

Rooftop renewables

[New Things Fund](#)

5 February 2024

Written By [Hannah Dalglish](#)

Unlocking the potential for green energy in Hampshire and Sussex

Planning applications for Solar farms continue to hit the headlines, especially in local media. The [Countryside Charity, the Campaign for the Protection of Rural England \(CPRE\)](#) are regularly asked for help in challenging a solar proposal that would be an industrial scale intrusion into the landscape. But, climate breakdown poses the biggest threat to our countryside and we need renewable energy. How can the two be reconciled?

What is solar energy and why is it relevant for the countryside?

Solar power is a key source of renewable energy that can bring us closer to Net Zero (when carbon dioxide is no longer added to the atmosphere faster than it is absorbed). Solar photovoltaic (PV) panels convert the Sun's energy into electricity, which is either used locally or connected to the National Grid and taken into the national supply. The technology is now well-established and still improving as panels become more efficient and better designed.

But the bigger the area on which the Sun's rays can fall, the more energy can be produced. Therefore, large scale producers of solar energy want to cover as big an area as possible, at as low a cost as possible. Inevitably, they turn to green fields – particularly those in sunnier parts of the country.

Depending on their location, solar farms can have an industrialising impact on the landscape. Along with loss of productive farmland, this is often why solar energy installations are opposed.

Why do we need solar energy?

Solar energy has a vital role to play in replacing the fossil fuels that currently power so much of our daily lives. By generating electricity without releasing carbon dioxide into the atmosphere, solar panels can help us reduce our contribution to global heating. It's a way for us to limit climate breakdown and its impact on our lives and the countryside.

However, there's no such thing as a free lunch: all energy forms have impacts. But there are two clear principles when it comes to getting to zero carbon and reducing the risk of climate breakdown. First, we must stop pumping carbon into the atmosphere. Second, we must use energy much more efficiently.

It's clear that we need to see lots more solar energy being generated in this country, especially as fossil fuel imports have become so expensive. The real issue is where new solar panels should go.

Given the scale and speed of the low-carbon transition that we need to make, some sensitively-sited ground-mounted solar is inevitable, at least in the short term. Where that's

the case, we need to make sure that the land is used in a ‘multifunctional’ way – farming beneath or around the panels, and enhancing onsite biodiversity, for example; that local communities benefit financially, not just big developers; and that the beauty of our landscapes is protected.

But the more solar capacity we put *elsewhere*, the less greenfield land we need to use. So at CPRE we believe ***the best place for as much solar as possible is surprisingly simple – on our roofs.***

Lower bills

Having solar panels on the roofs of homes across the country would not only be a great way to reduce our reliance on fossil fuels. It could be a crucial part of the solution to the energy bills crisis that is hitting rural communities so hard. It’s been reported that having solar panels on your roof [could cut the typical family electricity bill by £300 a year](#), or even up to £900 a year if you have electric heating.

As the cost of electricity keeps rising, the value of generating and using your own electricity from right on top of your home increases too. And if a battery is installed along with the solar panel, this can have an even greater benefit by reducing pressure on the local electricity network. This means an approach to producing low carbon energy which focuses on rooftop solar will be a win-win for the environment – and for hard pressed communities across the country.

The evidence from other countries shows that this is not just a good idea, it’s already happening. In contrast to the UK’s approach, France has announced plans to fast track renewable energy by [mandating car parks nationwide be covered by solar panels](#). And in 2020, 83% of newly installed solar capacity in Germany was on rooftops.



John Morrison / Alamy Stock Photo

Protecting landscapes and wildlife

Rooftops are the best place for solar panels for our landscapes and wildlife, too. We have huge competing demands for the use of land in this country. We’ve got to consider new homes, growing food, space for nature, and generating the energy we all use in our daily lives. Putting solar panels on the millions of roofs across the country means that we don’t

need to use as much extra land to meet our energy needs. This saves land from industrialisation, and paves the way for regenerative agriculture that will produce food and provide a much-needed home for declining wildlife species.

Finally, we wouldn't be living up to our heritage at CPRE if we didn't make the case that maximising solar panels on rooftops protects the beauty of our landscapes. After all, it's unspoiled views of green fields and rolling hills that make the English countryside so special.

The loss of green fields (whether 'high grade' farmland or not) to metal and glass is so strongly resisted by local communities because it would transform a part of the countryside that matters intimately to them. The impacts of climate breakdown on the countryside and its residents will similarly be transformative and disastrous – flooding, heatwaves, crop loss, infrastructure breaking and more.

At CPRE, we want to avoid *both* these outcomes; we don't want to trade off one against the other. We believe that cutting carbon pollution, building local energy resilience and protecting the beauty of our green spaces are at least as important as the profit-based considerations that often drive big energy developers. So, if we can protect those spaces by generating our low-carbon electricity on rooftops, so much the better, even if it means some businesses don't profit quite as much.

How do we help rooftop solar to become a reality?

At CPRE we have been working to develop our Rooftop Renewable campaign at a National Level: [A rooftop revolution: turning possibility into reality - CPRE](#).

It sets out very clearly the case for getting around 60% of our growing solar power requirement from new-build homes, commercial buildings and car parks – and the huge potential to go much further over time through 'retrofitting' rooftop renewables on more existing buildings. At the same time, communities' concerns mount over applications to turn more of our farmland into large-scale solar farms.

There is huge enthusiasm for solar on our buildings. But to deliver a rooftop revolution, we need policy change nationally and locally. While our colleagues pressure Government and Opposition parties nationally, CPRE in Hampshire and Sussex are looking at what can be done at the local level – in council chambers and on the ground.

We have teamed up with experts at the University of Southampton to demonstrate the potential for rooftop solar on existing buildings and car parks across the two counties. We want to show councillors, planners and other policymakers how much scope there is for rooftop solar – and encourage them to make the policy changes we need to get as many panels on roofs as quickly as possible, minimising the need for other land use. We also hope to use the resultant mapping with communities to identify 'quick win' projects with real potential – to help residents, businesses, schools and more, get solar on to their own roofs, cutting carbon pollution and energy bills.

The unique partnership with the University of Southampton intends to make use of cutting-edge techniques to identify and map potential rooftop sites that could host solar panels – giving an estimate of the total potential capacity across each county, as well as a starting point for specific promising sites that can then be 'ground-truthed' by communities.

The project builds on previous work carried out by the [University of Southampton's Energy and Climate Change Division](#) which previously mapped the potential for solar of each rooftop in the city of Southampton. The work takes into account the shading of the roof by obstacles such as chimneys, trees and other buildings. In this new research, the map will be scaled-up to cover the planning areas of Hampshire and Sussex. The benefit of this approach is that the results can be broken down by different types of building in each planning context. For example, what is the potential for solar rooftop coverage from large commercial and industrial buildings in a given town? This can then be compared with local proposed (and existing) solar farms when planners need to decide on whether to give the go ahead to new schemes.

This project has been funded by the Centre for the South – New Things Fund.