provides commercial and industrial energy solutions for EPCs, developers, and owner-operators to utilize the roof resources. With unrivalled technical expertise and optimized design, GoodWe can comprehensively drive new revenue streams and project value for our users with high-current PV module compatibility.	**First Floor, Sutherland House, 5-6 Argyll Street, London, England, W1F 7TE**	**02045 770609** **en.goodwe.com**
Green Nation	Green Nation is a UK based solar company in business for over a decade that develops, funds, and manages rooftop solar for public sector and private organisations, using the private wire PPA model. Their customers get clean solar electricity at a substantial discount to grid prices, and pay only for the power they use, with no capital or operating costs.	**The Long Barn Manor Courtyard, Stratton-on-the-Fosse, Radstock, BA3 4QF**	**01761 239104** **hello@greennation.co.uk** **greennation.co.uk**

Company	Description	Address	Contact
FIMER UK	Solar inverter and EV charger manufacturer. Our solutions: Redefining the future concept of energy. We are leading the way. Commercial & Industrial: FIMER offers one of the broadest lines of products for commercial and industrial applications. The offering includes a powerful line of three-phase string inverters for photovoltaic (PV) systems installed in C&I applications, as well as a series of AC and DC EV chargers.	**Viale Regina Margherita, Roma, 0198, Italy**	**+39 039 98 98 1** **fimer.co**
Forster Energy	Scottish provider of roofing and solar services for house builders, public sector and community bodies, social housing landlords, and farmers. Forster Group is an award winning, market-leading provider of roofing and solar services to Scottish house builders, public sector and community bodies, social housing landlords, farmers and commercial landlords and tenants.	**Forster Group 22 Commerce Street Brechin, Angus DD9 7BD**	**01356 628 560** **forstergroup.co.uk/energy/**
Fronius UK	100% RENEWABLE ENERGY FOR COMMERCIAL COMPANIES Make your company future-proof - with renewable energy. In doing so, you are opting for the most cost-effective form of energy and laying the foundation for future developments today. We offer individual and cost-effective solutions that make the changeover particularly easy for you.	**Maidstone Road, Milton Keynes, MK10 0BD**	**+44 01908 512 300** **fronius.com/en-gb/uk/solar-energy/business-owners**
Genfit	A Genfit installation can help your business reduce energy costs and harmful emissions with the following technologies: Solar Panels, Energy Storage, EV charge points and LED lighting.	**Genfit 71-75 Shelton Street Covent Garden London WC2H 9JQ**	**0344 567 9032** **genfit.co.uk**
Gridserve	Tech-enabled sustainable energy business. Development, building, owner and operator of dependable, low cost, clean energy solutions for critical power infrastructure. We help reduce greenhouse gas emissions as quickly as possible, we #deliver net zero carbon solutions for power and transport which are designed to be better and less expensive than legacy solutions.	**GRIDSERVE Sustainable Energy, Thorney Weir House, Thorney Mill Road Iver, Bucks, SL0 9AQ**	**0333 1234 333** **gridserve.com**

Company	Description	Address	Contact
Hanwha Q Cells	Design, financing, deployment and operation of solar and energy storage resources. Q CELLS helps businesses and government organizations to manage their energy costs and better meet sustainability goals through: • the design, financing, deployment and operation of solar and energy storage resources. Q CELLS offers a full suite of solutions to unlock new revenue streams and boost project value for end users. With a heritage dating back to the origins of the modern solar industry, Q CELLS combines experience and expertise to deliver. • one-stop shop complete energy solutions, all backed by a Fortune Global 500 company.	**HANWHA Q CELLS GMBH HEADQUARTER FOR TECHNOLOGY AND INNOVATION Hanwha Q CELLS GmbH Sonnenallee 17 – 21 06766 Bitterfeld-Wolfen, Germany**	**+49 (0)3494 6699 0** **q-cells.co.uk**
Helios Solar Operations & Maintenance Ltd	Helios are solar panel cleaning and maintenance specialists that focus on cleaning and maintaining rooftop solar panels in line with the manufacturers Installation & Maintenance Guidelines, thereby maintaining the warranties on your installed equipment.	**27 Dunstable Street, Ampthill, Bedfordshire, MK45 2NJ**	**01525 664665** **hello@ helios-om.com** **helios-om.com**
Herschel Infrared Ltd	COMMERCIAL HEATING SYSTEMS USING HERSCHEL INFRARED Chosen by the world's leading businesses for our comprehensive range of heaters covering a wide range of requirements. Herschel Infrared heaters are built for performance, efficiency and durability and delivered with Herschel's excellent estimating and commercial support.	**Unit 6A, Boundary Road, Access 18, Kings Weston Ln, Bristol BS11 8AZ**	**0117 325 3850** **herschel-in-frared.co.uk/ commer-cial-heating**
Huawei Technologies (UK) Co. Ltd	Smart PV Solutions: Go Solar with Huawei Huawei offers leading Smart PV solutions harnessing more than 30 years of expertise in digital information technology. By integrating AI and Cloud, Huawei further incorporates many latest ICT technologies with PV for optimal power generation, thus making the solar power plant to be Highly Efficient, Safe & Reliable with Smart O&M and Grid Supporting capabilities and builds the foundation for solar to become the main energy source.	**300 South Oak Way, Reading, Berkshire, England, RG2 6AD**	**huawei.com/uk**
ICB (Projects) Ltd	We Create Safe, Sustainable, Smart Roof, Environments. We're ICB, providing solutions for architects, main contractors, roofing contractors, developers & private clients. We offer a complete solution including survey, calculations, design & technical (CAD), supply & installation all backed up by industry leading guarantees from an ISO accredited specialist.	**Units 9-11, Fleets Industrial Estate, Willis Way, Poole, BH15 3SU, United Kingdom**	**01202 785 200** **icbprojects. co.uk**
Ineco Energy	Deployment of solar energy for businesses and schools, as well as LED lighting and battery storage; delivering financial savings and environmental sustainability. Ineco Energy provide a way for business to significantly reduce operating costs, maximise operational efficiencies and improve corporate social responsibility. We do this by understanding your business and identifying which of our technologies can help you.	**Sceptre House 4 Bessemer Road Cardiff CF11 8BA**	**029 2002 1777** **inecoenergy. com**
Jinko Solar	Jinko Solar Co., Ltd. (the "Company", or "Jinko Solar") (SSE: 688223) is one of the most famous and innovative solar technology companies in the world. Its business covers the core links of the photovoltaic industry chain, focusing on the R&D of integrated photovoltaic products and integrated clean energy solutions. Preferred products for commercial investment and financing projects. Whether it's for private use or connected to the grids, solar power provides you with new sources of revenue, but it still depends on whether you choose the right modules and partners.	**Jinko Solar Denmark ApS Gasværksvej 5, St tv, DK-1656 København V, Denmark**	**jinkosolar.eu/ en**
JA Solar Investment Co. Ltd	Solar PV manufacturer Founded in 2005, JA Solar is a manufacturer of high-performance photovoltaic products. With 12 manufacturing bases and more than 20 branches around the world, the company's business covers silicon wafers, cells, modules and photovoltaic power stations.	**8, Noble Center, East Auto Museum Road, Fengtai District, Beijing 100160, China**	**+86 10 6361 1888** **jasolar.com/ html/en**

Company	Description	Address	Contact
K2 Solar Mounting Solutions Ltd	K2 mounting systems offer photovoltaic installation solutions for all roof types and roof coverings. Since 2004 we have been developing pioneering and highly functional mounting system solutions for photovoltaic installations around the world. Our systems are designed in our own product development department where we continually optimise and adapt mounting systems to the ever-changing market.	**K2 Solar Mounting Solutions Ltd. Unit 46 Easter Park, Benyon Road Aldermaston, Berkshire RG 7 2PQ**	**+44 (0) 1189 701280** **k2-systems.com/en**
Kingspan Energy Ltd	Energy Solutions. We have the ability to futureproof our buildings by optimising energy efficiency, reducing carbon emissions and creating healthy, resilient spaces in which to live and work. Kingspan have combined industry leading QuadCore insulated panels with high-efficiency monocrystalline photovoltaic panels in a single, factory-manufactured component.	**Dublin Road, Kingscourt, A82 XY31, United Kingdom**	**+353 (0) 42 969 8000** **kingspan.com/gb/en-gb/products/insulated-panel-systems/energy-solutions**
LHW Partnership LLP	LHW Partnership is a specialist engineering consultancy, established to provide high quality engineering expertise with the aim of accelerating the adoption of quality, low carbon energy projects. Founded by James Hoare in 2013, one of the most experienced professionally qualified engineers in the sector, with over 31 years renewable energy engineering experience, and has undertaken a range of engineering services including feasibility, design, installation, commissioning review, inspection, auditing and verification of thousands of renewable energy systems from small “off-grid” systems to larger 300MWp+ utility scale PV systems.	**31 Birds Hill, Heath & Reach, Leighton Buzzard, Bedfordshire, LU7 0AQ**	**07715 576 666** **enquiries@lhwpartnership.co.uk** **lhwp.co.uk/contact**

Company	Description	Address	Contact
Locogen Energy Services Ltd	Welcome To The Locogen Group, An Award-Winning Specialist In The Renewable Energy Sector. We work across technologies, independent of any vendor, deploying our experience and expertise to identify the best-fit solution for our clients and partners. We also deliver community renewables projects, roof-mounted solar projects, along with renewable heating solutions, including district heating, ground source heat pumps and air source heat pumps.	**5 Mitchell Street, Edinburgh, EH6 7BD, United Kingdom**	**0131 555 4745**
LONGi Solar	BIPV Building Integrated PV. Integrated energy solutions for green buildings. Green Building Solutions. New green building industry with clean energy as the main energy system, which promotes the comprehensive green environmental protection of green building.	**Block B, Innovation Incubation Center, Xi’an Service Outsourcing Industrial Park, No. 8989, Shangji Road, Xi’an,China**	**+81-03-35166300** **longi.com/en**
Lynx Sustainable Solutions	Lynx Group has been established to respond to the growing need for energy efficiency, energy storage and energy generation. Their accomplished management team, group companies and specialist technology partners have worked together for many years providing specific renewable technology expertise to market.	**Ribble Court, 1 Mead Way, Shuttleworth, Mead Business Park, Padiham BB12 7NG**	**01282 682850** **info@lynxprojects.co.uk** **lynx-group.co.uk**
Meadowcroft	Design, Install and Maintain Solar PV, Home and Commercial Battery Systems, Solar Tracking Systems, EV Charge Points, Electric Home Smart Heating, Energy Management. Supply all manner of electrical and engineering services to the private, commercial and industrial sectors within the Channel Islands.	**Mill House, St Georges Esplanade, St Peter Port,** **Guernsey, GY1 2BG**	**01481 727 715** **meadowcroft.gg**
Moixa	Raising the IQ of the world’s batteries. We develop our Smart Battery hardware and GridShare software to facilitate smart energy storage and sharing. GridShare: Moixa’s AI powered smart energy-management software helps renewable energy work intelligently for individuals and businesses.	**29-31 Saffron Hill, London, EC1N 8SW, United Kingdom**	**020 7734 1511** **moixa.com**

Company	Description	Address	Contact
Naked Energy	Design and commercialise the world's smartest and most efficient solar solutions. Leveraging our innovation and our engineering capability, we are revolutionising solar with the world's highest energy density solar technology.	**Unit 72 / Unit 80, Basepoint Business Centre, Metcalf Way, Crawley, West Sussex, RH11 7XX**	**+44 20 4542 2230** **nakedenergy.co.uk**
Oaktree Renewables	Development, financing and management of renewable energy assets, mainly in the solar sector.	**Oaktree Renewables 6 Percy Street, W1T 1DQ London**	**oaktree renewables.com**
Octopus Energy	We provide an easy, affordable energy option for Great Britain's visionary businesses. Whether you're one of the world's biggest football clubs or selling magic wands in Brighton, we'll supply your business with power from the sun.	**Registered office: 33 Holborn, London, EC1N 2HT.** **Trading office: 2nd Floor, UK House, 164-182 Oxford Street, London W1D 1NN**	**020 3389 5613** **octopus.energy**
Olympus Power Ltd	Design, building and installation of technology that gets you closer to net zero.	**The Sustainability Hub, Exeter, Devon EX6 7BE**	**01392 549700** **olympuspower.co.uk**
Photon Energy	Design, supply, installation and maintenance of solar PV systems and battery storage systems. Photon Energy provide installations for commercial and industrial properties. Solar PV systems can be designed on existing roof space that will help save money on utility bills and carbon emissions.	**Photon Energy, 8 Windsor Square, Silver Street, Reading, Berkshire RG1 2TH**	**0118 997 7470** **photonenergy.co.uk**
Powersun Ltd	Total solutions to clients' needs and takes projects all the way from design and development to construction and operations and maintenance. Powersun works with clients helping them solve urgent energy use problems. We understand the urgency of climate change and can help businesses down the journey to a Zero Carbon solution. Solutions that are simple, cost effective and easy to maintain.	**Unit 10 Bicester Park, Charbridge Way, Bicester OX26 4SS**	**01869 250505** **sales@power-sun.ltd.uk**

Company	Description	Address	Contact
Powervault	POWERVAULT SOLAR BATTERY: The smart way to store energy. At Powervault, we are on a mission to pioneer a sustainable energy future. We provide the most intelligent, economic and sustainable energy storage systems for homes and businesses. Our products store solar energy and affordable electricity from the grid, helping save you money while you help protect the environment. We design and manufacture Powervault here in the UK.	**25 Lavington Street, London, SE1 0NZ, United Kingdom**	**+44 (0)203 653 1111** **powervault.co.uk**
Praxia Energy	Praxia is a company established in 2006 and dedicated to the design and production of PV mounting solutions. Praxia designs and produces ground mounted solutions (both single and double post), roof structures (roof-parallel and elevated systems), one single axis solar trackers and PV carports. Praxia work starts from the Client quotation request.	**C/ Santa Susana 1 33007 Oviedo (Asturias)**	**+34 985 211 117** **praxiaenergy.com**
Schletter Solar GmbH	Solar Mounting Systems you can trust. Schletter is one of the foremost producers of mounting structures for solar panels. What started out as a humble family business in metal manufacturing has grown into one of the most well-established, respected solar mounting enterprises. With operations in countries throughout the world, we're proud to say that our dedication to quality, integrity, and professionalism remains unchanged.	**Unit 13, Stocklake Park, Farmbrough Close, Aylesbury, England, HP20 1DQ**	**schletter-group.com**
Segen	Wholesale distributor of solar PV (photovoltaic), energy storage systems, electric vehicle charging and associated components. Segen can offer you attractive prices on solar solutions, energy storage systems and electric vehicle chargers, with high product availability as well as excellent customer service. Segen offers a unique customer portal, allowing you to browse, design a complete system and order, 24/7.	**Segen Ltd, Suite 2, Wesley Hall, Barrack Rd, Aldershot GU11 3NP**	**0330 9000 141** **segen.co.uk**

Company	Description	Address	Contact
Societe Generale	Work closely with a number of vendors in the Clean and Renewable Energy sector to finance assets including solar PV, Bio-Mass, LED and combined heat & power. Societe Generale Equipment Finance is one of the leading equipment and vendor finance companies offering innovative finance products and services to all types of businesses operating in the public and private sectors.	**Societe Generale Equipment Finance Limited Parkshot House 5 Kew Road Richmond Surrey TW9 2PR**	**020 8629 8400** **equipment finance societe generale.co.uk/en/our-expertise/green-energy/**
SolarEdge	Manufacturer of solar PV and energy solutions. SolarEdge has helped companies of all sizes move to profitable and clean renewable energy. SolarEdge's dedicated tools and engineers help you put together a tailor-made design optimisation plan, including LCOE and ROI analysis.	**15 Chester Road, Colmworth, Business Park, Eaton Socon, Cambridgeshire PE19 8YT**	**08000 281 183** **solaredge.com/uk**
Solarport	Fast-tracking solar installation across the UK, Europe and Africa, our solar PV mounting systems are designed to deliver where it matters: installation efficiency, cost-effectiveness and quality. GROUND MOUNTS SOLAR CARPORTS ROOF MOUNTS	**Gore Cross Business Park, Suite A, The Core, Bridport DT6 3FH**	**01308 800501** **solarportsys-tems.com**
Solarsense UK Ltd	Renewable Energy Solutions. Powering the UK towards a clean energy future. Solarsense supply UK homes and businesses with a range of turn-key renewable energy solutions that deliver financial savings, carbon reductions and energy independence.	**Helios House, Brockley Lane, Bristol, BS48 4AH, United Kingdom**	**01275 461 800** **solarsense-uk.com**
SolaX Power	COMMERCIAL SOLUTIONS. Secure Your Future. Harnessing solar energy is not only good for the planet but is also good for energy bill. SolaX Power have a range of three phase commercial solutions that boast some of the highest efficiencies on the market today allowing you to maximise the energy you can produce.	**Unit 10, Eastboro Fields, Hemdale Business Park, Nuneaton, CV11 6GL**	**+44 (0) 2476 586 998** **solaxpower.com**

Company	Description	Address	Contact
Solis	Ginlong Solis is a manufacturer of PV inverters for solar and wind energy applications. They are one of the oldest and largest global string inverter specialists for converting DC to AC power and interacting with utility grid, for residential, commercial and utility scale solar market installations. Ginlong Solis Inverters provide a quality option for an affordable and reliable photovoltaic inverter system.	**1 Church Street, Bootle Liverpool, L20 1AF, UK**	**+44 113 328 0870 (Sales)** **+44 151 453 6515 (service)** **ginlong.com/uk**
Square4 services	Deliver a design through to commissioning and maintenance service to organisations throughout the UK. As an independent business, we're agile, flexible and responsive. With a consultative approach to project delivery, we enable commercial clients to realise renewable energy ambitions and meet sustainability targets – while keeping projects on schedule and to budget.	**Stone Cross Place, Stone Cross Lane North, Lowton Warrington WA3 2SH**	**0330 383 0351** **sq4s.co.uk**
SSE Energy Solutions	SSE Energy Solutions (distributed energy) is a renewable developer and asset owner across the UK and Republic of Ireland. We design, build, own and operate localised energy infrastructure, including fully funded on-site, private wire and grid-scale solar solutions. Our whole system capability means we can integrate solar generation with a wider range of complementary distributed energy solutions (e.g. battery storage, low carbon heat or EV charging), tailored to match any requirements your site might have.	**Inveralmond House 200 Dunkeld Road Perth PH1 3AQ**	**0800 389 4466** **seenergy solutions.co.uk**
SunGift Solar	Solar Installers: Powering your business. If you're looking to reduce your overheads and increase your sustainability you've found the right people. When it comes to solar PV, energy storage and car charging infrastructure our expertise is second to none.	**Unit 6, Huxham Barns, Huxham, Exeter, EX5 4EJ**	**01392 213 912** **sungiftsolar.co.uk**

Company	Description	Address	Contact
Sunpower Maxeon	Better Solar Panels for your Business. Join the hundreds of businesses who have chosen SunPower solar panels for their solar projects. Some of the largest companies in the world are benefiting from the leading efficiency* and greater returns offered by SunPower technology. SunPower Maxeon solar panels help organisations maximise their savings through solar's top durability, reliability and efficiency, all backed by the industry's leading warranty.	**Vienna House, International Square, Birmingham International Park, Solihull, B37 7GN**	**0800 020 9886** **sunpower.maxeon.com/uk**
Syzyrgy Consulting	We're an award-winning, specialist, green technology consultancy. We provide our clients with an accessible route to delivering renewable energy, energy storage and electric vehicle charging infrastructure projects. Our clients incude many of the worlds largest commercial real estate developers and investors, supermarket groups, Government departments, pension funds and Insurance companies.	**SYZYGY Consulting B6 Hatchers Yard 9 Tanner Street London SE1 3LE**	**+44 (0) 203 964 2830** **syzygy consulting.eu**
The Little Green Energy Company	Solar Installer: Over the last decade we've sought to keep the focus on helping our customers to find the best way to reduce their own carbon footprint. For us it is more than simply installing an off-the-shelf technology, rather we take the time to understand you, your home or your business. Following installation, TLGEC continue to support to ensure every customer is confident and comfortable in understanding how their system runs and the impact.	**Hopsack House, Pattenden Lane, Marden, Kent, TN12 9QJ**	**01481 255 666** **tlgec.co.uk/services/commercial/**
UPOWA	UPOWA provide all-in-one sustainable technology products and specialist services, accelerating the transition to net-zero for the housebuilding, construction and commercial industries.	**Unit 9 Fulcrum 1, Solent Way, Whiteley, United Kingdom PO15 7FE**	**02380 987499** **upowa.co.uk**
Van der Valk Solar Systems UK Ltd	Van der Valk Solar Systems is since 2009 one of the fastest-growing companies in the solar industry and focuses entirely on the development and production of solar mounting systems for pitched roofs, flat roofs, and open fields. Van der Valk Solar Systems also has an office and warehouse in the UK, offices in Sweden and Spain and is currently active in 13 countries.	**Zwartendijk 73 2681 LP Monster, the Netherlands**	**01304 89 76 58** **valksolarsystems.com/en**
Watt Energy Saver	Design, installation, commissioning and registration. Focusing on energy conservation, renewable technology and the integration of mechanical & electrical services into both new and existing buildings our diverse range of skills ensures we deliver best value and a quality installation time after time.	**Watt Energy Saver, Elizabeth House, Sherwood Energy Village, Latimer Way, Ollerton, Nottinghamshire, NG22 9QW**	**0845 475 7710** **wattenergysaver.co.uk**
Weightmans LLP	Expert legal services for businesses and individuals. We're a top 45 UK law firm, with over 1300 people working from our offices in Birmingham, Glasgow, Leeds, Leicester, Liverpool, London, Manchester and Newcastle. Our strengths: We're proud to be a leading national player in insurance, with a formidable reputation and heritage. We're highly respected in the public sector, acting for many local, police and fire authorities, and NHS trusts. We're also recognised as a strong provider of a diverse range of commercial services for public sector bodies, large institutions, owner-managed businesses and PLCs.	**The Hallmark Building, 105 Fenchurch Street, London, EC3M 5JG**	**+44 (0)345 073 9900** **weightmans.com**

Company	Description	Address	Contact
Ylem Energy Ltd	Ylem Energy Ltd is a leading independent power generation specialist with more than three decades' experience in building, owning, and operating solar and battery storage solutions as well as hydrogen-ready gas generation systems. Specialising in delivering fully funded, state-of-the-art generation systems through its DPPA (Dynamic Power Purchase Agreement) Ylem Energy invests millions in projects that help its clients on their way to net zero and support the UK's legally binding targets for tackling climate change and decarbonising the grid. Ylem Energy can deal with all elements of new onsite solar energy generation projects, from site surveys and design to installation, including discussions with network operators and planning applications, and guarantees savings on your annual electricity bills for up to 25 years with no CAPEX or additional costs to your business.	**Edison House, Daniel Adamson Road, Salford, M50 1DT**	**+44 (0)161 660 2222** **solutions @ylemenergy.co.uk** **ylemenergy.com**
Zestec Asset Management	Manages, develops and acquires renewable energy assets for institutional and private investors. Zestec has the technical, financial and commercial experience & resources required to develop institutional quality electricity generating renewable energy assets.	**Zestec Asset Management, Oxford Point, 19 Oxford Road, Bournemouth BH8 8GS**	**01202 018 800** **zestecgroup.co.uk**

References

1 https://www.water.org.uk/routemap2030/

2 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1001896/uk-rooftop-solar-panel-behavioural research.pdf

3 The number of panels required will depend on the amount of power each panel produces. The figure here is based on 400W panels.

4 Multiple floating solar projects are now operational or in development. These solar arrays float on bodies of water such as reservoirs or docks.

5 The number in this column refers to the area occupied only by the panels themselves. The actual area required will be larger, in order to provide for other equipment and access.

6 https://solarenergyuk.org/wp-content/uploads/2021/12/Solar-Energy-UK-Rooftop-OM-best-practice-Second-edition.pdf

7 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/967202/Super_deduction_factsheet.pd

8 https://solarenergyuk.org/wp-content/uploads/2021/06/Lighting-the-way-report.pdf

9 https://www.salixfinance.co.uk

10 https://solarenergyuk.org/resource/the-value-of-solar-property-report/

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