

Renewable Electricity Progress in Wiltshire

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Regen is a not-for-profit centre of energy expertise and market insight whose mission is to transform the energy system for a zero-carbon future.

Regen offers independent expert advice and market insight on all aspects of sustainable energy delivery. We use our technical expertise, industry research and policy knowledge to support a range of public and private sector organisations to make the most of their clean energy opportunities.



1 Introduction

Wiltshire Council adopted a Climate Strategy¹ in February 2022, setting an ambition of achieving carbon neutrality by 2030. The Climate Strategy sets out the need to increase renewable electricity generation, with a focus "on a Wiltshire-wide assessment of the potential for renewable energy production".

Wiltshire's ambitions contribute to the UK's legally binding commitment to achieve net zero greenhouse gas emissions and the targets set to develop renewable electricity generation in the British Energy Security Strategy², including a five-fold increase in solar power to 70GW by 2035.

This note provides a high-level review of progress on developing renewable electricity in Wiltshire and sets out Regen's opinion of the prospects for further renewable electricity projects to be developed in the county by 2030 to contribute to Wiltshire's climate ambition. The purpose of the note is to contribute to the consideration of renewable electricity projects in the planning system in Wiltshire. The note is based on data on the current installed capacity of renewable electricity projects and the pipeline of new projects in development, coupled with Regen's extensive experience working with the National Grid Electricity System Operator, Distribution Network Operators and renewable electricity developers.

2 Renewable electricity deployment

Wiltshire Council commissioned the "Wiltshire Carbon Emissions Baselines and Reduction Pathways Report"³ as part of the evidence base for its Climate Strategy. The report outlines key greenhouse gas emission sources and sets out a 'High Ambition Pathway' to reduce emissions by 55% by 2030 relative to 2020 levels. The report acknowledges this pathway is, however, well short of that required to achieve a net zero Wiltshire by 2030.

¹ [Wiltshire Climate Strategy 2022-2027](#)

² [British energy security strategy 2022](#)

³ [Wiltshire Carbon Emissions Baselines and Reductions Pathways March 2022](#)

Renewable electricity pathway

The Wiltshire Carbon Emissions Baselines and Reduction Pathways Report modelled the potential development of renewable electricity generation as part of the High Ambition Pathway. This modelling is based on scaling up current installations to meet energy demand locally with renewables. It does not consider local constraints on renewable development. Table 1 shows the High Ambition Pathway for renewable electricity against current installed capacity.

Table 1: Wiltshire Carbon Emissions Baselines and Reduction Pathways Report High Ambition Pathway for renewable electricity generation and BEIS data on installed capacity.

Technology Type	2021 Installed Capacity (MW)	2030 Target Capacity (MW)
Photovoltaics (PV)	554	590
Onshore wind	0.1	560
Other (hydro, anaerobic digestion, etc.)	29	47

Renewable electricity deployment

Regen has reviewed renewable electricity deployment in Wiltshire. Figure 1 shows the installed renewable electricity capacity in Wiltshire over the last eight years, according to data from the Department for Business, Energy, and Industrial Strategy (BEIS)⁴. The bar on the far right shows the increase in the renewable capacity set out in the 'High Ambition Pathway'.

Solar photovoltaics is the only renewable electricity technology to be successfully deployed at scale in Wiltshire. Large-scale projects provide the vast majority of the capacity of solar photovoltaics⁵. However, deployment has largely stalled in recent years after rapid growth in 2014 and 2015. The largest other technology is landfill gas, of which 14.5 MW has been installed. We expect landfill gas capacity to decrease over time as gas emissions from landfills reduce. The Pathways Report envisages that the other renewables delivering growth in

⁴ [Department for Business, Energy, and Industrial Strategy- Regional Renewable Statistics](#)

⁵ The Wiltshire Carbon Emissions Baselines and Reduction Pathways Report differentiates between 'local' and 'large-scale' solar but does not define these terms. Data from SSEN's Embedded Capacity Register shows that the vast majority of solar PV capacity is from projects over 1 MW. Projects under 1 MW in scale provide less than 5 MW of capacity in total.

renewable electricity by 2030 will largely be from onshore wind projects. There are, however, currently no significant onshore wind generation sites in Wiltshire.

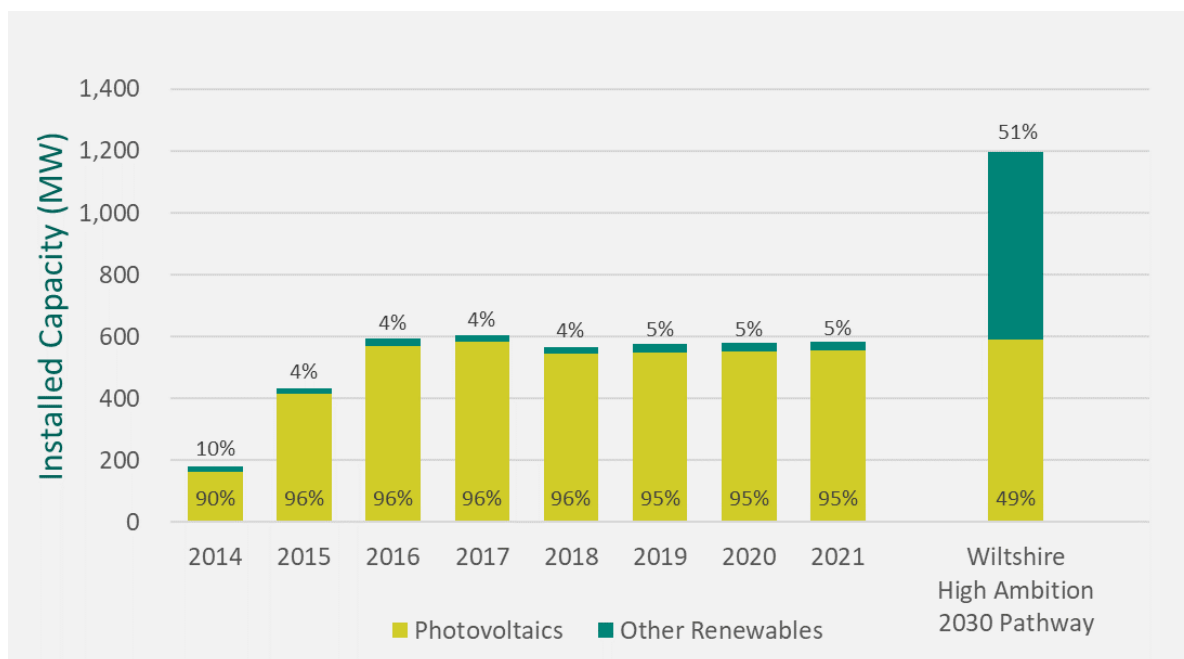


Figure 1: Renewable electricity capacity in Wiltshire - separated by solar and other technologies. Sources: BEIS Regional Renewable Statistics, Wiltshire Council Reports.

3 Renewable electricity development

Renewable energy projects in the pipeline

To understand what renewable electricity generation projects are currently being developed in Wiltshire, Regen has reviewed Scottish and Southern Energy Distribution's Embedded Capacity Register. This analysis looks at projects seeking to connect to the local electricity distribution network, which covers the vast majority of renewable electricity generation projects (schemes seeking to connect directly to the national electricity transmission network are not included in this analysis).

Table 2 sets out the capacity of renewable electricity projects that have sought a connection to the distribution network as of October 2022. The data shows that large-scale solar projects continue to dominate renewable electricity development in Wiltshire. Rooftop solar is the only other significant contributor to the pipeline of projects but contributes a small percentage of the capacity in development.

Table 2: Pipeline of renewable electricity generation projects by technology type. Source: SSEN Embedded Capacity Register

Technology Type	Proposed Capacity (MW)	Number of Sites
Solar photovoltaics <1 MW	3.68	26
Solar photovoltaics >1 MW	607	28
Anaerobic digestion	0.58	1

The Wiltshire Carbon Emissions Baselines and Reduction Pathways Report envisages extensive onshore wind development (560 MW). However, there have been no large-scale wind projects successfully developed in Wiltshire and no wind projects in the development pipeline. National planning policies have created a virtual ban on onshore wind in England due to the requirements introduced in 2015 for wind sites to be identified in the Local Plan and for all objections to be addressed.

The government is currently consulting on changes to the National Planning Policy Framework⁶ to ease planning restrictions for onshore wind. However, the outcome of this is not yet clear. The current proposals would require Wiltshire Council to adopt specific policies supporting the development of onshore wind projects. There are also significant constraints on onshore wind development in many parts of Wiltshire, as 44% lies within an Area of Outstanding Natural Beauty (AONB), and an area of the New Forest National Park lies in the south of the county⁷. Other constraints on wind development include topography, MOD land, wind speeds and proximity to residential properties.

The data also shows a large pipeline of proposed battery sites, with twenty-one projects totalling 1,240 MW of storage capacity. Utility-scale battery storage can complement renewable electricity such as solar photovoltaics in ensuring a robust and resilient electricity system by providing balancing and frequency response services to National Grid Electricity System Operator. Wiltshire already has a number of large-scale battery projects installed; however, this technology is not considered in Wiltshire's current climate pathways.

⁶ [National Planning Policy Framework](#)

⁷ [Wiltshire Council, Wiltshire Core Strategy \(2015\), Para 6.82 \(p266\).](#)

Grid constraints

Regen and several renewable energy trade organisations recently wrote⁸ to the Secretary of State Grant Shapps MP to raise concerns that the lack of capacity on the national electricity transmission network means that **new proposed electricity generation projects will commonly receive connection dates in the late 2030s**. These constraints make it extremely challenging for renewable electricity generation projects that do not already have grid connection agreements to be developed in Wiltshire this decade.

4 Conclusions

Wiltshire faces a significant challenge to meet the 2030 High Ambition Pathway for renewable electricity generation, which is itself well below the pathway required to achieve the Council's climate strategy net zero ambition. The development of new projects has stalled in recent years as developers have faced major challenges.

Onshore wind projects could make an important contribution to renewable electricity generation in Wiltshire but are highly unlikely to be developed at scale by 2030. Projects typically take many years to develop, and developers are unlikely to commence work on site finding and project development until the government has confirmed changes to the National Planning Policy Framework and Wiltshire Council has adopted specific policies on onshore wind development. Furthermore, new projects applying for a connection to the grid today would receive a connection date in the late 2030s.

Solar photovoltaics is the renewable electricity technology with potential to enable Wiltshire to make significant progress towards its High Ambition Pathway by 2030, and the much more challenging target of net zero. There is a history of successful projects and a significant pipeline of new projects in development. The data on deployed solar projects and the pipeline of new developments in Wiltshire shows that whilst rooftop solar can play an important role, **large-scale ground-mounted solar installations are the only viable projects to deliver significant new renewable electricity generation capacity by 2030**.

The key constraints on large-scale solar developments being successfully developed by 2030 are the long wait in the queue for a connection to the electricity grid that new projects face, and obtaining planning permission. **The capacity of renewable electricity generation installed**

⁸ [Regen to BEIS Secretary of State](#)

in Wiltshire by 2030 will largely be determined by whether the pipeline of large-scale solar installations in development that have a grid connection date before 2030 are successful in obtaining planning permission.

The development of battery storage projects would complement renewable electricity generation schemes by supporting the resilience and robustness of the national electricity system.

The Wiltshire Carbon Emissions Baselines and Reduction Pathways Report considered the influence of Wiltshire Council over renewable energy growth within the county and noted local planning policy is the area over which the Council has the most influence. **The most significant action Wiltshire Council can take to make progress towards its renewable electricity ambitions as a key part of its Climate Strategy is to place a significant weight in planning decisions on the central contribution the pipeline of large-scale solar and storage projects under development can make to achieving its 2030 climate ambitions.**

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