

SOLAR ENERGY SCOTLAND BRIEFING

Solar Skills Scotland

**The job creation potential
of Scottish solar**

May 2022

Summary

This briefing describes the job creation potential of the Scottish solar industry. Analysis of UK, US and EU employment data shows that if the Scottish government sets a 2030 deployment ambition of 4-6 gigawatts (GW) of solar energy capacity, the industry could support nearly 9,000 jobs, including in manufacturing, construction, and business management.¹ The sector is innovating rapidly, with the development of a major pipeline of energy storage systems and of new solar installation types. The number of potential jobs can therefore be expected to increase.

Solar technology is inherently flexible and decentralised. Setting a deployment ambition would help generate employment around Scotland, including in rural and other areas not always associated with high-tech industries. Skills training and vocational support would also enable offshore workers to transition into some of these roles, supporting a just transition and helping Scotland's clean energy future to draw on its industrial past.

Sending the signal Scotland is serious about solar would support the Scottish solar industry to make long-term investment decisions, generate thousands of green jobs, and enable Scotland to meet its climate change obligations.



Crichton Castle by Historic Environment Scotland

The Scottish solar industry

There is nearly 400MW of solar deployed in Scotland to date, and the Scottish solar industry is now fully subsidy-free, with a thriving range of companies installing residential and commercial rooftop projects. A quarter of all installations accredited by the Microgeneration Certification Scheme UK-wide in 2021, for example, were installed in Scotland.²

As of February 2022, there was also 687MW of utility scale projects with planning applications submitted in Scotland, and a further 1,388MW of capacity in other stages of development.³

Similarly, the energy storage industry is taking off. More than 1,100MW of utility scale solar projects with co-located energy storage are already in the Scottish deployment pipeline. This means that affordable solar power produced during the day can be stored for use at night, and it also means the development of Scotland's energy storage industry will deliver further economic growth and job creation.

Scottish companies are involved across the supply chain: in manufacturing, designing, installing, operating, and maintaining solar and energy storage systems, in research and development, and in the legal, financial, procurement and other business development activity needed to run a successful industry.



1. 4-6GW of Scottish solar would ensure Scotland generated its fair share of the UK's renewable energy supply. See <https://solarenergyuk.org/resource/scotlands-fair-share-solars-role-in-achieving-net-zero-in-scotland/> for more detail.

2. <https://www.scotsman.com/business/scotland-powers-ahead-as-homeowners-rush-to-fit-solar-panels-3570711>. The Microgeneration Certification (MCS) is the UK's small-scale renewable energy quality assurance scheme.

3. Data from Solar Media Ltd.

The job potential of setting a Scottish solar ambition

The table below shows the number of jobs the Scottish solar industry could support by 2030, based on Solar Energy Scotland analysis of different sources. Note that the figures are estimates based on data from the sources provided. The organisations listed under 'source data' were not involved in producing them.⁴

Source data	Source data relates to	Analysis	Jobs by 2030 (4GW deployed capacity)	Jobs by 2030 (6GW deployed capacity)
Solar Energy Industries Association ⁵	US	Solar Energy Scotland	10,033	15,050
Office for National Statistics ⁶	UK	Solar Energy Scotland	5,597	8,644
Solar Power Europe ⁷	EU	Solar Energy Scotland	5,623	8,434

The different figures represent variables including the fact that different solar markets have different labour and other requirements.

Overall, Scotland can be optimistic about the future of solar job creation for several reasons.

First, current employment data tends to focus on photovoltaics. Existing figures may therefore be an underestimate, as they do not include employment associated with solar heating technologies, the energy storage sector, or the broader supply chain.

4. Figures are indicative only. Solar Energy Scotland has aimed to standardise estimates where possible, and considers the figure based on ONS figures as a realistic minimum range for job creation in Scotland. Solar Energy UK intends to publish a detailed report on the economic impact of the solar industry in 2022. Given the need for long-term, stable policies to achieve net zero – which will require solar development to 2050 at a minimum – jobs in construction are considered in effect to represent long-term employment opportunities, where job creation can be annualised. The analysis presented reflects this.

5. <https://www.seia.org/research-resources/national-solar-jobs-census-2020>

6. <https://www.gov.uk/government/statistics/announcements/low-carbon-and-renewable-energy-economy-uk-2020>

7. <https://www.solarpowereurope.org/insights/thematic-reports/eu-solar-jobs-report-1>

Second, the pace and scale of development in the solar industry around the world is escalating sharply. Governments are setting enormous deployment targets – for example, Germany recently announced plans under which it could install 200GW of solar energy by 2035 – and this will incentivise the development of new technologies and project opportunities. These will in turn generate additional resource and supply chain needs.⁸ The Scottish energy storage industry, for example, is only in its earliest stages, but already has a huge pipeline of projects, the job creation potential of which is not included here.

The untapped potential of Scottish solar means there is a unique opportunity for major growth. This is made stark by comparison with countries on a similar latitude. Danish solar, for example, contributes nearly five times as much on a percentage basis to the Danish electricity mix as Scottish solar does to Scottish electricity.⁹

New solar projects are fully subsidy-free, and, across the UK, 2021 was a banner year for the sector, with a record amount of post-subsidy capacity deployed around the country. A huge amount of pipeline capacity was also added UK-wide, and industry members across the value chain are reporting a huge shortage of the skilled labour needed to deliver it. Jamie Vaux, Commercial Director at solar distributor Midsummer, said the following about 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.”¹⁰

Solar Energy Scotland Vice Chair, Josh King, echoed this:

“The potential for solar in Scotland is huge, but a clear ambition and stable policy are vital to capitalise on the opportunity. Solar can be rapidly deployed at all scales, and the recent surge in demand – which we expect to continue – is already leading to a serious skills gap. We need to focus on skilled apprenticeships, as well as upskilling and retraining those transitioning from traditional energy and engineering industries. The roles are ready and waiting.”

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

9. <https://solarenergyuk.org/wp-content/uploads/2021/10/ISES-Scotlands-fair-share-FINAL-PDF-Version.pdf>

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

Solar skills

The solar sector needs employees with a wide range of skills and experience. Roles available in the industry include:

- Surveyors, who assess buildings and land for their potential to host solar systems.
- System designers and planners specify equipment for a project, and use specialist software to forecast how much electricity or heat a system will produce, as well as its financial performance.
- Construction and trades roles, including high and low voltage engineers, civil engineers, project managers, electricians, and roofers. These roles are in particularly high demand in the industry. There is also a wide range of design and other engineers involved in creating the distribution and transmission systems which ensure that all parts of the country have a power supply.
- Energy advisors provide advice to, for example, homeowners, on how best to retrofit their properties.
- Operations and maintenance specialists monitor a solar system's performance, using data on how much energy is produced to carry out maintenance, and identify and rectify faults.
- Data analysts examine this information, which can be gathered manually or using thermal imaging cameras attached to drones, which need pilots.
- Solar cleaning specialists use robots and other equipment to keep solar arrays clean.
- Business development staff generate sales leads, provide advice to potential clients, carry out procurement, legal and compliance processes, and run company administration and governance.
- Communications and marketing teams promote the benefits of the solar industry to the public.
- Energy finance professionals such as asset managers generate funds, liaising with investors to support the next generation of solar projects.

- Product researchers and developers often work in academic labs or manufacturing, helping to improve the design of components such as solar panels themselves, the mounting equipment used to keep them in place, the inverters which ensure the electricity they produce can be used in homes and buildings, and energy storage technologies such as batteries. They also develop new installation types, such as floating solar projects. These include solar panels arrays which can float on bodies of water, such as reservoirs.
- Distributors and transport firms store and despatch solar equipment to where it is needed, holding a wide range of stock to ensure that every system can use the right equipment for the job.
- Environmental planners and natural capital experts support planning applications by ensure that solar projects improve the local environmental – for example, through planting new hedgerows to support plant and animal life and increase biodiversity.
- Sustainability professionals help ensure that all impacts of a solar project's lifecycle are considered, including how to decommission and recycle equipment at the end of its lifespan.
- A wide range of professional, scientific and technical advisory staff provide support relating to the areas above and take part in other activities in the solar and energy storage supply chain.

Supporting a just transition

The figures presented in the table above represent the job creation potential of the Scottish solar industry by 2030. However, to reach net zero by 2045, the solar industry will need to expand further, and given solar's benefits, with the right support it can be expected to do so.

We reiterate our call for the Scottish government to commit to a 2030 Scottish solar deployment ambition of 4-6GW, with further growth in the following decade, as Scotland moves to achieve net zero by 2045. Doing so would create substantial additional employment and economic opportunities.

It should be noted that because solar energy projects are inherently flexible and easy to deploy, the jobs they create are distributed around the country.

This means that the economic impact of an expanding solar industry will be felt around Scotland, from the Borders to the central belt, the Highlands and Islands and beyond.

The sector could also help deliver a just transition for offshore workers, whose technical and other experience would be a welcome addition to the renewable energy skills base. Important commitments such as the North East and Moray Just Transition fund should be used to help provide new employment for oil and gas workers. With appropriate skills training and vocational support, these employees can contribute to the solar sector. Scotland's clean energy industry can therefore draw on its industrial past to build a low carbon future.





Published in the United Kingdom by Solar Trade Association
Chapter House, 22 Chapter St, London, SW1P 4NP
© Solar Trade Association 2022



solarenergyuk.org



[@solarenergyscot](https://twitter.com/solarenergyscot)



[Linkedin.com/company/solarenergyscotland](https://www.linkedin.com/company/solarenergyscotland)