



**Solar
Energy
UK**

SOLAR ENERGY UK BRIEFING

Solar's role in addressing the energy crisis

Path to 2023, 2030 & 2050

Mar 2022

Summary

The UK had a serious energy crisis before the Ukraine war. Now the need to rapidly scale up home grown energy has become even more urgent.

The cost of household energy means that some people may now have to choose between heating and eating, with the consumer price cap due to rise by 54% in April 2022,¹ probably higher still by Winter 2022. Businesses are also seeing their energy bills skyrocket, affecting their ability to recover from the pandemic.

Our current power system still relies heavily on fossil fuels, such as gas. The volatile price of these is the reason that bills have increased so rapidly in recent months. The electricity market and networks are also in need of urgent re-design to allow the benefits of cheap renewable energy, primarily wind and solar, to be accessed by consumers and businesses.

The Prime Minister has acknowledged that moving as fast as possible to a green energy system is the single most important thing the UK can do to address these issues.²

Solar Energy UK calls on the government to increase the capacity of solar energy in the UK and commit to a target of 40GW by 2030, and then to 54GW by 2035, to fully decarbonise the UK's power needs.

Speed is of the essence, and we estimate that up to 7GW could be built in 2 years, which could create an extra 5,000 secure jobs in the sector, growing to 42,000 jobs in 2030.

As solar, energy storage, electrification of heat and transport expand, there should be an ambition to deploy at least 100GW by 2050.

The briefing summarises the benefits of solar energy and the immediate impacts that deploying more solar will have on the UK energy crisis.

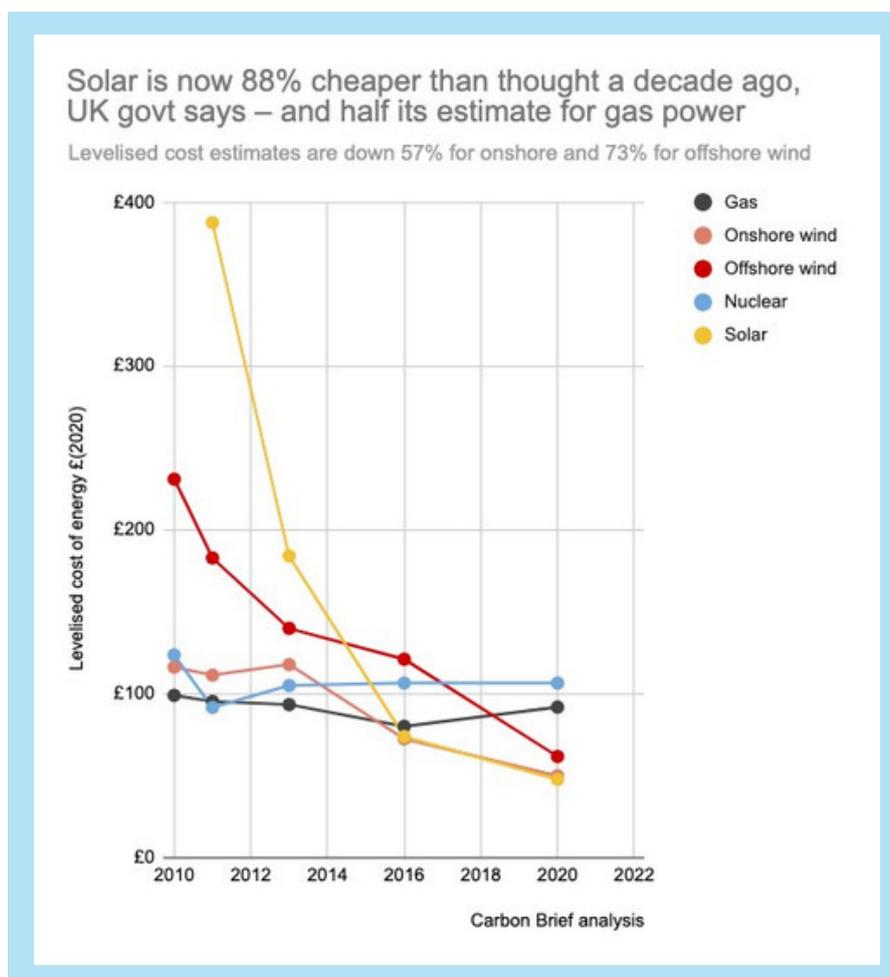


1. <https://www.ofgem.gov.uk/publications/price-cap-increase-ps693-april>

2. <https://www.telegraph.co.uk/politics/2022/03/14/cannot-go-like-west-must-end-dependence-vladimir-putin/>

Solar is low-cost energy

The price of solar technology has plummeted around the world in recent years. The UK government states that utility scale solar has fallen in cost by 88% since 2010 (see below) and the cost of rooftop solar has declined by as much as 60% since 2010.³



Source: Carbon Brief

Rooftop solar can save individual households well over £400 per year in energy costs, while increasing property values at the same time.⁴

The payback period on a commercial rooftop solar system can be less than five years – after which it will effectively produce free electricity for at least a further 25 years.

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

4. <https://solarenergyuk.org/resource/the-value-of-solar-property-report/>

Research from the Government's Department for Business, Energy and Industrial Strategy (BEIS) shows that new solar farms will provide the most affordable electricity to the UK's national grid.⁵

Increasing solar deployment will directly help reduce the cost of energy in the UK.



Solar is quick to build and already up and running

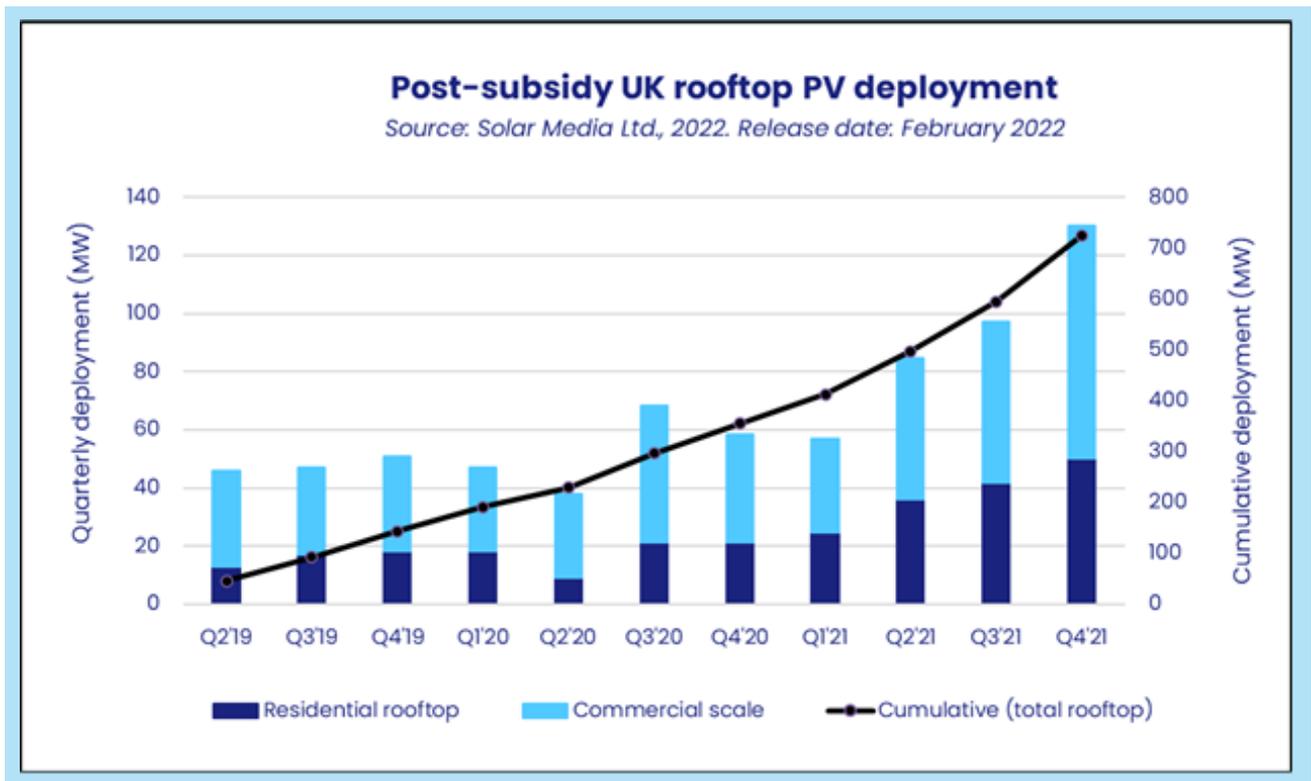
Solar is the fastest of all renewable energy technologies to deploy. A domestic rooftop solar project can be designed and installed in a matter of days. Commercial rooftop solar systems – which can have huge generating potential, can be designed and installed in less than 12 months. A solar farm can be designed, and installed in less than 24 months.

It is easier to scale up an industry that is already growing, than go from a standing start. 1.3GW of subsidy free solar has been built in the last two years, with over 700MW in 2021 alone. There are many projects in the process of delivery: over 5GW of solar farms developments have planning permission and 'shovel ready' grid connection agreements are in place. A similarly high number of projects are still being considered by local planning authorities. In the pipeline, there are 250MW of known commercial rooftop projects in the planning system, and many more to come. Below is the recent growth in the rooftop solar market.

⁵ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/911817/electricity-generation-cost-report-2020.pdf

This matters because of the speed with which the UK needs to act to address the energy crisis.

The graph below shows how much solar energy capacity could be deployed in the next 24 months: at least 1GW of rooftop solar, and 5.5GW of solar farms. This is based on analysis of growth in rooftop solar markets, and the solar farm planning application pipeline.

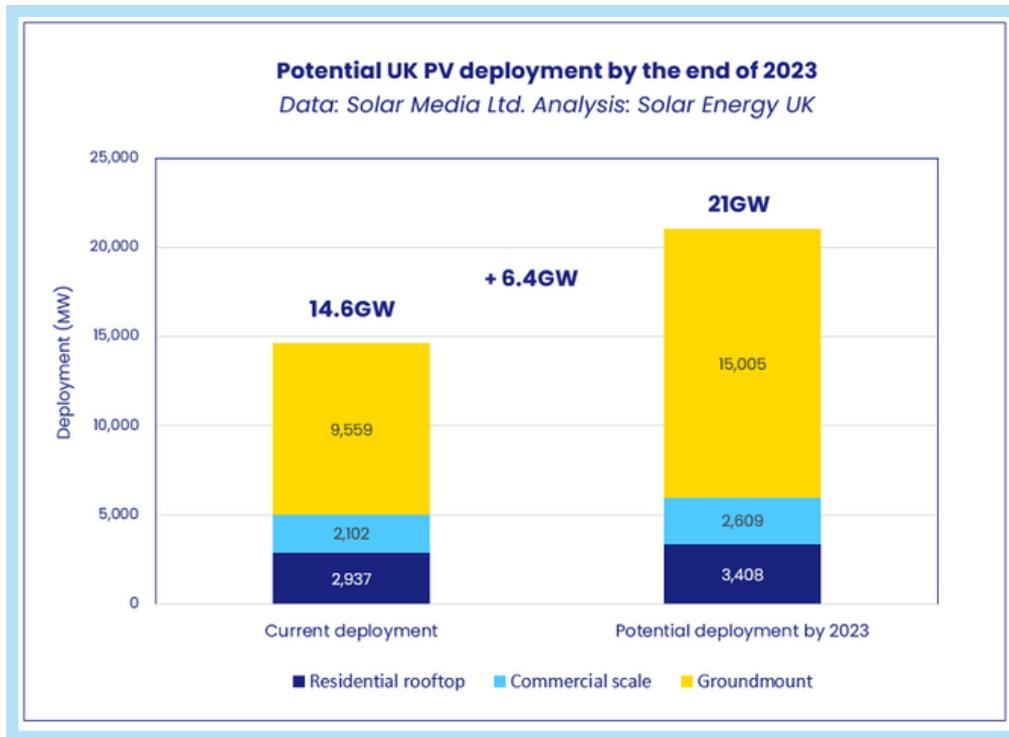


Source: Solar Media Ltd

The UK solar industry is prepared to meet the challenge of scaling up to deliver this deployment. As Commercial Director of one Solar Energy UK's members said, commenting on business to date in 2022:

"It is indescribably insane. We are recruiting for a dozen open roles, have new starters every week, and opened new premises that will quadruple our warehouse space last week. Our design software saw 10,000+ designs done last month. We hit absolute max capacity every day, though we're working around the clock to keep adding resources. It's the fastest sustained growth we've ever seen".

There is 6.4GW of subsidy-free solar which could be deployed before the end of 2023 – a 44% increase. That means more than double the capacity of Hinkley Point could be brought on stream in less than 24 months.



Source: Solar Media Ltd + Solar Energy UK

Solar is reliable

Already, solar can produce as much as 30% of the UK's electricity at different points in the year.⁶ All UK solar markets are subsidy-free, and with growth, the contribution that solar can make to the UK's energy needs is significant. Achieving 40GW of capacity by 2030 would afford at least 10% of the UK's entire electricity needs and majorly contribute to national self-sufficiency.⁷ Other countries have recognised this too, which is why they are setting sizeable deployment targets. For example, Germany recently announced plans under which it could install 200GW of solar energy by 2035.⁸

6. https://www.solarpowerportal.co.uk/news/solar_smashes_peak_generation_records_as_it_soars_to_9.68gw

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

8. <https://www.reuters.com/business/sustainable-business/germany-aims-get-100-energy-renewable-sources-by-2035-2022-02-28/>

Residential and commercial solar systems can therefore reduce energy bills for homes and businesses whilst directly increasing national energy security at the same time. This is because any heat or power a building produces and consumes itself does not need to be bought from the grid, which also increases resilience. The aggregate energy value of solar and energy storage in this regard is huge. For example, 4.4 million homes with a solar system and a battery could eliminate the evening 'peak' in demand on the national electricity grid, helping to balance the energy system by storing surplus solar and wind generation for when it is needed.⁹ This is vital to ensure the UK's huge renewable energy potential is realised.

Solar and energy storage is helps to ensure a safe and stable supply of energy to homes, businesses, and the national grid.

Solar creates jobs and investment

There are currently around 6,500 people employed in the UK solar industry, across a wide range of jobs. Solar Energy UK's analysis suggests this could increase to more than 42,000 if the UK commits to 40GW of solar by 2030.

Deploying 40GW of solar could create 35,000 new jobs by 2030.¹⁰
Deploying 100GW by 2050 could create more than 100,000 new jobs.

The solar industry recruits for roles ranging from business development experts, data analysts, distribution and logistics specialists, electrical engineers, energy finance professionals, environmental planners and natural capital experts, maintenance advisors, product researchers and developers, scientific and technical staff, solar cleaning specialists, and system designers, planners, and installers.



9. <https://www.reuters.com/business/sustainable-business/germany-aims-get-100-energy-renewable-sources-by-2035-2022-02-28/>

10. Based on analysis carried out for Solar Energy Scotland's forthcoming briefing, Solar Skills Scotland.

Once a predictable pipeline of solar deployment is in place, of 3-4GW per year, the UK will be in a good position to develop a domestic supply chain of EPC companies and components such as mounting equipment, cabling, switch gear, battery storage and smart monitoring equipment to enable a flexible grid. Because of the distributed nature of the industry, these jobs will be spread across the whole UK and not solely concentrated in any one region, the skills gained will be transferable to the fast-growing global renewable sector.

There are also a growing number of innovative UK manufacturers in thin film flexible solar, battery storage and solar heat technology.

Solar supports other sectors, including agriculture

Solar supports other sectors to diversify their income and create secure livelihoods. For example, the solar industry is working closely with Britain's farmers to reduce their energy costs and improve the sustainability of their operations. Where a solar farm is installed on land which has been intensively farmed, it enables the ground underneath to recover. Solar farms help regenerate soil quality, and to ensure the availability of high-quality agricultural acreage for future generations. Whilst the land is resting, biodiversity also returns, meaning that solar farms can actively contribute to the government's nature recovery agenda.

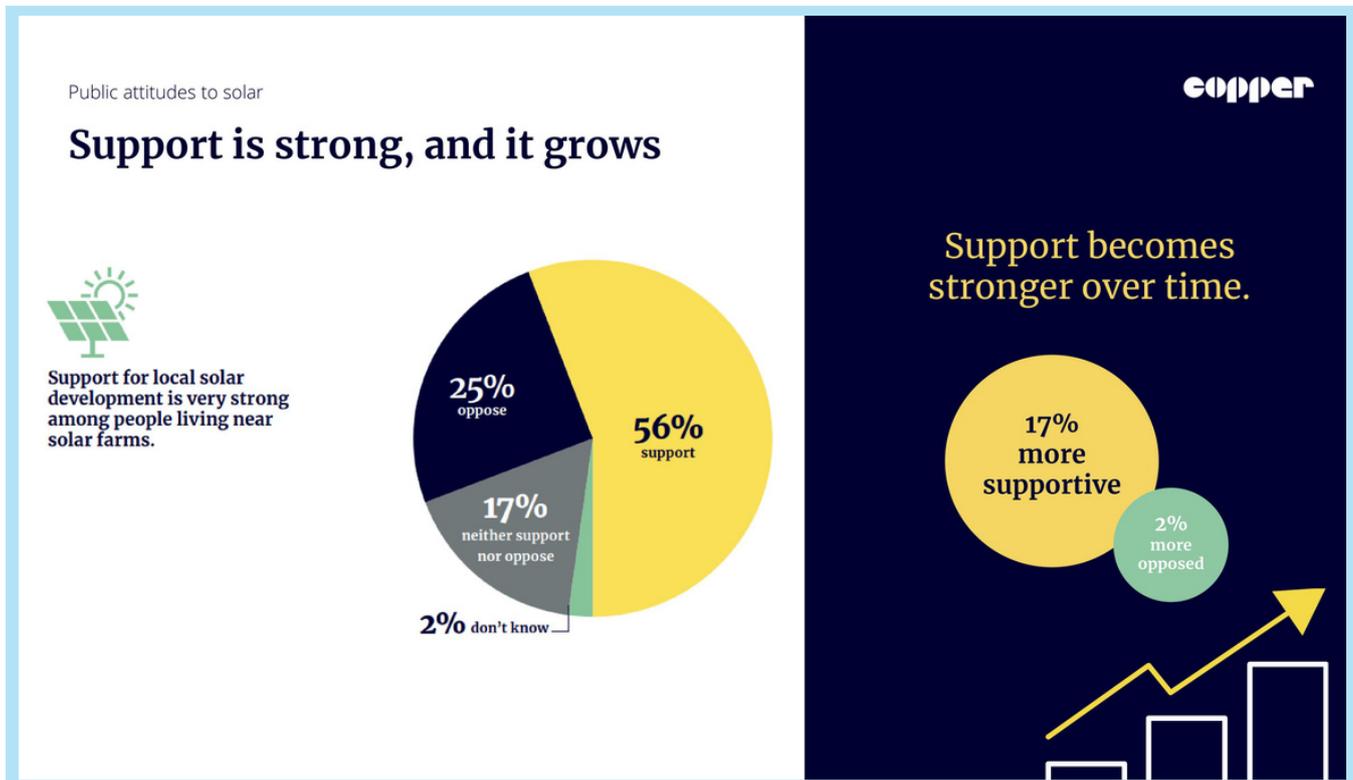
Because solar parks generate income, they also provide farmers with a revenue stream to support other aspects of their agricultural business. This is vital in the context of the UK's exit from the EU's CAP.

The solar industry is contributing to UK food security by supporting the continued economic viability of farming.

Solar is hugely popular

The government conducts regular polling on public attitudes towards renewable energy technology. Levels of support for solar are consistently high, with the most recent survey results, published in December 2021, showing that an astonishing 90% of the public supported solar. **Making solar the most popular form of renewable energy technology in the UK.**

Research carried out by Copper Consultancy on behalf of Solar Energy UK illustrates that support for solar farms increases over time, amongst those who live near them. This is because locals recognise the benefits that solar farms provide, such as natural habitat and environmental improvements. The research also demonstrates that more than half of the public want the government to do more to prioritise solar in national planning decisions.



Source: Copper Consultancy

Residential and commercial solar systems are hugely popular. There are already a million solar roofs around the country, and record growth in the market shows how much interest there is in one of the simplest and most effective upgrades which can be made to a building.¹¹

Consumer polling shows that installing solar panels is the third biggest home improvement priority for homeowners, after fitting a new kitchen or bathroom, and windows. This is perhaps unsurprising, given that nearly three-quarters (72%) of homeowners feel that the environmental impact of their home is important.¹²

11. <https://solarenergyuk.org/news/six-years-of-solar-roofs-strongest-growth-since-2015/>

12. <https://solarenergyuk.org/news/solar-installation-could-add-1800-to-house-prices/>

What support does solar need from Government?

Much of the required policy is in place, but there are four areas where Government can help accelerate solar in the UK:

Unlock Grid Constraints

For utility scale projects, the pace of modernisation of the networks is slowing project delivery. Up to 4GW of projects and £1.6bn in investment is now being held up by National Grid and DNOs delaying connection dates into the 2030s. Government or Ofgem action is urgently needed to bring forward network investment to enable the quickest cheap clean power.

Support in training and skills

Solar companies are finding it harder to recruit due to lack of required skills. Solar Energy UK has been working with the Mayor of London to develop a Solar Skills London Hub. Similar investment is required across the country. Without the training support, there is the risk that jobs could be taken up by imported labour and some of the economic gain for the UK will be lost.

Future Homes Standard

Changes to Part L Building Regulations, coming into force in June 2022, will mean most new homes built in England will have solar. It is vital that the Future Homes Standard, due to come in 2025 require all homes to have electric heating, EV charging AND onsite solar. This will decarbonise heat & transport and ensure that energy bills are future proofed from high prices.

Facilitate Low-Cost Loans for residential onsite solar and storage

More and more households are investing in onsite solar to reduce their energy bills, and banks are starting to offer green mortgages to finance these home improvements. Many, however, do not have access to such finance, so there is a role for the National Infrastructure Bank to provide this finance for all green retrofitting, at a low or zero cost. In addition, grants are still required to ensure that social housing can be upgraded.





Published in the United Kingdom by Solar Trade Association
Chapter House, 22 Chapter St, London, SW1P 4NP
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