GreenSketch

In collaboration with:

FOX ESS | TONGWEI

THE ROOFTOP VALUATION REPORT

UNITED KINGDOM

Generate your Sunlight Salary

September 2026

FROM DISTRIBUTED INFRASTRUCTURE TO NATIONAL SAVINGS

Discover the value of your rooftop and see how sunlight can turn into real household income

GreenSketch

CONTENTS

Contents

Executive Summary 04

Raising the roof on solar ambition

The UK's residential rooftops as distributed energy infrastructure 07

The financial potential of the UK's residential solar and storage sector

Our methodology 12

The UK's Sunlight Salary Map 16

United Kingdom

England

Northern Ireland

Scotland

Wales

Our analysis 28

Your guide to generating Sunlight Salary

Solar, battery and heat pump solutions for homeowners 31

Conclusion 36

References 37

Acknowledgments

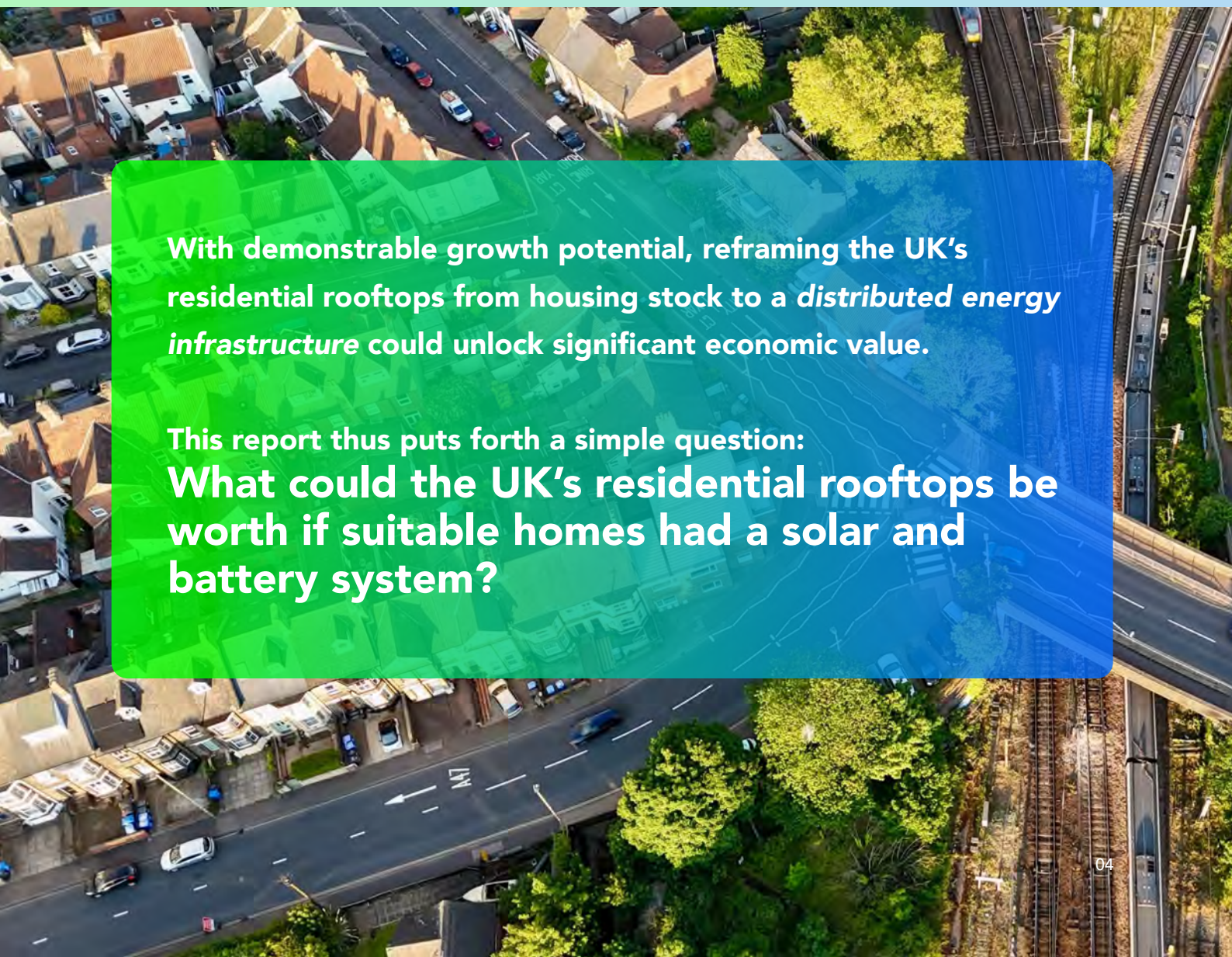
Disclaimer

Supporting Partners 38

About Us 39

Executive Summary

The UK's residential solar market is entering its next phase. From an emerging technology, it is now moving towards being a mainstream component of the UK's energy system. 2025 had a record number of small-scale installations,[1] majority on residential rooftops, and small-scale installations (up to 10kW) across the UK at almost 1.85 million by year-end.[2] Government ambition appears geared towards acceleration, through plans such as the Solar Roadmap and schemes including 0% VAT and the Future Homes Standard.



With demonstrable growth potential, reframing the UK's residential rooftops from housing stock to a *distributed energy infrastructure* could unlock significant economic value.

This report thus puts forth a simple question:

What could the UK's residential rooftops be worth if suitable homes had a solar and battery system?

Our Findings: the UK's Sunlight Salary

Using Emily—GreenSketch's AI agent designed to deliver estimates on solar, storage and savings for homeowners—we assessed over 15 million rooftops across the UK, modelling the projected financial performance of an optimised solar and battery system at each building individually. Our analysis, based on an investment cost of £7,844.50, estimates:

£14.2 billion
Total annual electricity bill savings across the UK.

£946
Average annual bill savings per home.

£23.35 billion
Total returns over 10 years.

£1,555
Average returns after 10 years.

£162.7 billion
Total returns over 20 years.

£10,832
Average returns over 20 years.

7.9 years
Average payback period.

10.2%
Average Internal Rate of Return.

Our findings show a clear geographic pattern, with England having the strongest overall returns, projecting an estimated annual savings of £954 and 7.81-year payback period. By contrast, Scotland records the lowest average annual savings at £869 and longest payback period of an average 8.54 years. This is primarily due to availability of sunlight. Perhaps unsurprisingly, Southern regions tend to enjoy better solar performance compared to northern ones, and the same pattern holds across countries and within them.

The exception to the north-south divide is Northern Ireland, where solar irradiation is more affected by its coastal and inland geography. The strongest returns in Northern Ireland are clustered around the east coast, while the west coast and inland areas typically experience more cloud cover and rainfall, thus reducing solar performance. Geography, whether latitude or landscape, remains a key determinant of solar performance.

Regardless, our data challenges a common misconception of solar being unviable in the UK due to its famously grey skies. Every country assessed in this report generates an average annual savings above £800, demonstrating the potential for households across the UK to generate meaningful, long-term financial returns with an optimised solar and storage system.

Raising the Roof on the UK's Solar Revolution

The figures reported here represent the financial potential of today's rooftops, rather than a forecast of the future market. They show how residential solar and storage already have meaningful financial value at scale, while highlighting the extent of how much the market could grow. With solar accounting for roughly 6.4% of the UK's total electricity generation in 2025,[3] accelerating residential solar and storage remains critical in achieving the UK's renewable energy ambitions.

This report is a starting point for making that opportunity clear and providing pathways for homeowners to better understand their solar potential. For installers, the estimated £14.2 billion a year in annual savings illustrates the scale of the opportunity across the current market, and underscores how much more the market could potentially unlock.

Getting to the next stage of the UK's solar revolution will go beyond putting panels on roofs, to properly valuing the nation's roofs as a distributed energy asset.

Raising the roof on solar ambition: the UK's residential rooftops as distributed energy infrastructure

Energy around the UK's solar industry is approaching a tipping point. While its investment in renewables were once considered lagging behind the rest of the world,[4] concerns over energy security have accelerated adoption, with observers noting solar energy's increasingly prominent role in the nation's renewable energy mix.[5] In 2025, solar accounted for roughly 6.4% of the UK's total electricity generation,[6] reaching 22.4 GW against a government target of 46 GW from solar[7] by 2030.

Within the residential sector, feed-in-tariffs were officially introduced in April 2010, marking the start of a solar boom. Over 800,000 homes are covered by the scheme, which was replaced by the Smart Export Guarantee in 2020.[8] Residential solar accounted for 18% of newly installed solar capacity in 2025;[9] in the same year, rooftop solar PV installations hit a record of over 255,000.[10] In June 2025, the government made a commitment to include solar panels on the vast majority of new homes[11] by default. That same month, Ed Miliband MP, then-Secretary of State for Energy Security and Net Zero announced the Solar Roadmap, stating: "We will push ahead on a solar rooftop revolution, while tackling the barriers of planning, grid, supply chains and skills."[12]

Against this backdrop of bubbling potential, this report seeks to unlock the next stage of the UK's solar industry by providing national-level data on the potential of the entire residential solar market and simplifying the journey to clean energy for homeowners.

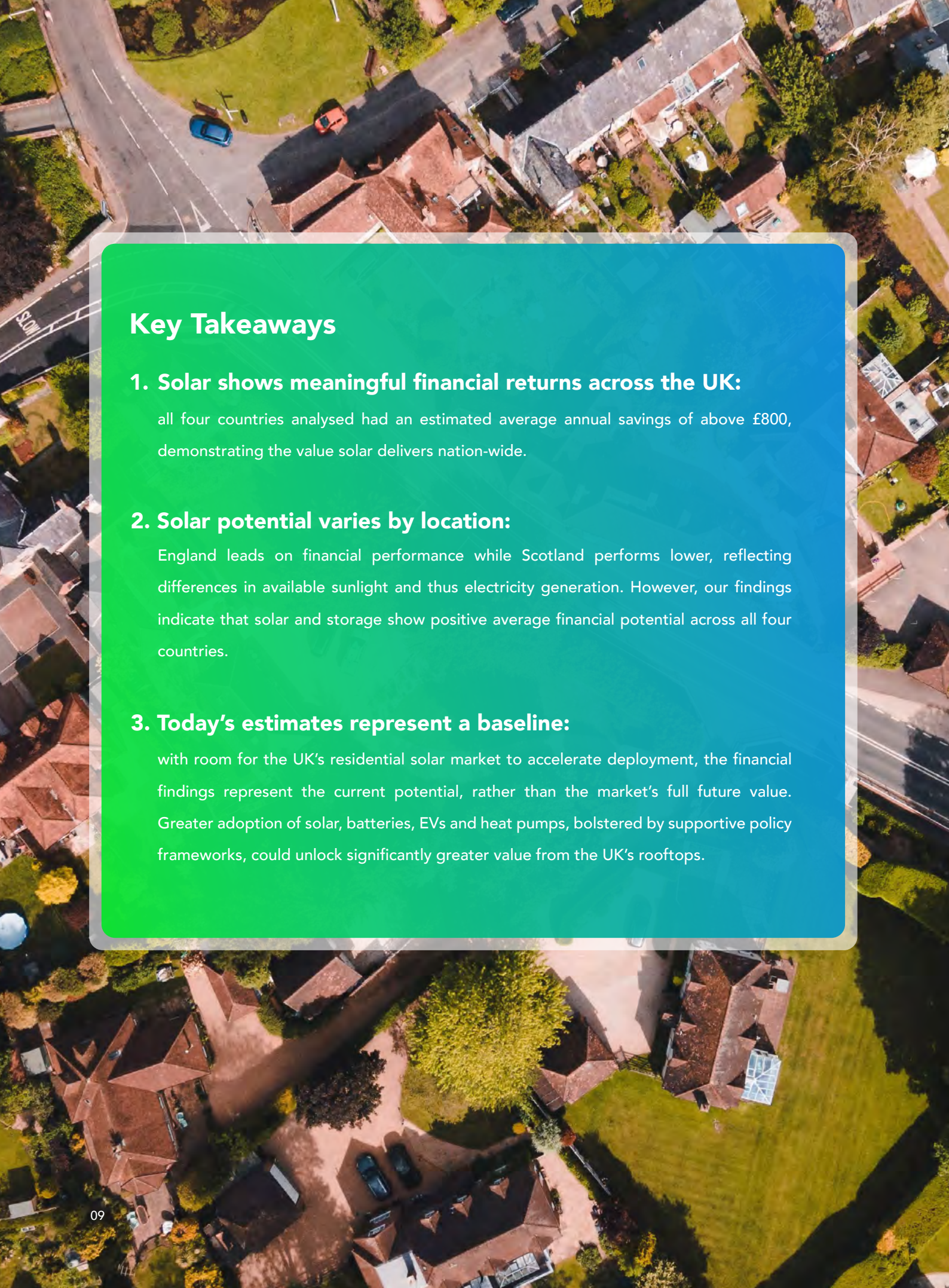
We ask one straightforward question:
What if more of the suitable rooftops in the UK had an optimised solar and storage system?

Our report makes the case for reframing rooftops as a distributed, decentralised energy infrastructure and financial asset class. Breaking down the central question, it aims to establish:

1. ***The potential total financial value of residential rooftops across the UK, if all suitable homes adopted solar and storage solutions; and***

2. ***The estimated financial returns of solar generation paired with a battery for each household.***

We also show where the highest returns can be found in the UK, and how to maximise benefits for homeowners through increasingly mainstream technologies such as home batteries, heat pumps and electric vehicles.



Key Takeaways

1. Solar shows meaningful financial returns across the UK:

all four countries analysed had an estimated average annual savings of above £800, demonstrating the value solar delivers nation-wide.

2. Solar potential varies by location:

England leads on financial performance while Scotland performs lower, reflecting differences in available sunlight and thus electricity generation. However, our findings indicate that solar and storage show positive average financial potential across all four countries.

3. Today's estimates represent a baseline:

with room for the UK's residential solar market to accelerate deployment, the financial findings represent the current potential, rather than the market's full future value. Greater adoption of solar, batteries, EVs and heat pumps, bolstered by supportive policy frameworks, could unlock significantly greater value from the UK's rooftops.

The financial potential of the UK's residential solar and storage sector

The UK has a suite of policies and schemes in place to activate its rooftop solar revolution. The below list is non-exhaustive but in-brief, these include:

Taxes and tariffs

0% VAT (UK)

From 1 April 2022 to 31 March 2027, residential properties receive 0% VAT on energy-saving materials including solar, from a previous 5%.[13]

Smart Export Guarantee (England, Scotland, Wales)

Replacing feed-in-tariffs in 2020, households earn a pence per kWh rate for energy exported back to the grid, depending on provider and type of tariff (fixed/variable). Systems are required to be MCS certified.[14]

Subsidies on upgrades

ECO4 Scheme (England, Scotland, Wales)

The £4 billion scheme funded by major energy suppliers supports means tested households living in energy efficiency band D-G homes (E-G for social housing and private rented accommodation) with energy efficient upgrades. The scheme runs from 2022–2026.[15]

Warm Homes Plan (England)

Launched in January 2026, the £15 billion scheme offers fully-funded upgrades including solar panels for eligible low-income households. The plan includes £600 million funding for solar and batteries for low-income households, and low-to-zero interest loans for households regardless of income.[16]

Planning and permits

Future Homes Standard (England)

Published 24 March 2026, the regulations on low-carbon housing include requirements for newly-built homes to come with on-site renewable electricity generation, with solar expected on the majority of new homes alongside low-carbon heating. The standard comes into force from March 2027 with a one-year transition period.[17]

Permitted Development (UK)

Most UK homes fall under Permitted Development and do not require planning permission. However, works on listed buildings (Grade I, II or II*) that would affect its character require Listed Building Consent in addition to planning permission.[18]

MCS certification (UK)

The UK's official quality mark for small-scale renewable energy. MCS certification is typically required for homeowners to claim certain grants or apply for the Smart Export Guarantee. Installers also need to be MCS certified in order to issue their customers with an MCS certification upon completing installation.[19] As of July 2026, MCS data shows that there were 4,777 certified PV installers in the UK + Isle of Man.

2025 saw a record number of small-scale solar installations,[20] most of it on domestic rooftops and with small-scale installations (up to 10 kW) reaching almost 1.85 million at year-end.[21] With residential demand meeting government ambition, the trajectory for residential solar is clear. A critical next phase will be to untap the value residential solar creates for households and the nation.

To unlock this potential, more information about the residential solar market is essential. Despite growing adoption, residential roofs may not yet be widely considered as economic assets. This report addresses that gap by quantifying the estimated financial opportunity represented by residential rooftops across the UK.

Rather than examining the market through installed capacity or adoption rates, we evaluate rooftops as long-term financial assets. By modelling an optimised solar and battery system for most suitable homes, we estimate both the aggregate value of the UK's distributed rooftop potential and the financial returns available to individual households.

Our Methodology

GreenSketch, a full-stack, AI-driven solar industry ecosystem platform, has developed Emily, an AI agent designed to deliver near-instant rooftop solar and financial assessments, enabling solar and battery design and rooftop valuation—thus estimating the current value of a roof based on its solar potential.

Emily generates solar and energy storage configurations at each eligible address, using AI-based roof recognition, GIS services, and a series of core computational logics. We use the Local Authority Districts as a framework for our data categorisation. This enabled us to aggregate data on over **15 million** identifiable roofs across all the UK individually. We then applied basic economic calculations to derive UK-wide, country-, region- and district-level results. Within the four countries, we grouped the data using geographical regions, with the exception of Northern Ireland where we used the counties, though this—as the findings will demonstrate—also follows a geographical pattern.

Instead of extrapolating national-level results from a sample, what makes Emily's modelling and process distinct is that it **models the solar potential of suitable rooftops in the UK individually**. We leverage leading-edge models to increase the accuracy of 3D building reconstruction, which in turn leads to more precise data. Our calculations include the average system, battery size, annual generation capacity and self-consumption rates, anchored to current technical and regulatory conditions.

A more detailed explanation of the process and core modules applied is as follows:

1. Basic data acquisition and potential assessment

This step involved identifying the physical limits of each roof using GIS and 3D modelling, obtaining information on the roof's slope orientation (the angle and direction the roof faces) and number of installable panels. We employed industry-leading AI models to perform visual reconstruction from satellite imagery. This process digitally recreates approximately 87% of buildings from 2D images to 3D models with high fidelity, aiming to ensure that the data models their true-to-life physical forms.

2. Electricity demand derivation

We applied existing preset data on electricity consumption in each region, calculating each home's average daily, daytime, evening peak, and overnight electricity consumption. This allowed us to align the analysis with rooftop potential and realistic household demand patterns.

3. System capacity and hardware selection

Emily calculates the number of PV panels and inverter specifications, and matches standard battery capacities by combining surplus PV energy with overnight electricity demand. For all new systems, our calculations include PV and battery combined as the default.

Emily then provides three different proposals based on different solar system set-ups. Emily also supports two different types of configurations: new systems (PV + inverter + battery) or storage expansion (battery-only).

Proposal	System configuration
Essential	*3.29 kWp PV + 5 kWh Battery*
Enhanced	*5.17 kWp PV + 5 kWh Battery*
Maximum	*7.05 kWp PV + 15 kWh Battery*

For the purposes of this report, we applied the Enhanced proposal configuration across all our data and analysis. Our calculations here are based on **entirely new** full systems (PV + inverter + battery).

4. Generation and energy flow simulation

To determine the average self-consumption rate, we utilised PV-GIS data to calculate hourly power generation, simulated energy flows for self-consumption, charging/discharging and grid feed-in. The formula we applied is for self-consumption is:

Self-consumption rate = (Direct Self-Consumption + Battery Stored Power) / Total PV Generation.

5. Financial and return analysis

To estimate the final value for each address, we calculated the average total system cost (including hardware, balance of system components, additional fees). On this basis and energy generation performance (determined by the amount of sunlight in a given region) and assumed household electricity consumption rates, we projected the annual bill savings, payback period, Internal Rate of Return (IRR), self-consumption rates and 20-year returns.

Our calculations do not factor in subsidies but include a Smart Export Guarantee rate £0.26/ kWh and an off-peak rate of £0.08 kWh. We have calculated the upfront investment for a basic 5.17 kWp PV + 5 kWh Battery systemin the UK to be approximately **£7,844.50** based on the Enhanced Proposal (5.17 kWp PV + 5 kWh Battery). (£700 kWp for 5.17 kWp PV, £300 for a 5kW inverter, £390 for a 5kWh battery, plus labour costs).

Co-creators

This report was developed in collaboration with our partners Fox ESS and Tongwei. As industry leaders and experts, their insights and experience provided a sounding board on the overall findings presented.

Nation-wide findings

We generated data on over **15 million identifiable rooftops** across the UK. Based on this and assuming that all of them have the **Enhanced Proposal configuration** (5.17 kWp PV + 5 kWh Battery) installed, we found:

Total value of rooftops across the UK

The total potential annual electricity bill savings across the over **15 million homes** analysed is estimated to be **£14.2 billion** in annual electricity bill savings. Across the UK, this represents a potential **£946** in annual savings on electricity for the average rooftop solar system.

Financial returns

The total financial returns in the UK for rooftop solar, based on the 15 million homes analysed, are estimated to be **£23.35 billion** after 10 years and **£162.7 billion** after 20 years. For the average home assessed, this translates to financial returns of an estimated **£1,555** after 10 years, **£10,832** after 20 years, with upfront investment costs factored.

Payback period and investment returns

The average UK household is estimated to see payback on their solar investment after **7.9 years**, with an Internal Rate of Return of **10.2%**.

The UK's Sunlight Salary			
Total Value (annal savings)	Average Returns (annual savings)	Average Payback Period	Rate of Return (IRR)
£14.2 billion	£946	7.9 years	10.2%
Total Returns (10 years)	Average Returns (10 years)	Total Returns (20 years)	Average Returns (20 years)
£23.35 billion	£1,555	£162.7 billion	£10,832

Table 1: The UK's Sunlight Salary.

3. The UK's Sunlight Salary Map

How effective a solar and storage system is depends on the right combination of factors. For homeowners, the performance potential of rooftops varies across regions and is mainly influenced by the **availability of sunlight, roof conditions**, and **electricity prices**.

We break down how this contributes to the highest returns across the UK using five key financial metrics:

(i) Annual bill savings (ii) Payback period (iii) Internal Rate of Return

(iv) 10-year returns and (v) 20-year returns

All reported metrics except for roofs analysed and totals are averages, and decimals have been rounded.

The UK's Sunlight Salary Map (by country)

Legend: Best performing Lowest performing

Country	Roofs Analysed	Total Returns (annual savings)	Average Returns (annual savings)	Average Payback Period	Rate of Return (IRR)	Total Returns (10 years)	Average Returns (10 years)	Total Returns (20 years)	Average Returns (20 years)
England	12,216,773	£11.65b	£954	7.81 years	10.4%	£19.99b	£1,637	£134.3b	£10,993
Northern Ireland	612,907	£569.7m	£930	7.95 years	10.0%	£860.3m	£1,404	£6.47b	£10,549
Scotland	1,252,842	£1.09b	£869	8.54 year	9.0%	£994.2m	£794	£11.68b	£9,323
Wales	936,292	£890.6m	£951	7.83 years	10.3%	£1.51b	£1,609	£10.24b	£10,938

Table 2: The UK's Sunlight Salary Map by country.

England's Sunlight Salary Map (By Region)

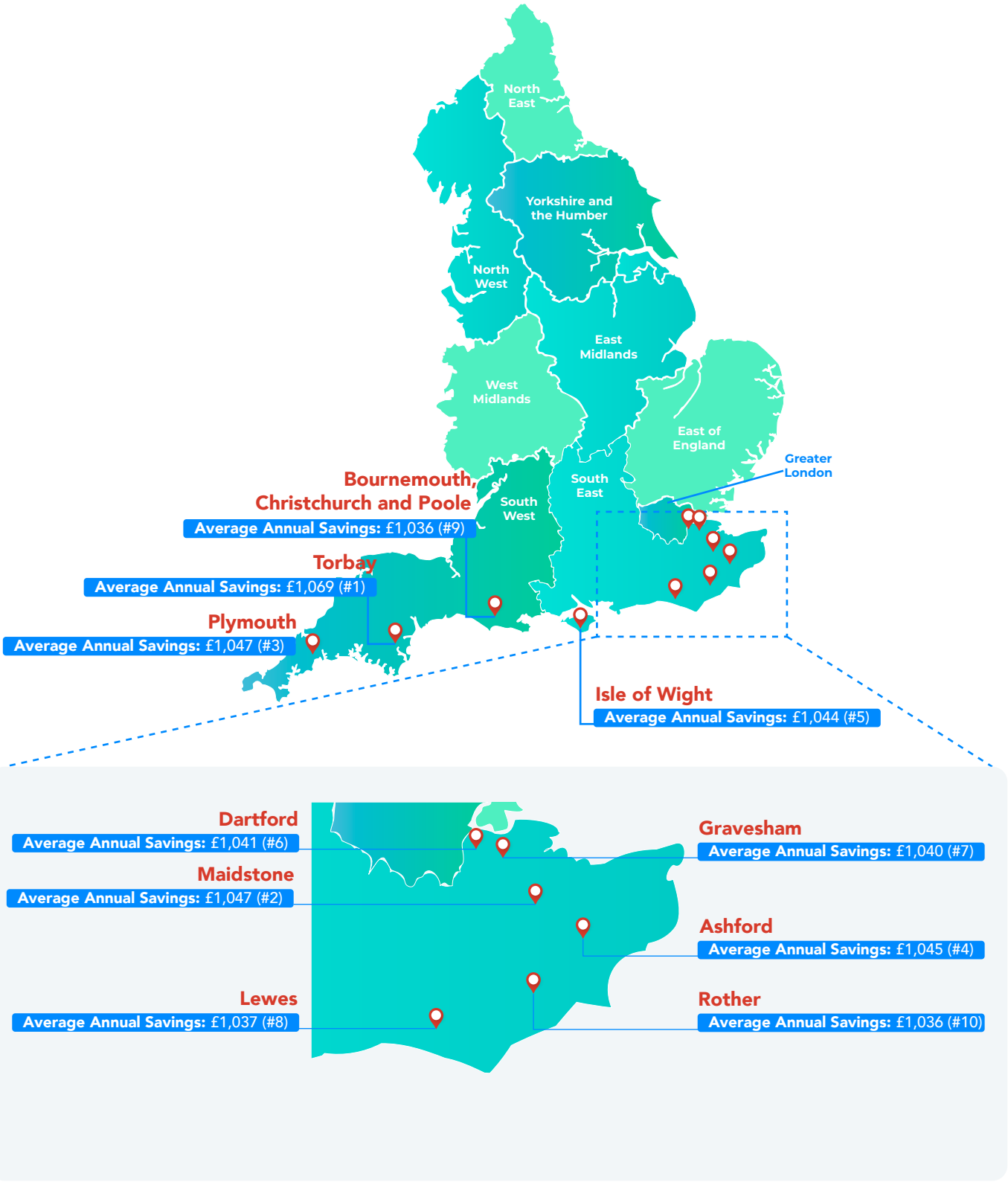


Table 3: England's Sunlight Salary Map.

Region	Average Annual Savings	Average Payback Period	Rate of Return	Average Returns (10 years)	Average Returns (20 years)
East Midlands	£928	7.98 years	10.0%	£1,387	£10,501
East of England	£977	7.64 years	10.7%	£1,864	£11,437
Greater London	£974	7.64 years	10.7%	£1,835	£11,381
North East	£920	8.07 years	9.8%	£1,299	£10,330
North West	£929	7.98 years	10.0%	£1,396	£10,522
South East	£991	7.55 years	10.9%	£2,001	£11,708
South West	£976	7.63 years	10.7%	£1,853	£11,421
West Midlands	£928	7.99 years	10.0%	£1,383	£10,496
Yorkshire and the Humber	£924	8.04 years	9.9%	£1,341	£10,411

Table 4: Top 10 Districts in England.

Rank	Average Annual Savings	Average Payback Period	Rate of Return	Average Returns (10 years)	Average Returns (20 years)
1	Torbay (£1,069)	Torbay (7.04 years)	Torbay (12.13%)	Torbay (£2,769)	Torbay (£13,222)
2	Maidstone (£1,047)	Plymouth (7.23 years)	Plymouth (11.80%)	Maidstone (£2,554)	Plymouth (£12,798)
3	Plymouth (£1,047)	Maidstone (7.24 years)	Maidstone (11.80%)	Plymouth (£2,553)	Maidstone (£12,795)
4	Ashford (£1,045)	Isle of Wight (7.24 years)	Isle of Wight (11.77%)	Ashford (£2,543)	Ashford (£12,774)
5	Isle of Wight (£1,044)	Ashford (7.25 years)	Ashford (11.79%)	Isle of Wight (£2,528)	Isle of Wight (£12,746)
6	Dartford (£1,041)	Dartford (7.28 years)	Dartford (11.70%)	Dartford (£2,490)	Dartford (£12,668)
7	Gravesham (£1,040)	Gravesham (7.29 years)	Gravesham (11.68%)	Gravesham (£2,480)	Gravesham (£12,647)
8	Lewes (£1,037)	Lewes (7.30 years)	Lewes (11.65%)	Lewes (£2,453)	Lewes (£12,595)
9	Bournemouth, Christchurch and Poole (£1,036)	Sevenoaks (7.30 years)	Sevenoaks (11.59%)	Bournemouth, Christchurch and Poole (£2,448)	Bournemouth, Christchurch and Poole (£12,590)
10	Rother (£1,036)	Rother (7.30 years)	Rother (11.63%)	Rother (£2,444)	Rother (£12,576)

Northern Ireland's Sunlight Salary map

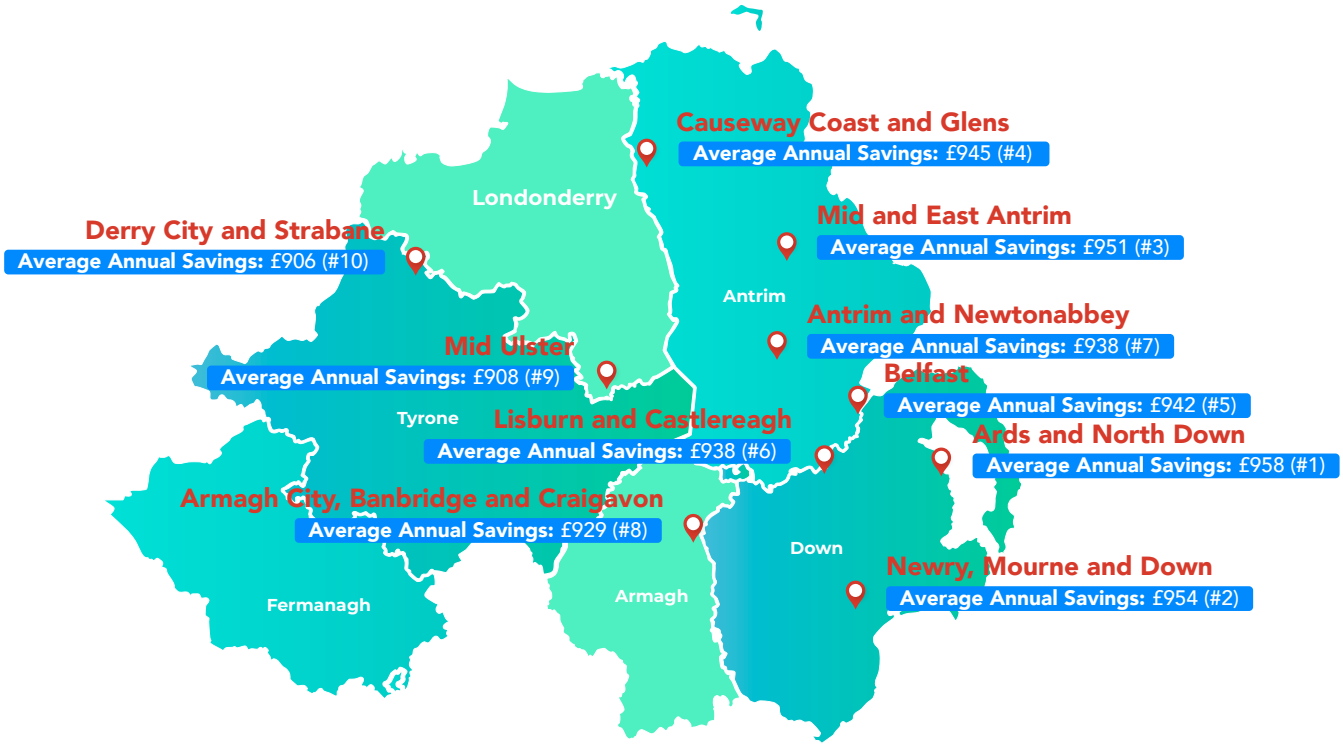


Table 5: Northern Ireland's Sunlight Salary Map.

County	Average Annual Savings	Average Payback Period	Rate of Return	Average Returns (10 years)	Average Returns (20 years)
Antrim	£943	7.83 years	10.2%	£1,538	£10,812
Armagh	£929	7.95 years	10.0%	£1,395	£10,532
Down	£950	7.77 years	10.3%	£1,605	£10,944
Fermanagh	£883	8.36 years	9.3%	£47	£9,652
Londonderry	£928	7.95 years	9.9%	£1,391	£10,524
Tyrone	£906	8.17 years	9.7%	£1,174	£10,099

Table 6: Top 10 Districts in Northern Ireland.

Rank	Average Annual Savings	Average Payback Period	Rate of Return	Average Returns (10 years)	Average Returns (20 years)
1	Ards and North Down (£958)	Ards and North Down (7.72 years)	Ards and North Down (10.45%)	Ards and North Down (£1,679)	Ards and North Down (£11,091)
2	Newry, Mourne and Down (£954)	Newry, Mourne and Down (7.74 years)	Newry, Mourne and Down (10.39%)	Newry, Mourne and Down (£1,640)	Newry, Mourne and Down (£11,013)
3	Mid and East Antrim (£951)	Mid and East Antrim (7.74 years)	Mid and East Antrim (10.36%)	Mid and East Antrim (£1,618)	Mid and East Antrim (£10,969)
4	Causeway Coast and Glens (£945)	Causeway Coast and Glens (7.79 years)	Causeway Coast and Glens (10.26%)	Causeway Coast and Glens (£1,558)	Causeway Coast and Glens (£10,851)
5	Belfast (£942)	Belfast (7.84 years)	Belfast (10.22%)	Belfast (£1,530)	Belfast (£10,798)
6	Lisburn and Castlereagh (£938)	Lisburn and Castlereagh (7.86 years)	Lisburn and Castlereagh (10.15%)	Lisburn and Castlereagh (£1,487)	Lisburn and Castlereagh (£10,713)
7	Antrim and Newtonabbey (£938)	Antrim and Newtonabbey (7.87 years)	Antrim and Newtonabbey (10.15%)	Antrim and Newtonabbey (£1,483)	Antrim and Newtonabbey (£10,705)
8	Armagh City, Banbridge and Craigavon (£929)	Armagh City, Banbridge and Craigavon (7.95 years)	Armagh City, Banbridge and Craigavon (10.15%)	Armagh City, Banbridge and Craigavon (£1,395)	Armagh City, Banbridge and Craigavon (£10,532)
9	Mid Ulster (£908)	Mid Ulster (8.15 years)	Mid Ulster (10.00%)	Mid Ulster (£1,188)	Mid Ulster (£10,125)
10	Derry City and Strabane (£906)	Derry City and Strabane (8.17 years)	Derry City and Strabane (9.68%)	Derry City and Strabane (£1,174)	Derry City and Strabane (£10,099)

Scotland's Sunlight Salary Map

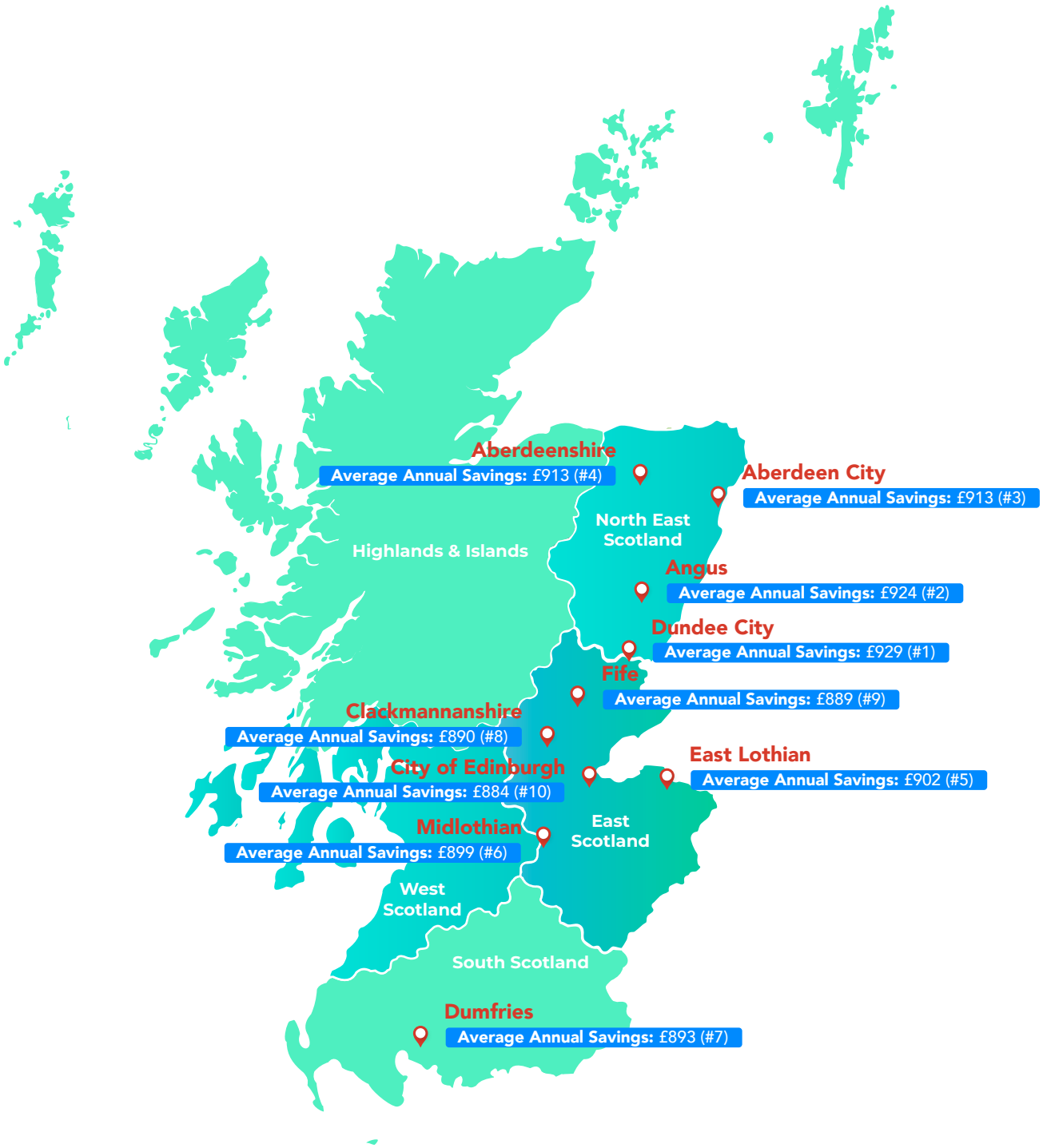


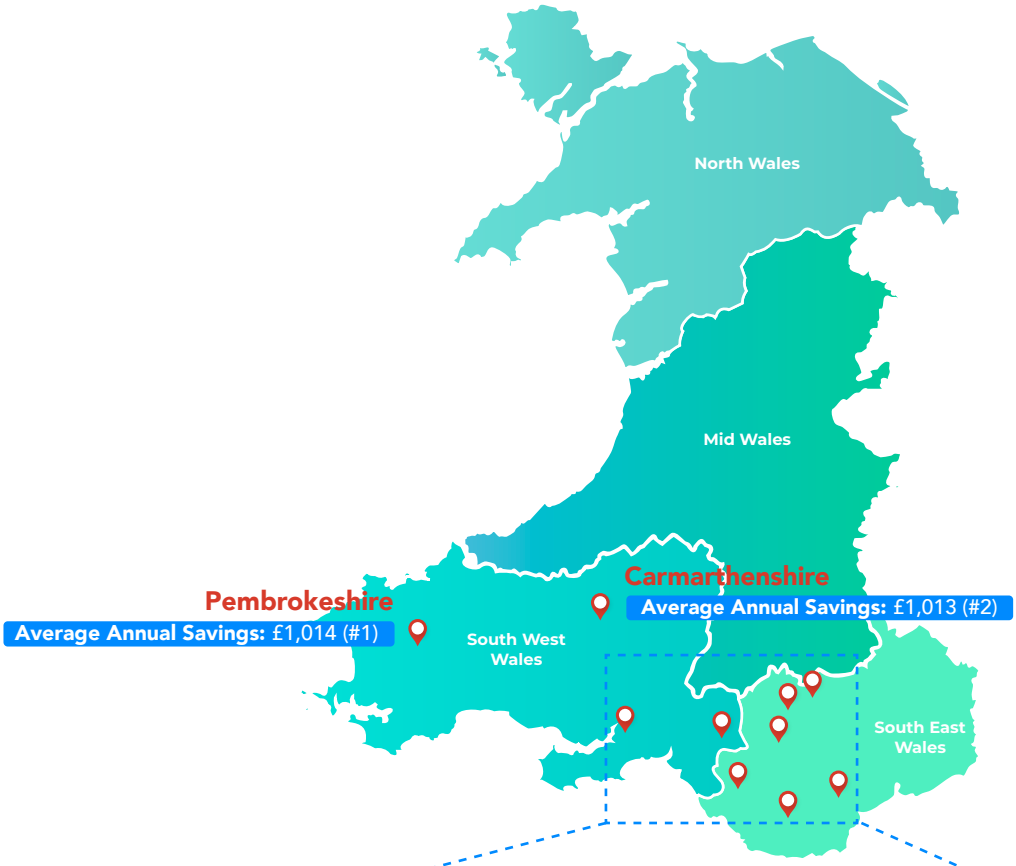
Table 7: Scotland's Sunlight Salary Map.

Geographical Region	Average Annual Savings	Average Payback Period	Rate of Return	Average Returns (10 years)	Average Returns (20 years)
East Scotland	£872	8.54 years	9.1%	£824	£9,382
Highlands & Islands	£819	8.92 years	8.2%	£307	£8,366
North East Scotland	£896	8.31 years	8.3%	£1,059	£9,844
South Scotland	£881	8.41 years	8.4%	£914	£9,562
West Scotland	£864	8.56 years	8.6%	£744	£9,228

Table 8: Top 10 Districts in Scotland.

Rank	Average Annual Savings	Average Payback Period	Rate of Return	Average Returns (10 years)	Average Returns (20 years)
1	Dundee City (£929)	Dundee City (8.00 years)	Dundee City (9.99%)	Dundee City (£1,388)	Dundee City (£10,492)
2	Angus (£924)	Angus (8.06 years)	Angus (9.90%)	Angus (£1,333)	Angus (£10,384)
3	Aberdeen City (£913)	Aberdeen City (8.17 years)	Aberdeen City (9.74%)	Aberdeen City (£1,233)	Aberdeen City (£10,186)
4	Aberdeenshire (£913)	Aberdeenshire (8.17 years)	Aberdeenshire (9.73%)	Aberdeenshire (£1,228)	Aberdeenshire (£10,178)
5	East Lothian (£902)	East Lothian (8.27 years)	East Lothian (9.91%)	East Lothian (£1,120)	East Lothian (£9,966)
6	Midlothian (£899)	Midlothian (8.30 years)	Midlothian (9.90%)	Midlothian (£1,095	Midlothian (£9,916)
7	Dumfries (£893)	Dumfries and Galloway (8.33 years)	Dumfries and Galloway (9.74%)	Dumfries and Galloway (£1,034)	Dumfries and Galloway (£9,801)
8	Clackmannanshire (£890)	Clackmannanshire (8.37 years)	Clackmannanshire (9.73%)	Clackmannanshire (£1,004)	Clackmannanshire (£9,739)
9	Fife (£889)	Fife (8.38 years)	Fife (9.56%)	Fife (£995)	Fife (£9,722)
10	City of Edinburgh (£844)	Scottish Borders (8.41 years)	City of Edinburgh (9.51%)	City of Edinburgh (£944)	City of Edinburgh (£9,620)

Wales's Sunlight Salary Map



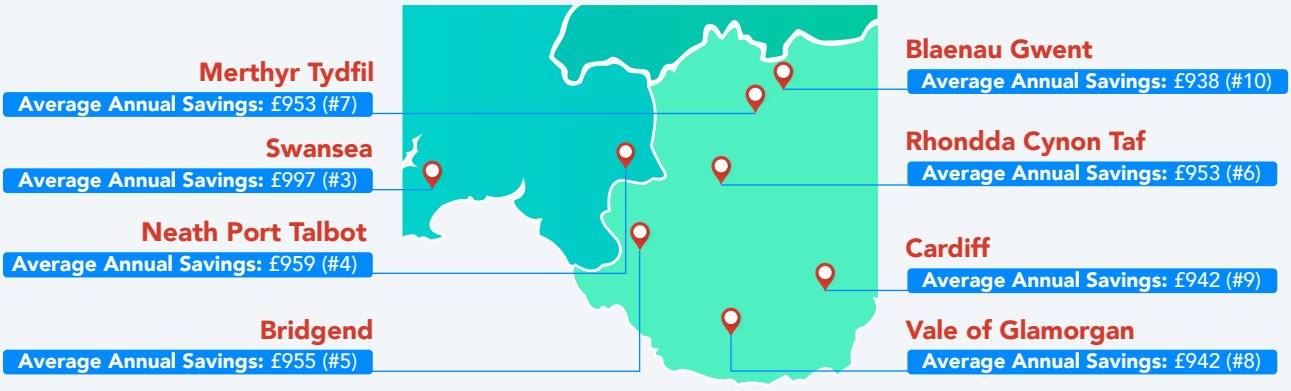


Table 9: Wales's Sunlight Salary Map.

Geographical Region	Average Annual Savings	Average Payback Period	Rate of Return	Average Returns (10 years)	Average Returns (20 years)
Mid Wales	£935	7.93 years	10.1%	£1,446	£10,620
North Wales	£920	8.09 years	9.9%	£1,304	£10,337
South East Wales	£944	7.86 years	10.2%	£1,534	£10,788
South West Wales	£1,001	7.47 years	11.1%	£2,103	£11,908

Table 10: Top 10 Districts in Wales.

Rank	Average Annual Savings	Average Payback Period	Rate of Return	Average Returns (10 years)	Average Returns (20 years)
1	Pembrokeshire (£1,014)	Pembrokeshire (7.41 years)	Pembrokeshire (11.3%)	Pembrokeshire (£2,225)	Pembrokeshire (£12,149)
2	Carmarthenshire (£1,013)	Carmarthenshire (7.41 years)	Carmarthenshire (11.29%)	Carmarthenshire (£2,220)	Carmarthenshire (£12,139)
3	Swansea (£997)	Swansea (7.49 years)	Swansea (11.05%)	Swansea (£2,063)	Swansea (£11,830)
4	Neath Port Talbot (£959)	Neath Port Talbot (7.71 years)	Neath Port Talbot (10.46%)	Neath Port Talbot (£1,687)	Neath Port Talbot (£11,089)
5	Bridgend (£955)	Bridgend (7.76 years)	Bridgend (10.39%)	Bridgend (£1643)	Bridgend (£11,004)
6	Rhondda Cynon Taf (£953)	Rhondda Cynon Taf (7.77 years)	Rhondda Cynon Taf (10.37%)	Rhondda Cynon Taf (£1,631)	Rhondda Cynon Taf (£10,979)
7	Merthyr Tydfil (£953)	Merthyr Tydfil (7.77 years)	Merthyr Tydfil (10.36%)	Merthyr Tydfil (£1,622)	Merthyr Tydfil (£10,960)
8	Vale of Glamorgan (£942)	Vale of Glamorgan (7.86 years)	Vale of Glamorgan (10.20%%)	Vale of Glamorgan (£1,520)	Vale of Glamorgan (£10,763)
9	Cardiff (£942)	Cardiff (7.86 years)	Cardiff (10.20%)	Cardiff (£1,518)	Cardiff (£10,758)
10	Blaenau Gwent (£938)	Blaenau Gwent (7.92 years)	Blaenau Gwent (10.13%)	Blaenau Gwent (£1,477)	Blaenau Gwent (£10,678)

The UK's Sunlight Salary Map – Key Local Authority Districts/ LADs

Country	District	Average Annual Savings	Average Payback Period	Rate of Return	Average Returns (10 years)	Average Returns (20 years)
England	Birmingham	£931	7.97 years	10.0%	£1,407	£10,543
	Bournemouth, Christchurch and Poole	£1,036	7.32 years	11.6%	£2,448	£12,590
	Brighton and Hove	£1,034	7.30 years	11.6%	£2,429	£12,551
	Bristol	£952	7.74 years	10.4%	£1,623	£10,967
	Cambridge	£948	7.81 years	10.3%	£1,575	£10,871
	Cheshire East	£920	8.06 years	9.9%	£1,306	£10,344
	Cornwall	£993	7.52 years	11.0%	£2,018	£11,747
	County Durham	£903	8.23 years	9.6%	£1,139	£10,014
	Coventry	£933	7.93 years	10.1%	£1,428	£10,585
	Dorset	£994	7.51 years	11.0%	£2,035	£11,776
	Greater London	£974	7.64 years	10.7%	£1,835	£11,381
	Leeds	£911	8.18 years	9.7%	£1,212	£10,158
	Leicester	£934	7.93 years	10.1%	£1,446	£10,618
	Liverpool	£944	7.84 years	10.2%	£1,539	£10,805
	Maidstone	£1,047	7.24 years	11.8%	£2,554	£12,795
	Manchester	£919	8.09 years	9.8%	£1,298	£10,329
	Newcastle upon Tyne	£923	8.03 years	9.9%	£1,331	£10,319
	North Yorkshire	£920	8.06 years	9.9%	£1,301	£10,332

England	Norwich	£1,006	7.46 years	11.2%	£2,146	£11,990
	Nottingham	£930	7.96 years	11.0%	£1,402	£10,532
	Sheffield	£917	8.12 years	9.8%	£1,270	£10,272
	Somerset	£965	7.69 years	10.6%	£1,751	£11,220
	Southampton	£999	7.51 years	11.1%	£2,077	£11,859
	Sunderland	£938	7.89 years	10.1%	£1,479	£10,681
	Torbay	£1,069	7.04 years	12.1%	£2,769	£13,222
	Wiltshire	£958	7.73 years	10.4%	£1,678	£11,076
Northern Ireland	Belfast	£942	7.84 years	10.2%	£1,530	£10,798
	Derry City and Strabane	£906	8.17 years	9.7%	£1,174	£10,099
	Fermanagh and Omagh	£883	8.36 years	9.3%	£947	£9,651
	Lisburn and Castlereagh	£938	7.86 years	10.2%	£1,487	£10,713
	Newry, Mourne and Down	£954	7.74 years	10.4%	£1,640	£11,013
Scotland	Aberdeenshire	£913	8.17 years	9.7%	£1,229	£10,178
	City of Edinburgh	£884	8.41 years	9.3%	£944	£9,620
	Dumfries and Galloway	£889	8.33 years	9.4%	£1,034	£9,801
	Fife	£889	8.38 years	9.4%	£996	£9,722
	Glasgow City	£867	8.53 years	9.0%	£779	£9,296

Wales	Cardiff	£942	7.86 years	10.2%	£1,518	£10,758
	Carmarthenshire	£1,013	7.41 years	11.3%	£2,220	£12,139
	Gwynedd	£909	8.19 years	9.7%	£1,196	£10,127
	Pembrokeshire	£1,014	7.41 years	11.3%	£2,225	£12,149
	Powys	£935	7.92 years	10.1%	£1,449	£10,626
	Swansea	£997	7.49 years	11.0%	£2,063	£11,830
	Wrexham	£912	8.17 years	9.7%	£1,222	£10,173

Our analysis: what the data shows

01 Sunshine even on cloudy days: a clear financial case for solar with batteries

The UK's famous grey skies are a common image that springs to mind when asked to paint a picture of the nation. These grey skies do a disservice to the solar industry, with many thinking the UK's weather makes it less suitable for solar panels.

The fact is: solar panels work in daylight, rather than only direct sunlight, and the UK's cooler weather makes solar panels more efficient.[22] Our findings indicate that there are meaningful financial returns for homeowners across the UK, averaging over £800 across all four countries.

02 Location is important, but not everything

While our data makes clear the financial case for solar and storage in the UK, how much returns a homeowner stands to gain is a separate matter. England delivers the strongest financial performance of the four countries, with estimated average annual savings of £954, 7.81-year payback and £10,993 returns over 20 years. Scotland, further north, had the weakest performance (average annual savings of £869, 8.54-year payback and 20-year returns of £9,323).

A key determinant here is the **availability of solar resource**. Our modelling uses hourly PV-GIS generation data, meaning the amount of sunlight available at each location directly influences how much electricity a rooftop system can generate. The amount of electricity generated then affects how much a household can offset through self-consumption or export to the grid, and ultimately their financial returns.

This effect is particularly pronounced in Scotland's Highlands & Islands region, where the estimated average annual savings £819, £127 lower than the UK national average of £946. By contrast, the South East of England achieves an estimated £991 in average annual savings, higher than the nation-wide average.

There is thus a clear north-south differentiation in rooftop value. Within England, the strongest results are concentrated mainly in Southern England, led by Torbay (£1,069) and Maidstone (£1,047) in annual savings. This same broad pattern follows across the UK: Southern Wales performs strongly, while Scotland's highest-performing districts generally come below England's stronger performers.

For Northern Ireland, the geographical differentiation appears to be affected more by coastal and inland areas rather than latitude; the strongest returns are clustered around the east coast (Ards and North Down, Newry, Mourne and Down, and Mid East and Antrim taking the top three district spots), while Derry City and Strabane and Mid Ulster, further west and inland, perform lower. This is indicative of Northern Ireland's weather patterns,[23] with Atlantic systems moving from the west tending to bring more cloud cover and rainfall in the west coast, while the east coast typically sees comparatively more sunshine hours.

It should be emphasised that these locale-based differentiations are not a binary divide between viable and less-viable markets. All four countries in the UK record average annual savings above £800. Even Scotland's lower solar resource still creates measurable household savings, while the UK's current level of residential solar adoption leaves substantial room for accelerating deployment.

03 Today's value is a baseline for opportunity

The data establishes the estimated current potential of the residential solar market, rather than its full potential. While it is a rapidly growing market, it is still not considered mature. With only approximately 1.85 million small-scale installations in the UK,[24] over 255,000 rooftop systems installed in 2025,[25] and government policy at time of writing emphasising rooftop solar as playing a critical role in 2030 and Net Zero targets, we suggest that these estimates may continue to evolve over time.

As market and policy develop further together with improvements in deployment, household electrification and energy management, homeowners may stand to achieve higher returns than what our current analysis indicates. The estimated £14.2 billion annual savings should thus be understood as a snapshot of postcode-level potential under today's assumptions, rather than a ceiling on the future value of the UK's rooftops. Greater adoption of electric vehicles, heat pumps and more sophisticated energy tariffs may also create new opportunities to use self-generated electricity more effectively.

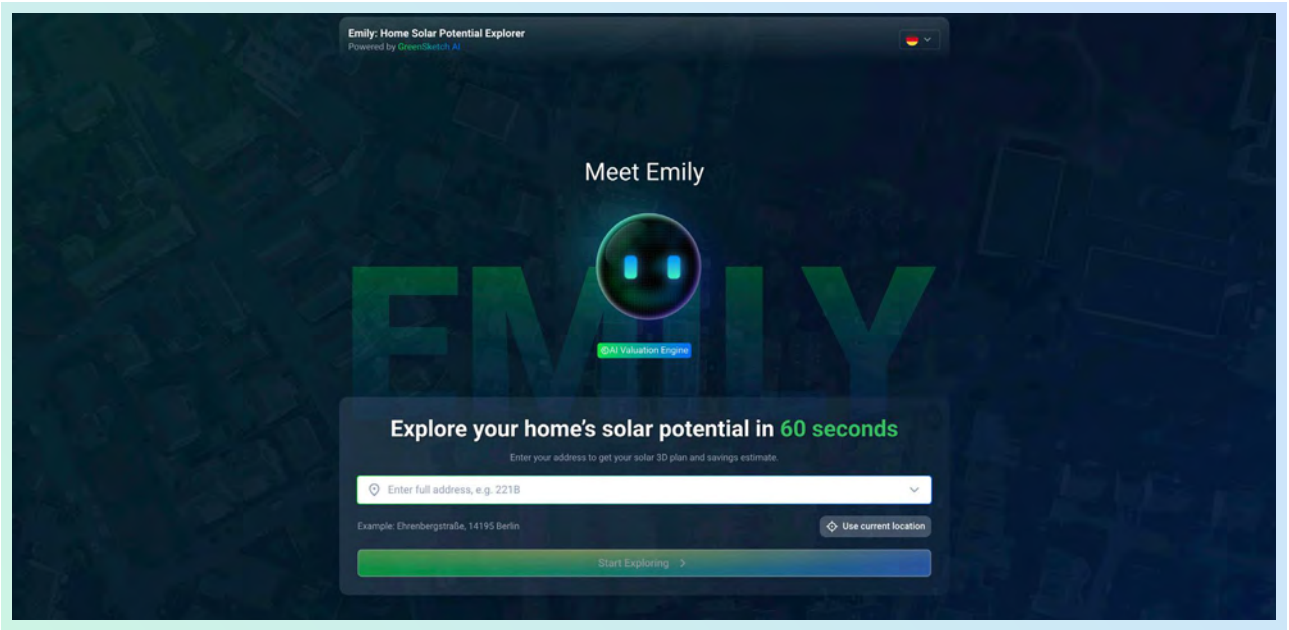
Limitations

From an implementation perspective, we were unable to achieve 100% coverage of every home in the UK. This is due to gaps in source data. With improvements in data collection and AI computing, future editions of this report may be able to produce findings closer to the total nation-wide potential.

Our analysis also does not factor in the rental markets or savings from plug-in solar. Legislation permitting balcony plug-in solar was recently passed in August 2026, and estimates stating they could reduce bills by up to £110 annually.[26] A separate, future analysis on accessing Sunlight Salary for renters through plug-in solar would both broaden and deepen the discourse on distributed energy in the UK.

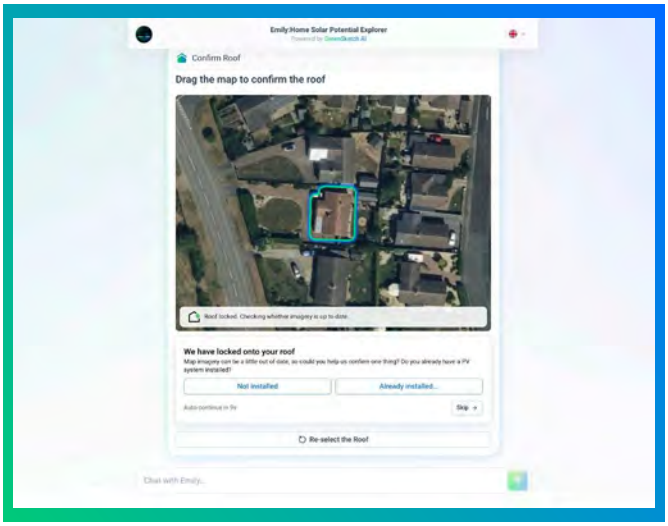
YOUR GUIDE TO GENERATING SUNLIGHT SALARY: SOLAR, BATTERY AND HEAT PUMP SOLUTIONS

Homeowners and solar installers have never been more aligned towards common outcomes, with impetus for installing solar and matching ambitions to scale their business respectively. Yet, demand and industry rarely keep at pace: many installers face challenges in generating warm, high-intent leads, while homeowners often face confusion or know where to start. GreenSketch aims to bridge that gap and simplify the path to solar for installers and homeowners alike.



Step 1: Free Assessment

Use our free online assessment tool on **EnergyBrain** to discover your home's solar potential. All you need is your postcode and a stable Internet connection. After keying in your address, you will receive a personalised rooftop value report tailored to your roof within a few minutes.The report estimates your solar generation potential, annual savings, net investment, IRR and payback period.

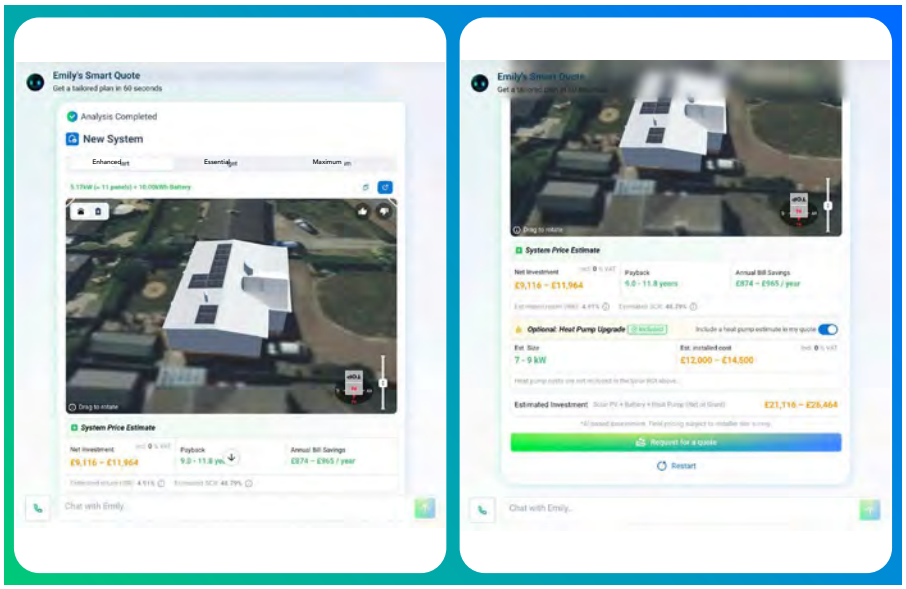


For solar and battery installers, Emily can also be added as a plug-in on your website and social media, allowing you to receive high-intent leads from homeowners 24/7.

Step 2: Tailored Design

In the same rooftop value report, Emily provides three different proposals based on different solar system and battery configurations.

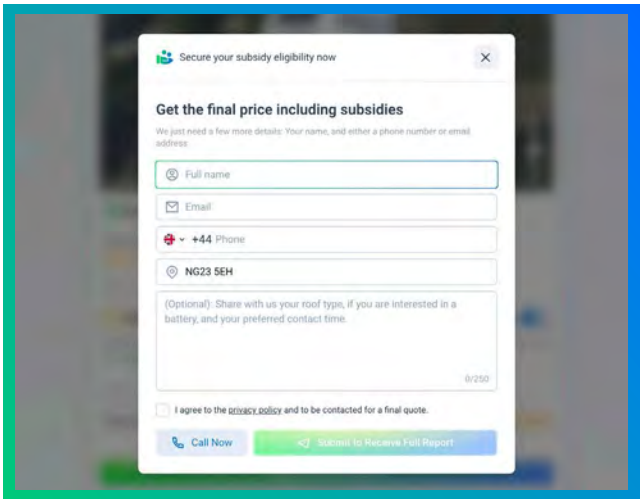
Proposal	System configuration
Essential	*3.29 kWp PV + 5 kWh Battery*
Enhanced	*5.17 kWp PV + 5 kWh Battery*
Maximum	*7.05 kWp PV + 15 kWh Battery*



Depending on your existing set-up, Emily supports two different types of calculations: new systems (PV + battery), or system expansion (additional PV + battery, or battery-only).
This allows you to pick the option that best suits your energy consumption patterns and needs, and immediately see your estimated returns-on-investment on your rooftop solar and battery.

Step 3: Installation

The last step is making your chosen proposal a reality. Based on your location, Emily will suggest a list of installers near you, and your chosen installer will work together with you to develop your system's final design. Once installed, you can start to enjoy the benefits of your solar and battery system.



Maximising your returns

Installing rooftop solar is the first step toward energy independence, but adding **a home battery system**, electric vehicle and **heat pump** can help households to unlock the full potential of their investment.

Generating your own power does exactly just that. But without effective usage and storage, most of the generated electricity during the daytime ends up being sold back to the grid. Every kilowatt hour you draw from yourself instead of the grid represents savings.

A home battery can add value through both financial advantages and energy security:

1. Financial Savings

Without a battery installed, most homes' energy self-consumption rates range from 25% – 40%. With a battery installed, this could rise to 60% – 90%.[27] Using almost all the energy you generate can reduce a household's reliance on the grid. In an environment where cost-of-living crises are more frequent,[28] a combined solar, storage and heat pump system can provide a buffer against future economic disruptions.

2. Climate and Energy Resilience

Climate related impacts are becoming more frequent while driving financial damages, with estimates indicating the 2026 UK heatwaves cost the economy £4.4b.[29] In tandem, volatile geopolitics continue to affect energy security and prices. In this context, decentralised energy systems with solar, storage and heat pumps can improve household resilience while bolstering nation-wide Net Zero goals.

A simplified 24-hour renewable energy cycle might look like this:

1. Daytime solar generation directly supplies household electricity demand.
2. Excess solar energy powers appliances, charges an electric vehicle, and runs the heat pump—particularly for hot water or pre-heating.
3. Remaining surplus energy is stored in a home battery. With time-of-use tariffs in the UK, a battery can charge from the grid during low-cost off-peak periods and discharge during higher-cost periods, as well as store surplus solar.
4. In the evening and overnight, the battery discharges to meet household demand, including continued operation of the heat pump if needed.

In this configuration, households are not only reducing their energy bills: they are optimising the use of their energy assets while maintaining ownership of their household's energy future. A battery can provide backup power (depending on system configuration) and help households navigate price volatility and reduce grid dependency.

CONCLUSION

How will the UK's residential rooftop revolution play out from here?

This report demonstrates that there is a significant and still-developing opportunity for UK's rooftops to move from individual assets to distributed infrastructure. Systems under 10kW in the UK are almost 1.85 million at last estimates, yet this only scratches the surface of the over 30.4 million available dwelling stock in the UK,[30] of which approximately 80% are landed homes.[31]

Our analysis of over 15 million rooftops estimates that an optimised solar and battery system on suitable rooftops in the UK could unlock £14.2 billion in annual electricity savings. The average home assessed could save around £946 a year, receive returns of an estimated £1,555 after 10 years, £10,832 after 20 years, with a payback period within approximately 7.9 years (based on assumptions used in this report).

The results also demonstrate the role location plays in solar and battery performance. Where more sunlight is available, such as in England which leads the UK's Sunlight Salary in our estimates, households have greater potential for household bill savings and long-returns. But geography should not cast a shadow on the scale of the national opportunity: as our report establishes, the majority of homes in the UK can potentially generate meaningful savings for their households.

With clear value, substantial deployment potential and the current supportive policy environment, the UK's residential solar sector has an opportunity to lead the nation's renewables industry in shaking off its laggard image of the past. The next phase of the UK's rooftop solar revolution will thus be more than installing more panels or batteries: it requires the potential value that every suitable rooftop can bring roof brings to household economics.

This report aims to provide a national starting point to usher in the next stage of the solar revolution. By modelling rooftops individually, it demonstrates how the UK's solar and storage opportunity can be quantified at an address level. The £14.2 billion potential annual savings identified in this report should be understood as an indication of the possibilities ahead for the UK's residential energy market as it grows more mature and intelligent.

The UK's rooftop revolution is taking shape, and this is the moment to ensure every suitable roof can play its part.

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The analysis, projections, and insights contained in this report are derived from a combination of market data, proprietary datasets, publicly available information, and algorithmic models, including artificial intelligence and machine learning techniques. While reasonable care has been taken in compiling the information, GreenSketch makes no representation or warranty, express or implied, as to the accuracy, completeness, reliability, or timeliness of the data or analysis presented.

Certain results, forecasts, or estimates in this report are based on assumptions regarding market conditions, technology performance, rooftop conditions, energy pricing, policy frameworks, and other external variables. These assumptions may change over time and may not reflect actual outcomes.

GreenSketch's rooftop value models and AI-based analytical methods are continuously evolving. Model outputs may be updated as new datasets become available, methodologies improve, or market conditions change. As such, findings presented in this report should be interpreted as indicative insights rather than definitive valuations.

This report is not intended to predict the value of any specific asset, property, or rooftop installation. Individual project outcomes may vary significantly depending on location, regulatory environment, system design, financing structure, and other factors beyond the scope of this analysis. Readers are encouraged to seek independent professional advice before making investment, financial, or operational decisions.

Supporting partners

We would like to thank our partners Fox ESS and Tongwei for their contributions to the report.

FOX ESS | TONGWEI

ABOUT US

GreenSketch

GreenSketch is a full-stack, AI-driven solar industry ecosystem platform. Developed by OSW Group, it is the world's first free, end-to-end solar and battery design platform created for solar professionals, connecting the industry with homeowners, installers, and leading solar brands with unprecedented speed, intelligence and transparency. From rooftop mapping, battery system layouts, to instant quotes, GreenSketch supports lead generation to enhance efficiency across the clean energy industry.

greensketch.ai

OSW

Leveraging over a decade of experience and digital expertise, OSW has built a fully integrated one-stop platform for distributed solar smart energy solutions under its One Simple Way philosophy. The OSW ecosystem offers services spanning system design, product sales, carbon trading, and commercial Virtual Power Plant (VPP) software, streamlining operations and increasing efficiency for the entire industry.

osw.energy

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